



City of Dearborn Heights
6045 FENTON • DEARBORN HEIGHTS, MICHIGAN 48127

Mo Baydoun
Council Chairman

Study Sessions and City Council Meetings shall be attended in person by City Council Members. Members of the public have the option of attending in person or virtually.

Purpose: 5:30 p.m. CITY COUNCIL STUDY SESSION: Funding Scout Services

6:00 p.m. CITY COUNCIL REGULAR MEETING

Location: City Hall Council Chambers - 6045 Fenton

Date: Tuesday, October 22, 2024

Join Zoom Meeting

<https://us06web.zoom.us/j/82285001407?pwd=JcaY5Gg1WLhzWlchHyVZR3Xc7qy6mVt.1>

Meeting ID: 822 8500 1407

Passcode: 492883

One tap mobile

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+1 564 217 2000 US
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+1 689 278 1000 US
+1 719 359 4580 US
+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)
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Persons who may wish to contact members of the City Council to provide input or to ask questions on any business that will come before the City Council at the meetings are to contact City Clerk Senia at 313-791-3434 or email at clerks@dearbornheightsmi.gov before 5:00 p.m. on the day of the meeting. For participation during the meeting, click on the Zoom link to enter the meeting room and raise your “zoom” hand to indicate that you have a question. You can also contact the WDHT-TV Staff at any of the above phone numbers.

Council Chairman: (313) 641-0100 • City Clerk: (313) 791-3435
mabaydoun@dearbornheightsmi.gov

**ORDER OF BUSINESS OCTOBER 22, 2024
REGULAR MEETING OF THE DEARBORN HEIGHTS CITY COUNCIL**

1. **CALL OF MEMBERS**

2. **PLEDGE OF ALLEGIANCE**

3. **AGENDA APPROVAL**

4. **APPROVAL OF MINUTES**

A Minutes from the Regular Meeting of October 8, 2024

5. **PUBLIC HEARINGS AND COMMENT ON AGENDA ITEMS & MEMBERS OF THE PUBLIC**

A Comments from Council Members

B Announcements

C Public Comments

6. **FUND TRANSFERS AND CURRENT CLAIMS**

A Claims and ACH/Wire Transfers 6-1 thru 6-17 and 6-19 thru 6-41

7. **CONSIDERATION OF BIDS**

A City Engineer Dib - Bid Award - 2024-2026 Street Pavement Program Contract

B DPW Director Danci - Bid Award - Police Department Boiler Repair/Replacement

C Parks & Recreation Director Sower & CEDD Director Jamal - Bid Award - Van Houten Park Parking Lot Replacement

8. **REPORTS FROM MAYOR**

9. **REPORTS FROM CITY OFFICIALS**

A Council Chair Baydoun - Revision to Policy Regarding Public Comment at City Council Meetings

B Treasurer Hicks-Clayton - Delinquent Personal Property Tax Collections

C Treasurer Hicks-Clayton - Purchase & Payment Using American Express Points - New Credit Card Reader Equipment

D Chief of Staff Hernandez & City Engineer Dib - FundingScout Services

E DPW Director Danci - Purchase & Payment - Lawn Mowers

F Police Chief Swope - 2024 Justice Assistance Grant (JAG)

G **ADDED AT MEETING** - Councilman Saab - Suspension of Contracts Between the City and Led Lion

10. **PETITIONS FROM CITIZENS**

11. **ORDINANCES AND RESOLUTIONS**

A Council Chairman Baydoun - Resolution Regarding Water Consumption Investigation by Independent Party

12. **COMMUNICATIONS**

13. **NEW BUSINESS**

A Business License Renewal - Randy's Robindale Bar

B Temporary Food Truck/Tent/Cart License Renewal Application - Shawarmaje

14. **MEMBERS OF THE PUBLIC**

A Comments from Council Members

B Announcements

C Public Comments

15. **ADJOURNMENT**

MINUTES OCTOBER 8, 2024
REGULAR MEETING OF THE DEARBORN HEIGHTS CITY COUNCIL

Approved for
the Agenda of:

10-22-24

24-448 The meeting was called to order at 6:03 p.m. by Council Chairman Mo Baydoun.

Roll Call showed the following:

Present: Council Chairman Mo Baydoun, Council Chair Pro Tem Hassan Ahmad, Councilwoman Nancy Bryer, Councilman Robert Constan, Councilwoman Denise Malinowski Maxwell, Councilman Hassan Saab, Councilman Tom Wencel.

Absent: None.

Also Present: City Clerk Senia, Mayor Bazzi, Treasurer Hicks-Clayton, Building & Engineering Director Watland, Chief of Staff Hernandez, City Engineer Dib, Comptroller Shepard, Fire Chief Brogan, Human Resource Director Eggly, IT Director Cooper, Library Director McCaffery, Ordinance Enforcement & Animal Control Director Dishroon, Parks & Recreation Director Sower, Police Chief Swope.

The Pledge of Allegiance was led by Congresswoman Rashida Tlaib.

Congresswoman Rashida Tlaib presented a check to the City to aid in the construction of a new Fire Station.

The City Council presented a Certificate of Recognition to the owners of El-Sayed Meat Market for their work in the community.

The City Council presented a Certificate of Recognition to Dr. Youssef Mosallam, Crestwood School District Superintendent, for winning the 2024 National Superintendent of the Year, an award given by the National Association of School Superintendents.

24-449 Motion by Councilman Saab, seconded by Councilman Ahmad to approve the Agenda for the Regular Meeting of October 8, 2024 as submitted.

After further discussion, the motion was amended to reflect the following:

Motion by Councilman Saab, seconded by Councilman Ahmad to approve the Agenda for the Regular Meeting of October 8, 2024 as submitted, with the removal of the following items:

- Item 9-C - Clerk Senia - Requesting Special Outside Legal Counsel
- Item 9-I - Parks & Recreation Director Sower - Canfield Center Marquee Sign - Change Order #1

Motion unanimously adopted

24-450 Motion by Councilman Ahmad, seconded by Councilman Saab to approve the Minutes for the Regular Meeting of September 24, 2024, as outlined in 4-A.

Motion unanimously adopted

24-451 Motion by Councilman Saab, seconded by Councilman Constan to approve Current Claims and ACH/Wire Transfers 6-1 through 6-36 as submitted.

After further discussion, the motion was amended to reflect the following:

Motion by Councilman Saab, seconded by Councilman Constan to approve Current Claims and ACH/Wire Transfers 6-1 through 6-36 as submitted, with the removal of 6-14.

1	ALLIE BROTHERS	\$2,557.46
2	AMAZON	\$10,161.04

3	ARTISTIC LANDSCAPING & LAWN	\$3,991.27
4	ARTISTIC LANDSCAPING & LAWN	\$9,613.42
5	BOWLES BROTHERS SERVICES	\$24,745.00
6	CONFERENCE OF WESTERN WAYNE	\$8,604.00
7	DOWNRIVER UTILITY WASTEWATER AUTH	\$70,694.00
8	DUKE'S ROOT CONTROL INC.	\$4,527.75
9	ENTERPRISE FM TRUST	\$2,312.94
10	ENTERPRISE FM TRUST	\$4,381.53
11	GREAT LAKES WATER AUTHORITY	\$11,721.72
12	HOME DEPOT CREDIT SERVICES	\$2,782.39
13	HOOPLA	\$1,646.99
14	IB ELECTRIC	\$7,000.00
15	JOHNSON CONTROLS, INC.	\$3,883.61
16	KCI	\$1,752.60
17	LIBRARY DESIGN ASSOCIATES, INC	\$1,500.00
18	MICHAEL METZ	\$1,595.00
19	MICHIGAN MUNICIPAL RISK	\$14,757.59
20	PM TECHNOLOGIES	\$2,518.00
21	SAAD LAW, PLLC	\$4,590.00
22	SAAD LAW, PLLC	\$5,985.00
23	SAAD LAW, PLLC	\$6,315.00
24	SCHENK & BRUETSCH PLC	\$1,997.35
25	SCHENK & BRUETSCH PLC	\$3,407.50
26	THE LIBRARY NETWORK	\$2,467.70
27	THE LIBRARY NETWORK	\$12,516.26
28	THE LIBRARY NETWORK	\$11,156.10
29	URBAN TREE TRIMMING	\$3,284.24
30	URBAN TREE TRIMMING	\$2,825.00
31	WAYNE COUNTY	\$476,294.79
32	WAYNE COUNTY	\$4,200.00
33	WAYNE COUNTY	\$30,955.11
34	WAYNE COUNTY ACCOUNTS RECEIVABLE	\$1,577.59
35	WAYNE COUNTY ACCOUNTS RECEIVABLE	\$950.46
36	WAYNE COUNTY ACCOUNTS RECEIVABLE	\$1,235.69

Ayes: Council Chairman Baydoun, Council Chair Pro Tem Ahmad, Councilman Constan, Councilwoman Malinowski Maxwell, Councilman Saab, Councilman Wencel.

Nays: Councilwoman Bryer.

Absent: None.

Motion adopted

24-452 Motion by Councilwoman Bryer, seconded by Councilman Constan to approve the Proposal for FundingScout Services between the City and Wade Trim. In addition, authorize the Mayor and Comptroller or Clerk to sign the necessary warrants, and the Treasurer to issue a one-time payment of \$29,000.00 from GL Acct. #101-200-818.000 and \$67,000.00 from GL Acct. #592-536-818.000, as outlined in 8-A. Per Chief of Staff Hernandez communication dated October 1, 2024.

Ayes: Councilwoman Bryer, Councilman Constan, Councilman Wencel.

Nays: Council Chairman Baydoun, Council Chair Pro Tem Ahmad, Councilwoman Malinowski Maxwell, Councilman Saab.

Absent: None.

Motion defeated

24-453 Motion by Councilman Ahmad, seconded by Councilman Saab to approve of the Alley Vacation for the alley off Ford Road between Berwyn and Norborne. If approved, a utility easement will be part of the closure, as outlined in 8-B. Per Mayor Bazzi communication dated October 1, 2024.

Motion unanimously adopted

24-454 Motion by Councilman Saab, seconded by Councilman Ahmad to approve the Metro Act Permit Extension for Open Fiber, and authorize the Mayor and Clerk sign this document, as outlined in 8-C. Per Mayor Bazzi communication dated October 1, 2024.

Motion unanimously adopted

24-455 Motion by Councilman Saab, seconded by Councilman Wencel to change the agenda and add the following section:

MEMBERS OF THE PUBLIC

A Comments from Council Members

B Announcements

C Public Comments

If this motion passes it would give Council and the public the opportunity to speak at the beginning of the meeting and again at the end of the meeting, and will take effect immediately as of this meeting October 8, 2024, as outlined in 9-A. Per Council Chairman Baydoun and Councilman Wencel communication dated October 1, 2024.

Motion unanimously adopted

24-456 Motion by Councilman Ahmad, seconded by Councilman Saab to receive, note and file the \$30,000.00 grant that was awarded from the Institute for Responsive Government, a non-partisan, nonprofit organization tax-exempt under Internal Revenue Code (IRC) section 501(c)(3). The grant funds must be used exclusively for the non-partisan public purpose of planning and operationalizing secure, efficient, and accessible election administration. The grant's term is June 1, 2024 through May 31, 2025. In addition, authorize the Comptroller to set up or modify the appropriate General Ledger accounts to accept the grant and provide expenditure, as outlined in 9-B. Per Clerk Senia communication dated October 2, 2024.

Motion unanimously adopted

24-457 Motion by Councilwoman Bryer, seconded by Councilwoman Malinowski Maxwell to approve the 2024-2025 Proposed Brownfield Budget adopted by the Brownfield Redevelopment Authority Board on August 14, 2024, as outlined in 9-D. Per Brownfield Administrator Rosco communication dated September 26, 2024.

Motion unanimously adopted

Councilman Wencel stepped out at 7:20 p.m.

- 24-458** Motion by Councilman Saab, seconded by Councilwoman Bryer to approve of the one-year renewal option on the contract with Alan C. Young and Associates P.C for the Dearborn Heights Annual Financial Audit and Single Audit, and authorize the Mayor and Clerk to sign the contract on behalf of the City. In addition, authorize the Mayor and Comptroller to sign the necessary warrants and authorize the Treasurer to issue payment from GL Account 101-223-817.000, as outlined in 9-E. Per Comptroller Shepard communication dated September 26, 2024.

Ayes: Council Chairman Baydoun, Council Chair Pro Tem Ahmad, Councilwoman Bryer, Councilwoman Malinowski Maxwell.

Nays: Councilman Constan, Councilman Saab.

Absent: Councilman Wencel.

Motion adopted

Councilman Wencel returned at 7:24 p.m.

- 24-459** Motion by Councilman Ahmad, seconded by Councilman Saab to approve the purchase and payment of the two-year upgrade to Managed Detection & Response with the potential need of hardware DUO tokens and Security Awareness Training from BAE Networks for a monthly cost based on \$15.00 per workstation/server per month plus \$50.00 per firewall per month plus \$442.00 per month for Security Awareness Training, with the cost of hardware DUO tokens not to exceed an initial cost of \$14,913.00 and an onboarding cost of \$299.00. In addition, authorize the Mayor and Comptroller or Clerk to sign the necessary documents, and the Treasurer to issue payment from Account 101-258-728.001, as outlined in 9-F. Per IT Director Cooper communication dated September 26, 2024.

Motion unanimously adopted

- 24-460** Motion by Councilman Constan, seconded by Councilman Saab to approve the purchase and payment of Mitel Systems upgrades, removal of the need of POTS lines and training from BSB Communications for a cost not to exceed \$28,765.68. In addition, authorize the Mayor and Comptroller or Clerk to sign the necessary warrants, and the Treasurer to issue payment from Account 101-258-728.001 for \$15,304.38 and Account 101-258-932.000 for \$13,461.30, as outlined in 9-G. Per IT Director Cooper communication dated September 26, 2024.

Motion unanimously adopted

- 24-461** Motion by Councilman Ahmad, seconded by Councilman Saab to approve the purchase and payment of PDK Updates and Integrations from BAE Networks for a cost not to exceed \$14,280.00. In addition, authorize the Mayor and Comptroller or Clerk to sign the necessary warrants, and the Treasurer to issue payment from Account 101-258-932.000, as outlined in 9-H. Per IT Director Cooper communication dated September 26, 2024.

Motion unanimously adopted

- 24-462** Motion by Councilman Saab, seconded by Councilman Ahmad to approve payment for twenty (20) additional Flock Cameras (originally approved by City Council Motion 24-333). In addition, authorize the Mayor and the Comptroller to sign the warrant and expend this payment in the amount of \$136,600.00, to be paid out of the Forfeiture Account #265-330-831.265, and authorize the Treasurer to pay from this account, as outlined in 9-J. Per Police Chief Swope communication dated September 17, 2024.

Motion unanimously adopted

24-463 Motion by Councilwoman Bryer seconded by Councilman Constan to approve the amendment to the Police Department salaries and fringe benefits accounts to allow for the hiring of ten (10) additional police officers by:

1. Adjusting the 2024-2025 patrol officer budgetary staffing maximum from 45 employees to 55 employees
2. Amending the police salaries budget (101-300-706.000) by transferring \$705,000.00 into the account which will fund the ten (10) additional patrol officer positions
3. Amending the police department fringe benefit account (100-300-726.000) by transferring \$699,300.30 into the account to cover the fringe benefits for the additional patrol officers.

In addition, authorize the Comptroller to amend the budget general ledger accounts accordingly, as outlined in 9-K. Per Police Chief Swope communication dated September 30, 2024.

After further discussion, the motion was amended to reflect the following:

Motion by Councilwoman Bryer, seconded by Councilman Constan to refer back to Administration Item 9-K, Police Chief Swope - Patrol Budget Amendment.

Motion unanimously adopted

24-464 Motion by Councilman Ahmad, seconded by Councilwoman Bryer to approve the amendment to the Police Department overtime and salaries accounts as follows:

1. Adjust the 2024-2025 dispatcher maximum from 9.5 employees to 10.5 employees.
2. Amend the police overtime budget (101-300-709.000) by transferring \$39,977.60 from police overtime to Police Department salaries (101-300-706.000) to fund the additional dispatcher salary.

In addition, authorize the comptroller to amend the budget general ledger accounts accordingly, as outlined in 9-L. Per Police Chief Swope communication dated October 2, 2024.

Motion unanimously adopted

24-465 Motion by Councilwoman Bryer, seconded by Councilman Constan to adopt the resolution authorizing entering agreements for a Community Development Block Grant Disaster Recovery (CDBG-DR) Planning Grant with the Michigan Economic Development Corporation for Infrastructure Resiliency Planning. In addition, designate Chief of Staff Hernandez as the Environmental Review Certifying Officer, the person authorized to certify the Michigan CDBG-DR Application, the person authorized to sign the Grant Agreement and payment requests, and the person authorized to execute any additional documents required to carry out and complete the grant, as outlined in 11-A. Per Chief of Staff Hernandez & City Engineer Dib communication dated October 1, 2024.

After further discussion, the motion was amended to reflect the following:

Motion by Councilwoman Bryer, seconded by Councilman Constan to adopt the resolution authorizing entering agreements for a Community Development Block Grant Disaster Recovery (CDBG-DR) Planning Grant with the Michigan Economic Development Corporation for Infrastructure Resiliency Planning. In addition, designate Chief of Staff Hernandez as the Environmental Review Certifying Officer, the person authorized to certify the Michigan CDBG-DR Application, the person authorized to sign the Grant Agreement and payment requests, and the person authorized to execute any additional documents required to carry out and complete the grant, as outlined in 11-A. In addition, rescind City Council Motion 23-546 and designate Mayor Bazzi as an authorized signer. Per Chief of Staff Hernandez & City Engineer Dib communication dated October 1, 2024.

Motion unanimously adopted

24-466 Motion by Councilman Constan, seconded by Councilman Ahmad to adopt the resolution authorizing entering agreements for a Community Development Block Grant Disaster Recovery (CDBG-DR) Planning Grant with the Michigan Economic Development Corporation for a Comprehensive Master Plan. In addition, designate Chief of Staff Hernandez as the Environmental Review Certifying Officer, the person authorized to certify the Michigan CDBG-DR Application, the person authorized to sign the Grant Agreement and payment requests, and the person authorized to execute any additional documents required to carry out and complete the grant as outlined in 11-B. In addition, rescind City Council Motion 23-546 and designate Mayor Bazzi as an authorized signer. Per Chief of Staff Hernandez & City Engineer Dib communication dated October 1, 2024.

Motion unanimously adopted

24-467 Motion by Councilwoman Bryer, seconded by Councilman Ahmad to adjourn the Dearborn Heights City Council Regular Meeting.

Motion unanimously adopted

The meeting adjourned at 9:34 p.m.

LYNNE M. SENIA
CITY CLERK

MO BAYDOUN
COUNCIL CHAIRMAN

GEORGANNE SEMENIUK
COUNCIL SECRETARY

Claims 10/22/2024

Inv Ref#	Vendor	Inv Amt
1	AL-AMAN BOOKSTORE LLC	\$ 3,353.38
2	ALLIED BUILDING SERVICES OF DETROIT	\$ 2,432.23
3	BOWLES BROTHERS SERVICES	\$ 1,960.00
4	CARR'S MOTORCOACH LLC	\$ 1,550.00
5	CARR'S MOTORCOACH LLC	\$ 1,550.00
6	CENTRAL WAYNE COUNTY SANITATION	\$ 3,059.85
7	CENTRAL WAYNE COUNTY SANITATION	\$ 6,595.00
8	CENTRAL WAYNE COUNTY SANITATION	\$ 50,938.19
9	CITY OF DEARBORN	\$ 36,279.63
10	CMP DISTRIBUTORS, INC.	\$ 1,982.00
11	CMP DISTRIBUTORS, INC.	\$ 4,024.00
12	DOMINION VOTING SYSTEMS, INC.	\$ 2,266.47
13	EMPCO, INC.	\$ 8,034.92
14	GANDOL, INC.	\$ 1,910.00
15	GREAT LAKES WATER AUTHORITY	\$ 311,541.76
16	GREAT LAKES WATER AUTHORITY	\$ 372,302.94
17	GREAT LAKES WATER AUTHORITY	\$ 375,196.13
18	IB ELECTRIC	\$ 7,000.00
19	JEF R MAINTENANCE	\$ 1,900.00
20	JEF R MAINTENANCE	\$ 2,200.00
21	MARK CHEVROLET	\$ 4,884.56
22	MICHIGAN CAT	\$ 1,590.99
23	OAKLAND COMMUNITY COLLEGE	\$ 1,600.00
24	OAKLAND COUNTY	\$ 1,862.25
25	PAT MILLIKEN FORD	\$ 3,653.46
26	PHOENIX SAFETY OUTFITTERS	\$ 2,685.00
27	PLANTE & MORAN PLLC	\$ 13,419.00
28	PLANTE & MORAN PLLC	\$ 17,388.00
29	QUAD-TRAN OF MICHIGAN, INC.	\$ 4,242.81
30	QUAD-TRAN OF MICHIGAN, INC.	\$ 7,684.00
31	R & R FIRE TRUCK REPAIR, INC.	\$ 4,108.29
32	R & R FIRE TRUCK REPAIR, INC.	\$ 14,105.98
33	RED WING SHOES	\$ 7,148.94
34	RKA PETROLEUM COMPANIES, INC	\$ 1,944.25
35	TELEFLEX LLC	\$ 3,000.00
36	THE ACCUMED GROUP	\$ 9,852.89
37	THE LIBRARY NETWORK	\$ 2,407.66
38	THE LIBRARY NETWORK	\$ 2,651.19
39	THE LIBRARY NETWORK	\$ 10,373.65
40	THE LIBRARY NETWORK	\$ 10,795.70
41	ULLIANCE, INC.	\$ 1,590.00
# of Invoices:	41 # Due: 41 Totals:	\$ 1,323,065.12

Claim 6-18
Removed by Council
Chairman Baydoun
prior to the meeting



Al-Aman Bookstore LLC
7109 Hillside Dr. West Bloomfield, MI 48322
248-636-3521
www.alamanbookstore.com

September 27, 2024

Caroline Kennedy Library
24590 George Street, Dearborn Heights MI 48127

No	English Title	ISBN	Price	Qty	Total
1	My Prayer	9786144391495	\$8.99	1	\$8.99
2	Eid clothes	9786144391525	\$7.99	1	\$7.99
3	Actions we like	9786144391020	\$8.99	1	\$8.99
4	Hands we Like	9786144393017	\$8.99	1	\$8.99
5	A visit to our home	9786144392690	\$11.99	1	\$11.99
6	Ehm... Ehm... Pass me on, please	9786144390740	\$11.99	1	\$11.99
7	Finally, Ghazilan fell asleep	9786144391969	\$10.99	1	\$10.99
8	Flowers under my window	9786144391952	\$11.99	1	\$11.99
9	God Willing	9786144390207	\$8.99	1	\$8.99
10	MarMar ... Cake... Cake	9786144390634	\$0.00	1	\$0.00
11	My words companion	9786144392751	\$8.99	1	\$8.99
12	Room ceiling - Objects	9789953496696	\$14.99	1	\$14.99
13	Thank You	9789953496702	\$0.00	1	\$0.00
14	The Old House	9786144392775	\$9.99	1	\$9.99
15	the passenger	9786144392652	\$8.99	1	\$8.99
16	My Garden	9786144392003	\$5.99	1	\$5.99
17	Read the Stories of Arabic Alphabets - Two Books (Same ISBN)	9789933562434	\$34.99	1	\$34.99
18	Ibn Sina - expert in medicine and anatomy	9789957751593	\$11.99	1	\$11.99
19	Al-Jazari - inventor of the water patching machine	9789957751678	\$11.99	1	\$11.99
20	Al-Biruni - Researcher in all sciences	9789957752606	\$11.99	1	\$11.99
21	Al-Razi - The Father of Medicine	9789957752521	\$11.99	1	\$11.99
22	Al-Zahrawi - the father of surgery	9789957752569	\$11.99	1	\$11.99
23	Alkhawarizmi - The father of mathematics	9789957752538	\$11.99	1	\$11.99
24	Ibn al-Nafis - discoverer of the microcirculation	9789957752576	\$11.99	1	\$11.99

10/9/2024

OK TO
PM

PD

731-738
-808.

25	Ibn Al-Shater - Chief Muezzin	9789957752583	\$11.99	1	\$11.99
26	Ibn Tufayl - Author and Philosopher	9789957752590	\$11.99	1	\$11.99
27	Jabir ibn Hayyan - the father of chemistry	9789957752545	\$11.99	1	\$11.99
28	Omar Khayyam - creator of the Hijri solar calendar	9789957752613	\$11.99	1	\$11.99
29	Yaqut Al-Hamawi - author of encyclopedias	9789957752552	\$11.99	1	\$11.99
30	Ibn Al-Bitar - the Pharmaceutical & Vegetarian	9789957751609	\$11.99	1	\$11.99
31	Ibn al-Haytham - physician and mathematician	9789957751623	\$11.99	1	\$11.99
32	Ibn Battuta - Explorer	9789957751616	\$11.99	1	\$11.99
33	Ibn Majid - Explorer & Sailor	9789957751630	\$11.99	1	\$11.99
34	Al-Khazini - Astrophysicist	9789957751647	\$11.99	1	\$11.99
35	Al-Sharif Al-Idrissi - inventor of the globe	9789957751654	\$11.99	1	\$11.99
36	Ibn Yunus - the Astronomer	9789957751661	\$11.99	1	\$11.99
37	Ibn Khaldun - the Historian	9789957751586	\$11.99	1	\$11.99
38	The Three Adventurers - Social Cultural Entertainment Novels - The Homeowner	9786144631478	\$9.99	1	\$9.99
39	The Three Adventurers - socio-cultural entertainment novels - Class Wars	9786144631447	\$9.99	1	\$9.99
40	The Three Adventurers - socio-cultural entertainment novels - Important matters	9786144631430	\$9.99	1	\$9.99
41	The Three Adventurers - socio-cultural entertainment novels - spring cleaning	9786144631454	\$9.99	1	\$9.99
42	No..., I Don't Want!!!	9786144630884	\$14.99	1	\$14.99
43	The Most Beautiful Kingdom in the World	9789953698847	\$14.99	1	\$14.99
44	Play and discover - the animals	9789953698465	\$9.99	1	\$9.99
45	Play and discover - the colors	9789953698489	\$9.99	1	\$9.99
46	Play and discover - the numbers	9789953698472	\$9.99	1	\$9.99
47	Play and discover - the Opposites	9789953698496	\$9.99	1	\$9.99
48	Press me to hear me - Cat	9789953698212	\$11.99	1	\$11.99
49	Press me to hear me - Caw	9789953698199	\$11.99	1	\$11.99
50	Press me to hear me - Chick	9789953698243	\$11.99	1	\$11.99
51	Press me to hear me - Lamb	9789953698205	\$11.99	1	\$11.99
52	Press me to hear me - Lion	9789953698229	\$11.99	1	\$11.99
53	Press me to hear me - Monkey	9789953698236	\$11.99	1	\$11.99
54	Tactile Learning - What does a duckling like?	9786144631690	\$14.99	1	\$14.99
55	Tactile Learning - What does a kitten like?	9786144631706	\$14.99	1	\$14.99
56	Tactile learning - what does a rabbit like?	9786144631683	\$14.99	1	\$14.99
57	Tactile learning - what does a shark like?	9786144631676	\$14.99	1	\$14.99
58	Tactile Learning - What does the bear like?	9786144631669	\$14.99	1	\$14.99
59	Tactile Learning - What Pygmy Mares Like	9786144631713	\$14.99	1	\$14.99
60	Feeling - Feeling Anxiety	9786144630945	\$7.99	1	\$7.99
61	Feeling - When Feeling Afraid	9789953694399	\$7.99	1	\$7.99
62	Feeling - When Feeling Angry	9789953694375	\$7.99	1	\$7.99
63	Feeling - When Feeling Disappointed	9786144630952	\$7.99	1	\$7.99
64	Feeling - When Feeling Happy	9789953694368	\$7.99	1	\$7.99
65	Feeling - When Feeling kindness	9789953694429	\$7.99	1	\$7.99
66	Feeling - When Feeling Loved	9789953694405	\$7.99	1	\$7.99

67	English-Arabic illustrated educational dictionary	9789953612307	\$24.99	1	\$24.99
68	The first illustrated educational dictionary, English-Arabic	9789953612928	\$19.99	1	\$19.99
69	Learn opposites - inside and outside	9789953616377	\$11.99	1	\$11.99
70	Learn shapes - square and circle	9789953616353	\$11.99	1	\$11.99
71	Learn The Colors - Green & Red	9789953616360	\$11.99	1	\$11.99
72	Learn the numbers one-two-three	9789953616345	\$11.99	1	\$11.99
73	101 Amazing Stories	9786144058169	\$24.99	1	\$24.99
74	101 Bedtime Stories	9786144058923	\$24.99	1	\$24.99
75	101 Interesting Stories	9786144058176	\$24.99	1	\$24.99
76	Children's World Series - Arabic-English - My First Words	9786144059647	\$9.99	1	\$9.99
77	Children's World Series - Arabic-English - My Home	9786144059623	\$9.99	1	\$9.99
78	Children's World Series - Arabic-English - My School	9786144059616	\$9.99	1	\$9.99
79	I can - I can read the clock	9786144639337	\$19.99	1	\$19.99
80	I can - Tie my shoelaces	9786144639313	\$19.99	1	\$19.99
81	I can - use the bathroom	9786144639320	\$19.99	1	\$19.99
82	I Grow & Learn From My Big Book - Part 1	9786144638323	\$19.99	1	\$19.99
83	I Grow & Learn From My Big Book - Part 2	9786144638330	\$19.99	1	\$19.99
84	Spin the wheel and learn – Animals	9786144639450	\$0.00	1	\$0.00
85	Spin the wheel and learn – Farm	9786144639467	\$14.99	1	\$14.99
86	Spin the wheel and learn – Numbers	9786144639481	\$14.99	1	\$14.99
87	Spin the wheel and learn – Words	9786144639474	\$14.99	1	\$14.99
88	The Big Book of Health Education - Part One	9786144638538	\$19.99	1	\$19.99
89	The Big Book of Health Education - Part Two	9786144638545	\$19.99	1	\$19.99
90	The Big Book of Human Values - Volume One	9786144639238	\$19.99	1	\$19.99
91	The Big Book of Human Values - Volume Two	9786144639252	\$19.99	1	\$19.99
92	The Big Book of My Family	9786144639214	\$19.99	1	\$19.99
93	The Big Book of Social Well Being - Part One	9786144638811	\$19.99	1	\$19.99
94	The Big Book of Social Well Being - Part Two	9786144638828	\$19.99	1	\$19.99
95	The Big Book of the Environment	9786144638064	\$19.99	1	\$19.99
96	The Big Book of the Universe	9786144639016	\$19.99	1	\$19.99
97	Me and.. The Divorce of My Parents	9789777952484	\$11.99	1	\$11.99
98	Me and... The New Born Baby	9789777952538	\$11.99	1	\$11.99
99	Me and... The New Family	9789777952491	\$11.99	1	\$11.99
100	Me and...bullying	9789777952507	\$11.99	1	\$11.99
101	Buffy's Adventures: I Love Swimming	9789774278105	\$9.99	1	\$9.99
102	Buffy's Adventures: I Love To Sleep a lot	9789774278082	\$9.99	1	\$9.99
103	A whale swimming	9789948799221	\$19.99	1	\$19.99
104	Canary flies	9789948799245	\$19.99	1	\$19.99
105	Green creeping	9789948799238	\$19.99	1	\$19.99
106	Hotot Jumps	9789948799252	\$19.99	1	\$19.99
107	Healthy Habits - Danny and Diet	9789933168339	\$19.99	1	\$19.99
108	Healthy Habits - Maila and Exercise	9789933168346	\$19.99	1	\$19.99

109	Healthy Habits - Mira and Hygiene	9789933168360	\$19.99	1	\$19.99
110	Healthy Habits - Rani and the Health	9789933168353	\$19.99	1	\$19.99
111	365 Stories	9789933161972	\$29.99	1	\$29.99
112	This is Me	9789933168841	\$19.99	1	\$19.99
113	Be Careful... Rami is driving the tractor	9789933168810	\$19.99	1	\$19.99
114	My First Teacher	9789933161293	\$7.99	1	\$7.99
115	Now I can read	9789933165253	\$14.99	1	\$14.99
116	Bedtime stories - 90 stories	9789933164874	\$14.99	1	\$14.99
117	Me and my family - Me	9789933162597	\$0.00	1	\$0.00
118	Me and my family - My Brother	9789933162627	\$0.00	1	\$0.00
119	Me and my family - My Father	9789933162603	\$0.00	1	\$0.00
120	Me and my family - My Grand Father	9789933162641	\$0.00	1	\$0.00
121	Me and my family - My GrandMother	9789933162658	\$0.00	1	\$0.00
122	Me and my family - My Mother	9789933162610	\$0.00	1	\$0.00
123	Me and my family - My Sister	9789933162634	\$0.00	1	\$0.00
124	Little Hands Discovery – Farm	9789933165413	\$11.99	1	\$11.99
125	Arabic Board Books For kids - Animals	9789933166533	\$11.99	1	\$11.99
126	Arabic Board Books For kids - Colors	9789933166540	\$11.99	1	\$11.99
127	Arabic Board Books For kids - Opposite	9789933166557	\$11.99	1	\$11.99
128	Arabic Board Books For kids - Transportation	9789933166564	\$11.99	1	\$11.99
129	Connect, Feel & Follow Marks - Colors & Shapes	9789933165444	\$11.99	1	\$11.99
130	Connect, Feel & Follow Marks - Numbers	9789933165451	\$11.99	1	\$11.99
131	Connect, Feel & Follow Marks – Animals	9789933165437	\$11.99	1	\$11.99
132	Connect, Feel & Follow Marks – Words	9789933165420	\$11.99	1	\$11.99
133	Discover & Touch – Animals	9789933166625	\$19.99	1	\$19.99
134	Discover & Touch – Colors	9789933166618	\$19.99	1	\$19.99
135	Fairy tale - Cinderella	9789933165468	\$9.99	1	\$9.99
136	Fairy tale - The Ugly Duckling	9789933165482	\$9.99	1	\$9.99
137	Fairy tale – Little Red Riding Hood	9789933165475	\$9.99	1	\$9.99
138	Fairy tale – Snow White	9789933165499	\$9.99	1	\$9.99
139	I am searching - In the Farm	9789933160913	\$14.99	1	\$14.99
140	I am searching - In the Jungle	9789933160906	\$14.99	1	\$14.99
141	I am searching - In the sea	9789933160920	\$14.99	1	\$14.99
142	I am searching - Small Animals	9789933160937	\$14.99	1	\$14.99
143	Little Hands Discovery - Animals	9789933165383	\$11.99	1	\$11.99
144	Little Hands Discovery (Numbers)	9789933155406	\$11.99	1	\$11.99
145	Little Hands Discovery (Words)	9789933165390	\$11.99	1	\$11.99
146	My Daily Life - I Eat By Myself	9789933168087	\$11.99	1	\$11.99
147	My Daily Life - I go to Day Care	9789933168100	\$11.99	1	\$11.99
148	My Daily Life - I go to Shower	9789933168070	\$11.99	1	\$11.99
149	My daily life - I go to sleep	9789933168063	\$11.99	1	\$11.99
150	My Daily Life - I go to the Doctor	9789933168094	\$11.99	1	\$11.99
151	My Daily Life - I go to the potty	9789933168056	\$11.99	1	\$11.99
152	My First Book - Words	9789933163341	\$9.99	1	\$9.99
153	My First Book - Zoo	9789933163358	\$9.99	1	\$9.99

154	My First Book – The Farm	9789933163334	\$9.99	1	\$9.99
155	My First Numbers	9789933165567	\$14.99	1	\$14.99
156	My First Words	9789933165574	\$14.99	1	\$14.99
157	Vision, touch, sensation - Animals	9789933160753	\$9.99	1	\$9.99
158	Vision, touch, sensation - words	9789933160760	\$9.99	1	\$9.99
159	Universal tales	9789933165246	\$14.99	1	\$14.99
160	To my country - I miss you	9789933164102	\$7.99	1	\$7.99
161	Fifteen stories about animals	9789933165260	\$14.99	1	\$14.99
162	Don't be afraid...come to school	9789933168797	\$19.99	1	\$19.99
163	How can I be special?	9789933168766	\$19.99	1	\$19.99
164	I Can	9789933168780	\$19.99	1	\$19.99
165	I depend on myself	9789933168773	\$19.99	1	\$19.99
166	Learn With Sukar - In the Evening	9789933168643	\$14.99	1	\$14.99
167	Learn With Sukar - Jungle animals	9789933168674	\$14.99	1	\$14.99
168	Learn With Sukar - The Colors	9789933168612	\$14.99	1	\$14.99
169	Learn With Sukar - The Feelings	9789933168636	\$14.99	1	\$14.99
170	Learn With Sukar - The Numbers	9789933168629	\$14.99	1	\$14.99
171	Learn With Sukar - The Opposite	9789933168650	\$14.99	1	\$14.99
172	Learn With Sukar - The Shapes	9789933168667	\$14.99	1	\$14.99
173	Fruits	9789386589453	\$0.00	1	\$0.00
174	The Arabic Letters Board Book	9789351791942	\$0.00	1	\$0.00
175	Vegetables	9789386589460	\$0.00	1	\$0.00
176	Al-Motquan - Illustrated School Dictionary	9789953300801	\$39.99	1	\$39.99
177	Fella's Adventures - Fella's cat escapes	9789953588971	\$7.99	1	\$7.99
178	Fella's Adventures - Fella's tail is in the trap	9789953588988	\$7.99	1	\$7.99
179	The Adventures of Fella - Fella is a skilled hunter	9789953588964	\$7.99	1	\$7.99
180	The Adventures of Fulla - Nour and the cat Fulla	9789953588957	\$7.99	1	\$7.99
181	Arabian stories	9789953960035	\$11.99	1	\$11.99
182	My Stories Series - Hardworking Mimi	9786144620205	\$6.99	1	\$6.99
183	My Stories Series - How did I become a doctor?	9786144620243	\$0.00	1	\$0.00
184	My Stories series - Mona learns to sew	9786144620250	\$6.99	1	\$6.99
185	My Stories Series - My Neck is Long	9786144620212	\$6.99	1	\$6.99
186	My Stories series - Noura apologizes	9786144620236	\$0.00	1	\$0.00
187	My Stories Series - The Lame Camel	9786144620274	\$6.99	1	\$6.99
188	My Stories Series - The Lazy Bird	9786144620267	\$6.99	1	\$6.99
189	My Stories Series - The Little Fisherman	9786144620229	\$0.00	1	\$0.00
190	Colorful Butterfly	9789953960203	\$5.99	1	\$5.99
191	Samer Al-Saghir series - Marwan at the zoo	9789953960289	\$5.99	1	\$5.99
192	Diaries of a Pediatrician's Office in USA	9781950966110	\$49.99	1	\$49.99
193	Harry Potter - 1	9789771418818	\$19.99	1	\$19.99
194	Harry Potter - 2	9789771458692	\$19.99	1	\$19.99
195	Harry Potter - 3	9789771458685	\$21.99	1	\$21.99
196	Harry Potter - 4	9789771411330	\$29.99	1	\$29.99
197	Harry Potter - 5	9789771458678	\$29.99	1	\$29.99

198	Harry Potter - 6	9789771458772	\$29.99	1	\$29.99
199	Harry Potter - 7	9789771442059	\$29.99	1	\$29.99
200	Arabic Graded Readers First Set - (20 Books)	9789933166373	\$84.99	1	\$84.99
201	Arabic Graded Readers - Second Set (20 Books)	9789933166380	\$84.99	1	\$84.99

1	Lulu learns to say: Thank You	9789953169675	\$11.99	2	\$23.98
2	Lulu learns to say: You are welcome (Af'wan)	9789953169668	\$11.99	2	\$23.98
3	Lulu learns to say: Good Morning	9789953169699	\$11.99	2	\$23.98
4	Lulu learns to say: Please	9789953169682	\$11.99	2	\$23.98
5	My First Pictured Book - At the Farm	9789953434551	\$14.99	2	\$29.98
6	My First Pictured Book - At home	9789953434544	\$14.99	2	\$29.98
7	My First Knowledge - Shapes	9786056990564	\$7.99	2	\$15.98
8	My First Knowledge - Animals	9786056990588	\$7.99	2	\$15.98
9	My First Knowledge - Colors	9786056990519	\$7.99	2	\$15.98
10	My First Knowledge - Arabic Alphabet	9786148023859	\$9.99	2	\$19.98
11	My First Book for Learning - Shapes	9786144630570	\$9.99	2	\$19.98
12	My First Book for Learning - Feeling	9786144630587	\$9.99	1	\$9.99
13	My First Book for Learning - Numbers	9786144630600	\$9.99	1	\$9.99
14	My First Book for Learning - Farm Animals	9786144630594	\$9.99	1	\$9.99
15	Montessori Child - Follow Me	9786144630624	\$9.99	2	\$19.98
16	Montessori Child - Transportation	9786144630648	\$9.99	2	\$19.98
17	Montessori Child - Big or Small	9786144630617	\$9.99	2	\$19.98
18	Montessori Child - Animals	9786144630631	\$9.99	2	\$19.98
19	Touch and Feel: Eid Gifts	9786144630464	\$11.99	1	\$11.99
20	Touch and Feel : Delicious & Yummy	9786144630488	\$11.99	2	\$23.98
21	Touch and Feel: Let's Go to Play	9786144630495	\$11.99	2	\$23.98
22	Children Illustrated Book: Cloth	9789953164076	\$7.99	2	\$15.98
23	Children Illustrated Book: Cats	9789953165660	\$7.99	2	\$15.98
24	Children Illustrated Book: Mountain		\$7.99	1	\$7.99
25	Children Illustrated Book: Forest		\$7.99	1	\$7.99
26	Children Illustrated Book: Small Animals	9789953165684	\$7.99	2	\$15.98
27	Children Illustrated Book: Small Dogs	9789953165707	\$7.99	2	\$15.98
28	Children Illustrated Book: Music Instrument	9789953165882	\$7.99	2	\$15.98
29	Arabic English Stories – The Treasure	9789773432058	\$6.99	2	\$13.98
30	Arabic English Stories – The Eid	9789773432010	\$6.99	2	\$13.98
31	Arabic English Stories – The Picnic	9789773431990	\$6.99	2	\$13.98
32	Arabic English Stories – The Trip	9789773432041	\$6.99	2	\$13.98
33	Arabic English Stories – The Garden	9789773432003	\$6.99	2	\$13.98
34	Arabic English Stories – Shahed & Zareef	9789773431983	\$6.99	2	\$13.98
35	Arabic English Stories – The Year Seasons	978977343	\$6.99	1	\$6.99
36	Arabic English Stories – A Gift to My Sister	978977343	\$6.99	1	\$6.99
37	My drawing brush draws	9789933164140	\$7.99	2	\$15.98
38	Social Awareness - Hardcover Book	9789953615226	\$29.99	2	\$59.98
39	What you would do	9789933166892	\$14.99	2	\$29.98
40	A House - Houses	9789933166878	\$14.99	2	\$29.98
41	16 Stories - in the Princesses Land	9789933160807	\$29.99	2	\$59.98
42	Stories of Today & Everytime	9789933160814	\$29.99	2	\$59.98

43	Controlling Anger Set - Hardcover Book	9789953615233	\$39.99	2	\$79.98
44	Extend a Love Bridge	9789933166908	\$14.99	2	\$29.98
45	365 Days with the Prophet Muhammad	9786050814354	\$39.99	1	\$39.99
46	Four Season Book	9789953960319	\$7.99	2	\$15.98
47	Four Season - Fall	9789953459660	\$4.99	2	\$9.98
48	Four Season - Winter	9789953459677	\$4.99	2	\$9.98
49	Four Season - Spring	9789953459684	\$4.99	2	\$9.98
50	Four Season - Summer	9789953459684	\$4.99	2	\$9.98
51	Ramad and the Seasons - Fall	9786057618870	\$7.99	2	\$15.98
52	Ramad and the Seasons - Winter	9786057618863	\$7.99	2	\$15.98
53	Ramad and the Seasons - Spring	9786057618856	\$7.99	2	\$15.98
54	Ramad and the Seasons - Summer	9786057618849	\$7.99	2	\$15.98
55	I Love My Family Set		\$19.99	1	\$19.99
				Subtotal	\$3,945.15
				Disct. 15%	-\$591.77
				Balance	\$3,353.38



ALLIED BUILDING SERVICE
Allied Building Service Company of Detroit, Inc.
1801 Howard Street
Detroit, MI 48216-1920
PH: (313) 230-0800

Invoice

Invoice Date September 23, 2024	Page 1 of 1
Billing Cycle -	
Invoice Number 00349489	
Amount Due \$2,432.23	

CUSTOMER:

Dearborn Heights
6045 Fenton
Dearborn Heights, MI
48127

LOCATION:

John F Kennedy Library - Dearborn Hts.
24602 Van Born Rd.
Dearborn Hts., MI
48125

Project 202548-WO256393	Terms net 30	Due Date October 23, 2024	Cust PO #
----------------------------	-----------------	------------------------------	-----------

Description	Qty	\$/ea	Total
Removed old condenser fan motor 1. Used puller and rust buster and still could not remove fan blades. Fastened in new motor. Installed new blades. Wired motor.	0.00	\$ 0.00	\$0.00
Labor	7.00	\$ 95.00	\$665.00
Materials	1.00	\$ 1,767.23	\$1,767.23

Comments:

sub-total:	\$2,432.23
sales tax:	\$0.00
total:	\$2,432.23
payments & credits:	\$0.00
balance due:	\$2,432.23

Handwritten signature 10/7/24

738-738-931.000
10-1-24

Allied Building Services pays all required sales tax on materials used on this invoice at the time of purchase.
If you have any questions regarding this invoice, contact Caitlin Ringey ((313) 230-0787).

REMIT PAYMENT TO:

Allied Building Services of Detroit, Inc. | 1801 Howard Street, Detroit, MI 48216-1920 | PH: (313) 230-0800 | FAX: (313) 230-0810

INVOICE

Bowles Brothers Services, INC.
22198 Merriman Rd.
New Boston, MI 48164

willybowles@msn.com
+1 (734) 341-9913



Bill to

City of Dearborn Heights
6045 Fenton Street
Dearborn, Mi 48127 USA

Ship to

City of Dearborn Heights
6045 Fenton Street
Dearborn, Mi 48127 USA

Invoice details

Invoice no.: 1330
Terms: Net 30
Invoice date: 10/08/2024
Due date: 11/07/2024

#	Date	Product or service	Description	Qty	Rate	Amount
1.	09/30/2024	Wood Removal	Ticket 6150 semi wood removed from DPW	35	\$8.00	\$280.00
2.	09/30/2024	Wood Removal	Ticket 6151 semi wood removed from DPW	35	\$8.00	\$280.00
3.	09/30/2024	Wood Removal	Ticket 6152 semi wood removed from DPW	35	\$8.00	\$280.00
4.	09/30/2024	Wood Removal	Ticket 6153 semi wood removed from DPW	35	\$8.00	\$280.00
5.	09/30/2024	Wood Removal	Ticket 6154 semi wood removed from DPW	35	\$8.00	\$280.00
6.	09/30/2024	Wood Removal	Ticket 6180 semi wood removed from DPW	35	\$8.00	\$280.00
7.	09/30/2024	Wood Removal	Ticket 6149 semi wood removed from DPW	35	\$8.00	\$280.00

Ways to pay

Total

\$1,960.00

View and pay

Account # 101-440-818,000

Handwritten signature 10/9/24

View invoice online

Scan code or go to the link below to view the invoice online



Carr's Motorcoach, LLC.

9370 Livernois Ave.
Detroit, MI 48204
313-931-1240
855-363-7222

A Charter Bus Company

(Fax:)
www.carrsmotorcoach.com
sales@carrsmotorcoach.com

Invoice

To: Dearborn Heights - Kim
Kim Sower
1801 North Beach Daly
Dearborn Heights, MI 48127

Invoice # 9483

Date Printed: Thursday, September 19, 2024

Phone: 313-791-3553 Fax:
Salesperson: Madison Kappel
Salesperson Email: sales@carrsmotorcoach
Customer Email: ksower@dearbornheightsmi.gov

<u>Date</u>	<u># Vehicles</u>	<u>Size</u>	<u>From</u>	<u>To</u>	
09/22/2024	1	56-PAX	Eton Senior Center	Starline Ferry	OneWay
COST COMPONENTS					
	<u># Units:</u>	<u>Cost/Unit:</u>	<u>Note:</u>	<u>Total:</u>	
Flat Rate	1.00	1550.00		\$1,550.00	
Total Cost of Move:				\$1,550.00	

Total Cost of Charter: \$1,550.00
Total Received to Date: \$0.00
Balance Due: September 23, 2024 \$1,550.00

Itinerary:

Kim S.
691-884



Carr's Motorcoach, LLC.

A Charter Bus Company

(Fax:)

www.carrsmotorcoach.com
sales@carrsmotorcoach.com

9370 Livernois Ave.
Detroit, MI 48204
313-931-1240
855-363-7222

Invoice

To: Dearborn Heights - Kim
Kim Sower
1801 North Beach Daly
Dearborn Heights, MI 48127

Invoice # 9484

Date Printed: Thursday, September 19, 2024

Phone: 313-791-3553 Fax:
Salesperson: Madison Kappel
Salesperson Email: sales@carrsmotorcoach.com
Customer Email: ksower@dearbornheightsmi.gov

<u>Date</u>	<u># Vehicles</u>	<u>Size</u>	<u>From</u>	<u>To</u>	
09/25/2024	1	56-PAX	Starline Ferry	Eton Senior Center	OneWay
COST COMPONENTS					
			<u># Units:</u>	<u>Cost/Unit:</u>	<u>Note:</u>
		Flat Rate	1.00	1550.00	
					<u>Total:</u>
					\$1,550.00
					<u>Total Cost of Move:</u>
					\$1,550.00

Total Cost of Charter: \$1,550.00
Total Received to Date: \$0.00
Balance Due: September 26, 2024 \$1,550.00

Itinerary:

Kim S.
691-884

Central Wayne County Sanitation Auth.

3850 Second St., Suite 170
Wayne, MI 48184
USA

Voice: 734-722-9980

Fax: 734-722-9985

INVOICE

Invoice Number: 08/24-COMP-DH

Invoice Date: Aug 31, 2024

Page: 1

Duplicate

Bill To:

City of Dearborn Heights
John Danci, DPW Director
6045 Fenton
Dearborn Heights, MI 48127

Ship to:

City of Dearborn Heights
John Danci, DPW Director
6045 Fenton
Dearborn Heights, MI 48127

Customer ID	Customer PO	Payment Terms	
6261		Net 30 Days	
Sales Rep ID	Shipping Method	Ship Date	Due Date
	Airborne		9/30/24

Quantity	Item	Description	Unit Price	Amount
80.82		August, 2024 Compost Disposal - 80.82 tons @ \$37.86 per ton	37.86	3,059.85
Account # 101-200-818,000				
Subtotal				3,059.85
Sales Tax				
Total Invoice Amount				3,059.85
Payment/Credit Applied				
TOTAL				3,059.85

Check/Credit Memo No:

He Ri
9/30/24

Central Wayne County Sanitation Auth.

3850 Second St., Suite 170
Wayne, MI 48184
USA

INVOICE

Invoice Number: 09/24-Admin-DH
Invoice Date: Sep 22, 2024
Page: 1
Duplicate

Voice: 734-722-9980
Fax: 734-722-9985

Bill To:
City of Dearborn Heights John Danci, DPW Director 6045 Fenton Dearborn Heights, MI 48127

Ship to:
City of Dearborn Heights John Danci, DPW Director 6045 Fenton Dearborn Heights, MI 48127

Customer ID	Customer PO	Payment Terms	
6261		Net 30 Days	
Sales Rep ID	Shipping Method	Ship Date	Due Date
	Airborne		10/22/24

Quantity	Item	Description	Unit Price	Amount
		September, 2024 Administration, Operating & Monofill		6,595.00
		Account # 101-200-818,000		
Subtotal				6,595.00
Sales Tax				
Total Invoice Amount				6,595.00
Payment/Credit Applied				
TOTAL				6,595.00

Check/Credit Memo No:

John Danci
9/30/24

Central Wayne County Sanitation Auth.

3850 Second St., Suite 170
Wayne, MI 48184
USA

INVOICE

Invoice Number: 08/24-HHLD-DH

Invoice Date: Aug 31, 2024

Page: 1

Duplicate

Voice: 734-722-9980

Fax: 734-722-9985

Bill To:

City of Dearborn Heights
John Danci, DPW Director
6045 Fenton
Dearborn Heights, MI 48127

Ship to:

City of Dearborn Heights
John Danci, DPW Director
6045 Fenton
Dearborn Heights, MI 48127

Customer ID	Customer PO	Payment Terms	
6261		Net 30 Days	
Sales Rep ID	Shipping Method	Ship Date	Due Date
	Airborne		9/30/24

Quantity	Item	Description	Unit Price	Amount
2,616.24		August, 2024 Household Disposal - 2,616.24 tons @ 19.47 per ton	19.47	50,938.19
Account # 101-200-818,000				
Subtotal				50,938.19
Sales Tax				
Total Invoice Amount				50,938.19
Payment/Credit Applied				
TOTAL				50,938.19

Check/Credit Memo No:

 9/30/24

**CENTRAL WAYNE COUNTY SANITATION AUTHORITY
ANALYSIS OF 2024/25 HOUSEHOLD TONNAGE
AS OF AUGUST 31, 2024**

	BUDGETED HOUSEHOLD TONNAGE JULY THRU AUGUST, 2024	ACTUAL HOUSEHOLD TONNAGE JULY THRU AUGUST, 2024	INCREASE/ (DECREASE) IN TONNAGE	PERCENTAGE INCREASE/ (DECREASE) IN TONNAGE
DEARBORN HEIGHTS	4,705.36	5,377.39	672.03	14.28%
GARDEN CITY	2,518.08	1,665.26	(852.82)	-33.87%
INKSTER	1,983.79	2,039.99	56.20	2.83%
WAYNE	1,447.06	1,586.71	139.65	9.65%
WESTLAND	5,524.19	5,364.75	(159.44)	-2.89%
TOTAL	16,178.48	16,034.10	(144.38)	-0.89%

	2024/25 BUDGETED HOUSEHOLD TONNAGE	PERCENTAGE INCREASE/ (DECREASE) BASED ON JULY THRU AUGUST 2024 TONNAGE	PROJECTED INCREASE/ (DECREASE) IN TONNAGE	BUDGETED TONNAGE MINUS PROJECTED TONNAGE INCREASE/ (DECREASE)	COST OF PROJECTED TONNAGE AT RATE PER TON OF \$19.47
DEARBORN HEIGHTS	25,480.00	14.28%	3,639.11	29,119.11	566,949.08
GARDEN CITY	14,399.00	-33.87%	(4,876.63)	9,522.37	185,400.46
INKSTER	10,426.00	2.83%	295.36	10,721.36	208,744.97
WAYNE	7,569.00	9.65%	730.45	8,299.45	161,590.37
WESTLAND	30,883.00	-2.89%	(891.35)	29,991.65	583,937.43
TOTAL	88,757.00	-0.89%	(1,103.06)	87,653.94	\$1,706,622.31

	2024/25 BUDGETED HOUSEHOLD AMOUNT	2024/25 HOUSEHOLD AMOUNT BASED ON PROJECTED TONNAGE	PROJECTED BUDGETED SAVINGS (DEFICIT)
DEARBORN HEIGHTS	476,986.00	566,949.08	(89,963.08)
GARDEN CITY	269,549.00	185,400.46	84,148.54
INKSTER	195,175.00	208,744.97	(13,569.97)
WAYNE	141,692.00	161,590.37	(19,898.37)
WESTLAND	578,130.00	583,937.43	(5,807.43)
TOTAL	\$1,661,532.00	\$1,706,622.31	(\$45,090.31)

PROJECTED THREE YEAR TONNAGE AVERAGE FOR 2024/25	
YEAR	TONNAGE
2022/23	87,489.44
2023/24	88,403.75
2024/25	87,653.94
Total	263,547.13
Projected Three Year Tonnage Average	87,849.04



CITY OF DEARBORN

MISC DEPT. 3103
PO BOX 30516
LANSING, MI 48909-8016

INVOICE 0000068248

Customer No.	Service Code	Invoice Amount
9000031	DPWWAT	\$36,279.63
Service Date	Invoice Date	Due Date
07/15/2024	09/20/2024	10/20/2024

CITY OF DEARBORN HEIGHTS
ATTN: DIRECTOR OF PUBLIC WORKS
6045 FENTON
DEARBORN HEIGHTS MI 48127

PROPERTY ADDRESS (IF APPLICABLE):
6045 FENTON

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
1.00	SEWAGE CHARGES	33,695.65	33,695.65
1.00	WATER CHARGES	2,583.98	2,583.98

SERVICE DATES: 04/10/24 - 07/15/24

FOR QUESTIONS REGARDING THIS INVOICE, PLEASE CONTACT THE WATER DEPARTMENT
AT (313) 943-3803

Account # 592-537-929,000 33,695.65

Account # 592-537-928,000 2583.98

LATE CHARGES WILL BE CALCULATED, IF APPLICABLE, PER AGREEMENT.

FOR QUESTIONS REGARDING PAYMENT OF INVOICE, PLEASE CALL TREASURY AT (313) 943-2045
FOR FURTHER ASSISTANCE.

INVOICE AMOUNT	\$36,279.63
INVOICE CREDITS/ADJUSTMENTS	\$0.00
PAYMENTS APPLIED	\$0.00
INVOICE BALANCE	\$36,279.63

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT. THANK YOU



INVOICE 0000068248

MAKE CHECK PAYABLE TO:
CITY OF DEARBORN

Customer No.	Service Code	Balance Due
9000031	DPWWAT	\$36,279.63
Service Date	Invoice Date	Due Date
07/15/2024	09/20/2024	10/20/2024

MAIL PAYMENTS TO:

CITY OF DEARBORN
MISC DEPT. 3103
PO BOX 30516
LANSING, MI 48909-8016



Sh Di 9/30/24

91 0000068248 00 003627963 000009000031 9

CITY OF DEARBORN HEIGHTS

6045 FENTON • DEARBORN HEIGHTS, MICHIGAN 48127
TELEPHONE (313) 791-3443 • FAX (313) 791-3441

Ship To:

POLICE DEPARTMENT
CITY OF DEARBORN HEIGHTS

25637 MICHIGAN AVENUE

DEARBORN HEIGHTS MI 48125

VENDOR NO. 3006

V
E
N
D
O
R
C.M.P. DISTRIBUTORS, INC.
16753 INDUSTRIAL PARKWAY

LANSING MI 48906

PURCHASE ORDER

NO. 25-005

Date: 07/02/24

BLANKET PURCHASE ORDERS

JULY 1, 2024 THROUGH JUNE 30, 2025

TO BE PAID MONTHLY

TO COVER THE COST OF:

Quantity	Unit	Description	Unit Cost	Total Cost
1	UNIT	AMMUNITION, VESTS & OTHER MISC ITEMS	\$0.00	\$0.00

FOR THE POLICE DEPT
101-300-744.000

Total PO Amount

6,006.-
0.00

JERROD HART

DIRECT INQUIRIES TO

BUYER

Sanjiv Swope
10/8/24

PURCHASE ORDER NUMBER MUST APPEAR ON INVOICE, OR INVOICE WILL NOT BE PAID!

M.S.D.S. REQUIRED ON HAZARDOUS MATERIAL

NOTE: ANY DEVIATION IN PRICE ON THIS ORDER MUST BE APPROVED BY THE CITY PURCHASING DIVISION PRIOR TO DELIVERY

1. ORIGINAL INVOICES TO:
COMPTROLLER'S OFFICE
6045 FENTON, DBN. HTS., MI 48127
2. EXEMPT FROM STATE/LOCAL AND
FEDERAL TAXES: 38-1712300
3. PURCHASE ORDER NUMBER MUST APPEAR ON ALL
INVOICES, SHIPPERS, AND CORRESPONDENCES.
4. SUBSTITUTIONS NOT ACCEPTED WITHOUT PRIOR
APPROVAL.
5. PARTIAL SHIPMENT WILL BE ACCEPTED IF
INVOICED SEPARATELY. PAYMENT MADE UPON
COMPLETION OF PURCHASE ORDER.
6. ACKNOWLEDGMENT COPY MUST BE RETURNED BEFORE
ORDER IS BINDING.



16753 Industrial Parkway
Lansing, MI 48906

Phone # 517-721-0970
Fax # 517-721-0974

Invoice

Date	Invoice #
9/24/2024	017317

Bill To
Dearborn Heights Police Department*** 25637 Michigan Avenue Dearborn Heights, MI 48125

Ship To
Dearborn Heights Police Department 25637 Michigan Avenue Dearborn Heights, MI 48125

P.O. No.	Account #	Terms	Rep	Ship Date	Shipping Method
Verbal Hatten	975	Net 30	MB	9/24/2024	Drop Ship

Item	Qty	Description	Price	Amount
PB-BII-5-HI-LITE-1	3	Point Blank Threat Level II Concealable Ballistic Vest with (1) HI-LITE Carrier and Soft Trauma Plate (NIJ Model No. BII-5) Carrier - Navy Wesley Ananich - 240000237044 Hassan Zaarour - 240000237117 Aaron Franckowiak - 240000237125	649.00	1,947.00T
Shipping and Handling	1	Shipping and Handling	35.00	35.00T

RETURN POLICY: Returns accepted on un-opened, un-used items within 10 days with Invoice. Restocking fee may be applied.	Subtotal	\$1,982.00
	Sales Tax (0.0%)	\$0.00
	Total	\$1,982.00
	Payments/Credits	\$0.00
	Balance Due	\$1,982.00

CITY OF DEARBORN HEIGHTS

6045 FENTON • DEARBORN HEIGHTS, MICHIGAN 48127
TELEPHONE (313) 791-3443 • FAX (313) 791-3441

Ship To:

POLICE DEPARTMENT
CITY OF DEARBORN HEIGHTS
25637 MICHIGAN AVENUE

DEARBORN HEIGHTS MI 48125

VENDOR NO. 3006

V
E
N
D
O
R C.M.P. DISTRIBUTORS, INC.
16753 INDUSTRIAL PARKWAY
LANSING MI 48906

PURCHASE ORDER

NO. 25-005

Date: 07/02/24

BLANKET PURCHASE ORDERS

JULY 1, 2024 THROUGH JUNE 30, 2025
TO BE PAID MONTHLY

TO COVER THE COST OF:

Quantity	Unit	Description	Unit Cost	Total Cost
1	UNIT	AMMUNITION, VESTS & OTHER MISC ITEMS	\$0.00	\$0.00

FOR THE POLICE DEPT
101-300-744.000

Total PO Amount

6,006.-
0.00

JERROD HART

DIRECT INQUIRIES TO

BUYER

Sanjiv Swope
10/8/24

PURCHASE ORDER NUMBER MUST APPEAR ON INVOICE, OR INVOICE WILL NOT BE PAID!

M.S.D.S. REQUIRED ON HAZARDOUS MATERIAL

NOTE: ANY DEVIATION IN PRICE ON THIS ORDER MUST BE APPROVED BY THE CITY PURCHASING DIVISION PRIOR TO DELIVERY

1. ORIGINAL INVOICES TO:
COMPTROLLER'S OFFICE
6045 FENTON, DBN. HTS., MI 48127
2. EXEMPT FROM STATE/LOCAL AND
FEDERAL TAXES: 38-1712300
3. PURCHASE ORDER NUMBER MUST APPEAR ON ALL
INVOICES, SHIPPERS, AND CORRESPONDENCES.
4. SUBSTITUTIONS NOT ACCEPTED WITHOUT PRIOR
APPROVAL.
5. PARTIAL SHIPMENT WILL BE ACCEPTED IF
INVOICED SEPARATELY. PAYMENT MADE UPON
COMPLETION OF PURCHASE ORDER.
6. ACKNOWLEDGMENT COPY MUST BE RETURNED BEFORE
ORDER IS BINDING.



16753 Industrial Parkway
Lansing, MI 48906

Phone # 517-721-0970
Fax # 517-721-0974

Invoice

Date	Invoice #
9/24/2024	017320

Bill To	Ship To
Dearborn Heights Police Department*** 25637 Michigan Avenue Dearborn Heights, MI 48125	Dearborn Heights Police Department 25637 Michigan Avenue Dearborn Heights, MI 48125

P.O. No.	Account #	Terms	Rep	Ship Date	Shipping Method
Verbal Hatten	975	Net 30	MB	9/24/2024	Drop Ship

Item	Qty	Description	Price	Amount
PB-BII-5-HI-LITE-1	6	Point Blank Threat Level II Concealable Ballistic Vest with (1) HI-LITE Carrier and Soft Trauma Plate (NIJ Model No. BII-5) Carrier - Navy Ty Jasman - 240000237052 Ali Hammoud - 240000237061 Brock Bacher - SB0240120052 Joseph Stephens - 240000237070 Ehkemini Aminy - 240000237071 Jad Taleb - 240000237102	659.00	3,954.00T
Shipping and Handling	1	Shipping and Handling	70.00	70.00T

RETURN POLICY: Returns accepted on un-opened, un-used items within 10 days with Invoice. Restocking fee may be applied.	Subtotal	\$4,024.00
	Sales Tax (0.0%)	\$0.00
	Total	\$4,024.00
	Payments/Credits	\$0.00
	Balance Due	\$4,024.00

DOMINION
VOTING



P.O. Box #343
Broomfield CO 80038 United States
FED ID#27-0565149

Invoice Date	10/03/2024
Invoice #	DVS156693
Page	1

Bill To:

Dearborn Heights City, MI (Wayne County)
Lynne Senia
6045 Fenton Street
Dearborn Heights MI 48127

Ship To:

City of Dearborn Heights, MI (Wayne County)
Lynne Senia
6045 Fenton Street
Dearborn Heights MI 48127

Purchase Order No.	Customer ID	Salesperson ID	Shipping Method	Payment Terms	Req Ship Date	Master No.
	USMIDEARBO	LPATRICOLA	BEST WAY	Net 30	10/07/2024	66,841
Ordered	Shipped	B/O	Item Description	Discount	Unit Price	Ext. Price
30	30	0	COMPACT FLASH MEMORY CARD 16 GB CENTON - C4-CM-CF-16.4	\$0.00	\$75.00	\$2,250.00

Approved for Payment
Lynne M. Senia
101-190-818.000
10/8/24

REMIT TO: Dominion Voting Systems, Inc. P.O. Box 538214 Atlanta, GA 30353-8214	COURIER ADDRESS: Dominion Voting Systems, Inc. Lockbox #538214 1669 Phoenix Parkway, Suite 210 College Park, GA 30349	Subtotal	\$2,250.00
		Tax	\$0.00
		Freight	\$16.47
		Trade Discount	\$0.00
		Total	\$2,266.47

Comments: 10/1/24 FedEx 778942598927
SF0031298

INVOICE

EMPCO, Inc.

1740 W. Big Beaver Rd., Ste. 200
Troy, MI 48084

info@empco.net

+1 (248) 528-8060



Bill to

City of Dearborn Heights - HR
Attn: Cameron Eggly
6045 Fenton
Dearborn Heights, MI 48127

Invoice details

Invoice no.: 45368

Invoice date: 09/16/2024

Due date: 09/30/2024

#	Product or service	Description	Qty	Rate	Amount
1.	Fire AC	Fire Assessment Center Development - Fire Battalion Chief	1	\$5,000.00	\$5,000.00
2.	--F AC Per Day	Per day Administration Fee	1	\$2,200.00	\$2,200.00
3.	--F AC Per Candidate	Per Candidate	2	\$325.00	\$650.00
4.	--F AC Mileage	Assessor Mileage	276	\$0.67	\$184.92

Total

\$8,034.92

Make Checks payable to Empco, Inc.

101-221-817,000
Approved 10/7/24

Received
OCT 01 2024
City of Dearborn Heights
Human Resources

INVOICE



Account Name	DEARBORN HEIGHTS
Account Number	CUS-0000012
Invoice Number	CIN-0000362
Invoice Date	Jul 29, 2024
Due Date	Sep 12, 2024

Billing Inquiries: (313) 965-9775
billing@glwater.org

DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS, MI 48127
United States of America

June 2024 Services - Usage Detail by Meter on Page 2

WATER FLAT			\$211,900.00
WATER USAGE	17695.40 MCF	\$8.53 Commodity Charge	\$150,941.76
Bad Debt Recovery Credit			-\$51,300.00
TOTAL CURRENT CHARGES			\$311,541.76

PAYMENT OPTIONS

By Check
GREAT LAKES WATER AUTHORITY
ATTN: TREASURY
P.O. BOX 441370
DETROIT, MI 48244-1370
Please include remittance with check

By Wire
ABA #: 042000013
Account #: 130121405893
ATTN: GLWA TREASURY
Email remittance information to
treasury@glwater.org

By ACH
ABA #: 021052053
Account #: 88136631
Attn: GLWA TREASURY
Email remittance information to
treasury@glwater.org

592-537-928.000

Sh Di 10/10/24

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR PAYMENT IF BY CHECK

Account Name	Account Number	Due Date	Amount Due
DEARBORN HEIGHTS	CUS-0000012	Sep 12, 2024	\$311,541.76

AMOUNT REMITTED \$ 311,541.76

DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS, MI 48127
United States of America

REMIT TO: Great Lakes Water Authority
Attn: Treasury
P.O. Box 441370
Detroit, MI 48244-1370

City of Dearborn Heights

CUS-0000012

METER INFO		PREVIOUS		CURRENT		CONSUMPTION
SITE ID	DATE	READING	DATE	READING	CONSUMPTION	MCF
DH01A	06/01/24	152152	07/01/24	152161	9	0.88
DH01B	06/01/24	80092	07/01/24	80289	197	19.75
DH02A	06/01/24	111685	07/01/24	111788	103	3.64
DH03A	06/01/24	6535055	07/01/24	6700443	165388	5840.68
DH10A	06/01/24	385516	07/01/24	385654	138	13.85
DH10B	06/01/24	36548	07/01/24	36548	0	0.00
DH11A	06/01/24	37879	07/01/24	37967	88	8.86
DH11B	06/01/24	19332	07/01/24	19567	235	23.55
DH12A	06/01/24	19552020	07/01/24	19885708	333688	11784.19

TOTAL CONSUMPTION (MCF): 17695.40

Consumption may be reported per hundred cubic feet or cubic meters depending on the type of meter installed. GLWA converts billed consumption for all member partners to thousands of cubic feet (MCF) using the following conversion factors.

Unit Conversion Calculation

Cubic Meters (CM) X .035315 = Thousand(s) of Cubic Feet (MCF)

Hundred(s) of Cubic Feet (CCF) X 10 = Thousand(s) of Cubic Feet (MCF)

INVOICE



Account Name	DEARBORN HEIGHTS
Account Number	CUS-0000012
Invoice Number	CIN-0001056
Invoice Date	Sep 23, 2024
Due Date	Nov 7, 2024

Billing Inquiries: (313) 965-9775
 billing@glwater.org

DEARBORN HEIGHTS
 6045 FENTON
 DEARBORN HEIGHTS, MI 48127
 United States of America

August 2024 Services - Usage Detail by Meter on Page 2

WATER FLAT			\$217,000.00
WATER USAGE	17489.07 MCF	\$8.88 Commodity Charge	\$155,302.94
TOTAL CURRENT CHARGES			\$372,302.94

PAYMENT OPTIONS

By Check
 GREAT LAKES WATER AUTHORITY
 ATTN: TREASURY
 P.O. BOX 441370
 DETROIT, MI 48244-1370
 Please include remittance with check

By Wire
 ABA #: 042000013
 Account #: 130121405893
 ATTN: GLWA TREASURY
 Email remittance information to
 treasury@glwater.org

By ACH
 ABA #: 021052053
 Account #: 88136631
 Attn: GLWA TREASURY
 Email remittance information to
 treasury@glwater.org

592-537-928.000

Handwritten signature 10/10/24

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR PAYMENT IF BY CHECK

Account Name	Account Number	Due Date	Amount Due
DEARBORN HEIGHTS	CUS-0000012	Nov 7, 2024	\$372,302.94

AMOUNT REMITTED \$ 372,302.94

DEARBORN HEIGHTS
 6045 FENTON
 DEARBORN HEIGHTS, MI 48127
 United States of America

REMIT TO: Great Lakes Water Authority
 Attn: Treasury
 P.O. Box 441370
 Detroit, MI 48244-1370

City of Dearborn Heights

CUS-0000012

METER INFO		PREVIOUS		CURRENT		CONSUMPTION
SITE ID	DATE	READING	DATE	READING	CONSUMPTION	MCF
DH01A	08/01/24	152190	09/01/24	152261	71	7.17
DH01B	08/01/24	81015	09/01/24	81972	957	95.64
DH02A	08/01/24	111788	09/01/24	111788	0	0.00
DH03A	08/01/24	6871796	09/01/24	7065238	193442	6831.40
DH10A	08/01/24	387233	09/01/24	388858	1625	162.47
DH10B	08/01/24	36548	09/01/24	36548	0	0.00
DH11A	08/01/24	37984	09/01/24	38779	795	79.54
DH11B	08/01/24	20138	09/01/24	20827	689	68.89
DH12A	08/01/24	20210540	09/01/24	20500614	290074	10243.96

TOTAL CONSUMPTION (MCF): 17489.07

Consumption may be reported per hundred cubic feet or cubic meters depending on the type of meter installed. GLWA converts billed consumption for all member partners to thousands of cubic feet (MCF) using the following conversion factors.

Unit Conversion Calculation

Cubic Meters (CM) X .035315 = Thousand(s) of Cubic Feet (MCF)

Hundred(s) of Cubic Feet (CCF) X 10 = Thousand(s) of Cubic Feet (MCF)

INVOICE



Account Name	DEARBORN HEIGHTS
Account Number	CUS-0000012
Invoice Number	CIN-0000734
Invoice Date	Aug 23, 2024
Due Date	Oct 7, 2024

Billing Inquiries: (313) 965-9775
 billing@glwater.org

DEARBORN HEIGHTS
 6045 FENTON
 DEARBORN HEIGHTS, MI 48127
 United States of America

July 2024 Services - Usage Detail by Meter on Page 2

WATER FLAT			\$217,000.00
WATER USAGE	17814.88 MCF	\$8.88 Commodity Charge	\$158,196.13
TOTAL CURRENT CHARGES			\$375,196.13

PAYMENT OPTIONS

By Check
 GREAT LAKES WATER AUTHORITY
 ATTN: TREASURY
 P.O. BOX 441370
 DETROIT, MI 48244-1370
 Please include remittance with check

By Wire
 ABA #: 042000013
 Account #: 130121405893
 ATTN: GLWA TREASURY
 Email remittance information to
 treasury@glwater.org

By ACH
 ABA #: 021052053
 Account #: 88136631
 Attn: GLWA TREASURY
 Email remittance information to
 treasury@glwater.org

592,537.928.000 *Sh Di* 10/10/24

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR PAYMENT IF BY CHECK

Account Name	Account Number	Due Date	Amount Due
DEARBORN HEIGHTS	CUS-0000012	Oct 7, 2024	\$375,196.13
AMOUNT REMITTED			\$ <i>375,196.13</i>

DEARBORN HEIGHTS
 6045 FENTON
 DEARBORN HEIGHTS, MI 48127
 United States of America

REMIT TO: Great Lakes Water Authority
Attn: Treasury
P.O. Box 441370
Detroit, MI 48244-1370

City of Dearborn Heights

CUS-0000012

METER INFO		PREVIOUS		CURRENT		CONSUMPTION
SITE ID	DATE	READING	DATE	READING	CONSUMPTION	MCF
DH01A	07/01/24	152161	08/01/24	152190	29	2.91
DH01B	07/01/24	80289	08/01/24	81015	726	72.57
DH02A	07/01/24	111788	08/01/24	111788	0	0.00
DH03A	07/01/24	6700443	08/01/24	6871796	171353	6051.33
DH10A	07/01/24	385654	08/01/24	387233	1579	157.91
DH10B	07/01/24	36548	08/01/24	36548	0	0.00
DH11A	07/01/24	37967	08/01/24	37984	17	1.66
DH11B	07/01/24	19567	08/01/24	20138	571	57.06
DH12A	07/01/24	19885708	08/01/24	20210540	324832	11471.44

TOTAL CONSUMPTION (MCF): 17814.88

Consumption may be reported per hundred cubic feet or cubic meters depending on the type of meter installed. GLWA converts billed consumption for all member partners to thousands of cubic feet (MCF) using the following conversion factors.

Unit Conversion Calculation

Cubic Meters (CM) X .035315 = Thousand(s) of Cubic Feet (MCF)

Hundred(s) of Cubic Feet (CCF) X 10 = Thousand(s) of Cubic Feet (MCF)

7436 Oakland Detroit M. 48221

Email: Jef@JefRMaintenance.com

TO:

26840 Simone
Deerborn Heights MI
MHN DPLW John Danci

SHIP TO:

JordanC@denverheightsmi.gov

Thank You!

**Request for Taxpayer
Identification Number and Certification**

Go to www.irs.gov/FormW9 for instructions and the latest information.

Give form to the
requester. Do not
send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see Purpose of Form, below.

Print or type.
See Specific Instructions on page 3.

1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.) <i>Jeffery Royales</i>	
2 Business name/disregarded entity name, if different from above. <i>Jet R. Maintenance & Tool Service</i>	
3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only one of the following seven boxes. ☒ Individual/sole proprietor ☐ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate ☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner. ☐ Other (see instructions)	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3). Exempt payee code (if any) Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any) (Applies to accounts maintained outside the United States.)
3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions. ☐	
5 Address (number, street, and apt. or suite no.). See instructions. <i>7436 Oakland</i>	Requester's name and address (optional)
6 City, state, and ZIP code <i>Detroit MI 48221</i>	
7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number	
or	
Employer identification number	

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person <i>Jeffery Royales</i>	Date <i>09/27/2024</i>
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

09/27/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER JMG Insurance Agency 440 N Barranca Ave #9499 Covina, CA 91723	CONTACT NAME: Customer Service
	PHONE (A/C, No, Ext): 619-259-5589
	FAX (A/C, No):
	E-MAIL ADDRESS: service@jmgia.com
	INSURER(S) AFFORDING COVERAGE
	INSURER A: American Builders Ins Co
	INSURER B:
	INSURER C:
	INSURER D:
	INSURER E:
	INSURER F:
	NAIC # 11240

INSURED
Jef R Maintenance And Tree Services, LLC
7436 Oakland Avenue
Detroit, MI 48211

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY					EACH OCCURRENCE \$ 1,000,000
	COMMERCIAL GENERAL LIABILITY					DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000
	CLAIMS-MADE ☒ OCCUR					MED EXP (Any one person) \$ 5,000
						PERSONAL & ADV INJURY \$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER					GENERAL AGGREGATE \$ 1,000,000
	☒ POLICY ☐ PRO-JECT ☐ LOC					PRODUCTS - COM/POP AGG \$ 1,000,000
	AUTOMOBILE LIABILITY					COMBINED SINGLE LIMIT (Ea accident) \$
	ANY AUTO					BODILY INJURY (Per person) \$
	ALL OWNED AUTOS					BODILY INJURY (Per accident) \$
	HIRED AUTOS					PROPERTY DAMAGE (Per accident) \$
	UMBRELLA LIAB					EACH OCCURRENCE \$
	EXCESS LIAB					AGGREGATE \$
	DED RETENTION \$					\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY					WC STATU-TORY LIMITS OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)					E L EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below					E L DISEASE - EA EMPLOYEE \$
						E L DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

CANCELLATION

Timber warriors CH
301 feise commercial drive
Lake st Louise, MO 63367

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Jon Grijalva

ACORD 25 (2010/05)

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The ACORD name and logo are registered marks of ACORD

Jef R Maintenance & Tree Services, LLC

Tel (313) 478-5528 • Fax (201) 644-3792

Email: Jef@JefRMaintenance.com

7436 Oakland Ave
Detroit, mi 48211

INVOICE # 2

TO:

8640 Kin more

Dearborn Heights m.

DPW John Danci'

Indanci@dearborn

SHIP TO:

[illegible]

Thank You!

John Di 10/10/24

CUSTOMER #: 38969

272760



INVOICE

CITY OF DEARBORN HEIGHTS
25635 MICH AVE
DEARBORN HEIGHTS, MI 48127
HOME:313-791-3440 CONT:313-791-3440
BUS: CELL:313-300-6743

DUPLICATE 1
PAGE 2

33200 MICHIGAN AVENUE
WAYNE, MICHIGAN 48184-1876
PHONE: (734) 722-9100
STATE REGISTRATION NO. F 103409

SERVICE ADVISOR: 48162 DYLAN LEE

COLOR	YEAR	MAKE/MODEL	VIN	LICENSE	MILEAGE IN/ OUT	TAG
	14	CHEVROLET TAHOE	1GNLC2E05ER159180		91468/91468	T6513

DEL DATE	PROD. DATE	WARR. EXP	PROMISED	PO NO.	RATE	PAYMENT	INV. DATE
31AUG15 DD			17:00 05SEP24		0.00	CASH	30SEP24

R.O. OPENED READY OPTIONS: DLR:44290

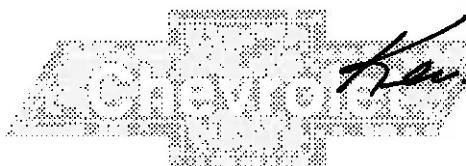
09:25 05SEP24 10:48 30SEP24

LINE	OPCODE	TECH	TYPE	HOURS	LIST	NET	TOTAL
------	--------	------	------	-------	------	-----	-------

THANK YOU FOR YOUR BUSINESS!! SERVICE HOURS
ARE MONDAY-FRIDAY FROM 8:00 AM TO 6:00 PM
CERTIFICATIONS-ALL REPAIRS AND PARTS LISTED
WERE FURNISHED IN COMPLIANCE WITH MICHIGAN
AUTO REPAIRS ACT (P.A. 300)

OK TO PAY

101-300-932.00



Ken Swope 10/18/24
Swope

All parts and repairs listed were furnished in compliance with the Michigan Auto Repair Act P.A. 300.



ALL LABOR GUARANTEED FOR TWELVE MONTHS OR TWELVE THOUSAND MILES.
ALL NEW, OEM PARTS GUARANTEED FOR TWELVE MONTHS OR TWELVE THOUSAND MILES.

STATEMENT OF DISCLAIMER		DESCRIPTION	TOTALS
The factory warranty constitutes all of the warranties with respect to the sale of this item/items. The Seller hereby expressly disclaims all warranties, either express or implied, including any implied warranty of merchantability or fitness for a particular purpose. Seller neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of this item/items.		LABOR AMOUNT	1200.00
		PARTS AMOUNT	3684.56
		GAS, OIL, LUBE	0.00
		SUBLET AMOUNT	0.00
		MISC. CHARGES	0.00
		TOTAL CHARGES	4884.56
		LESS INSURANCE	0.00
		SALES TAX	0.00
EMAIL ADDRESS		PLEASE PAY THIS AMOUNT	4884.56
CUSTOMER SIGNATURE			

CUSTOMER COPY

CUSTOMER #: 38969

272760



INVOICE

CITY OF DEARBORN HEIGHTS
25635 MICH AVE
DEARBORN HEIGHTS, MI 48127
HOME:313-791-3440 CONT:313-791-3440
BUS: CELL:313-300-6743

DUPLICATE 1
PAGE 1

33200 MICHIGAN AVENUE
WAYNE, MICHIGAN 48184-1876
PHONE: (734) 722-9100
STATE REGISTRATION NO. F 103409

SERVICE ADVISOR: 48162 DYLAN LEE

COLOR	YEAR	MAKE/MODEL	VIN	LICENSE	MILEAGE IN/ OUT	TAG	
	14	CHEVROLET TAHOE	1GNLC2E05ER159180		91468/91468	T6513	
DEL DATE	PROD. DATE	WARR. EXP.	PROMISED	PO NO.	RATE	PAYMENT	INV. DATE
31AUG15 DD			17:00 05SEP24		0.00	CASH	30SEP24
R.O. OPENED		READY	OPTIONS: DLR:44290				

09:25 05SEP24 10:48 30SEP24

LINE	OPCODE	TECH	TYPE	HOURS	LIST	NET	TOTAL
------	--------	------	------	-------	------	-----	-------

A C/S THAT WHEN DRIVING THE VEHICLE VERY HARD THE VEH GOT STUCK IN
FIRST GEAR AND WOULD NOT SHIFT THE VEH WAS PARKED AND THEN IT
DROVE FINE THIS HAS HAPPENED A COUPLE TIMES AFTER A PURSUIT
GETTING THE VEHICLE VERY HOT CHECK AND ADVISE

100 REPLAC CONVERTER AND O2 SENSORS

490 KLATT,DAVID LIC#: M224409

CPC 4.50 720.00 720.00

2 12583804 (S) SENSOR 105.82 95.24 190.48

2 12609457 (S) SENSOR 103.32 92.99 185.98

1 19418941 (S) CONVERTER 3192.92 2873.63 2873.63

CORE CHARGE C 400.00 400.00

1 20779889 (S) CLAMP 38.30 34.47 34.47

300 RELEARN FUEL COMPOSITION

490 KLATT,DAVID LIC#: M224409

CPC 1.00 160.00 160.00

300 REPROGRAM FUEL TRIM

490 KLATT,DAVID LIC#: M224409

CPC 1.00 160.00 160.00

300 REPROGRAM ENGINE CONTROL MODULE

490 KLATT,DAVID LIC#: M224409

CPC 1.00 160.00 160.00

B C/S THE CHECK ENGINE LIGHT COME ON AND THEY REPLACED A MASS AIR FLOW
SENSOR FOR THE CODES THAT WERE IN THE SYSTEM P0171 P0174 P069E
THEY CHECKED THE FUEL PRESSURE AND TRIM IT WAS FINE CHECK AND
ADVISE

105 C/S THE CHECK ENGINE LIGHT IS ON, CHECK AND

ADVISE

490 KLATT,DAVID LIC#: M224409

CPC 0.00 0.00 0.00

CUSTOMER

All parts and repairs listed were furnished in
compliance with the Michigan Auto Repair Act
P.A. 300.



ALL LABOR GUARANTEED FOR TWELVE
MONTHS OR TWELVE THOUSAND MILES.
ALL NEW, OEM PARTS GUARANTEED FOR
TWELVE MONTHS OR TWELVE THOUSAND MILES.

STATEMENT OF DISCLAIMER	DESCRIPTION	TOTALS
The factory warranty constitutes all of the warranties with respect to the sale of this item/items. The Seller hereby expressly disclaims all warranties, either express or implied, including any implied warranty of merchantability or fitness for a particular purpose. Seller neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of this item/items.	LABOR AMOUNT	
	PARTS AMOUNT	
	GAS, OIL, LUBE	
	SUBLET AMOUNT	
	MISC. CHARGES	
	TOTAL CHARGES	
	LESS INSURANCE	
EMAIL ADDRESS	SALES TAX	
CUSTOMER SIGNATURE	PLEASE PAY THIS AMOUNT	

CUSTOMER COPY

Page 46 of 767



Service Dept.
19500 Dix-Toledo Rd.
Brownstown Twp., Michigan 48183

REMIT TO: Michigan CAT
Dept.# 77576
P.O. BOX 77000
Detroit, Michigan 48277-0576

To view and pay invoices online, go to:
<https://secure.billtrust.com/Macallister/ig/signin>

Account Number: 11354
CUSTOMER INVOICE

Service Dept.
19500 Dix-Toledo Rd.
Brownstown Twp., Michigan 48183
Phone: 734 479 5800 Fax 734 479 1299

CITY OF DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS MI 48127

SHIP TO
CITY OF DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS MI 48127

Water Department

INVOICE NUMBER SD16567185		INVOICE DATE 09/30/2024		ORDER NUMBER MS-WO-16545720		DOCUMENT DATE 09/17/2024		CUSTOMER PO NUMBER 25-094			PAGE 1 OF 2	
MAKE CATERPILLAR		MODEL 420F2 APRQ		EQUIPMENT NUMBER T-3		SERIAL NUMBER HWC03846		METER READING 2492		SHIP VIA		TAX MI
QUANTITY		ITEM		DESCRIPTION				UNIT PRICE		EXTENSION		

SEG. 1 / REPLACE / DIESEL EXH (DEF) MODULE / SENSOR

COMPLAINT: CODES/DERATE CHECK ENGINE LIGHT/DERATE

CAUSE: FAILED DEF SENSOR

CORRECTION: CHECKED FLUIDS AND STARTED MACHINE. RAN FUNCTIONALITY TEST AND PASSED. NO ACTIVE OR LOGGED CODES POINTING TOWARDS AN ISSUE. RAN FOR A BIT AND SHUT OFF. FOLLOWED TROUBLESHOOTING AND DIAGNOSED BAD DEF SENSOR. QUOTED AND REPLACED DEF SENSOR. RAN FUNCTIONALITY TEST AND PASSED.

Service tech(s): Kyle S Hintz

PARTS				
1	5948693	SENSOR KT	765.44	765.44
LABOR				
5.00	Regular hours	Shop	158.00	790.00
SEGMENT 1			TOTAL PARTS	765.44
			TOTAL LABOR	790.00
			SEGMENT TOTAL	1,555.44

SUBTOTAL BEFORE TAXES

1,555.44

Environmental charge

35.55

Michigan Non-taxable Sales to Government and Non-profit Groups

0.00

See Page 2

Total \$1590.99



Service Dept.
19500 Dix-Toledo Rd.
Brownstown Twp., Michigan 48183

REMIT TO: **Michigan CAT**
Dept.# 77576
P.O. BOX 77000
Detroit, Michigan 48277-0576
To view and pay invoices online, go to:
<https://secure.billtrust.com/Macallister/ig/signin>

Account Number: 11354
CUSTOMER INVOICE

Service Dept.
19500 Dix-Toledo Rd.
Brownstown Twp., Michigan 48183
Phone: 734 479 5800 Fax 734 479 1299

CITY OF DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS MI 48127

SHIP TO
CITY OF DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS MI 48127

Water Department + T-3

INVOICE NUMBER	INVOICE DATE	ORDER NUMBER	DOCUMENT DATE	CUSTOMER PO NUMBER	PAGE
SD16567185	09/30/2024	MS-WO-16545720	09/17/2024	25-094	2 OF 2
QUANTITY	ITEM	DESCRIPTION		UNIT PRICE	EXTENSION

Account # 592-537-930,000

The terms and conditions found at www.macallister.com/serviceterms ("Service Terms") are incorporated herein by this reference and apply to the provision of Services by MacAllister (as defined in the Service Terms). Please read carefully. This agreement includes an indemnification clause, a jury waiver, warranty disclaimers, and limitations of liability. By approving the Work Order orally, in writing, or otherwise, accepting or using the Equipment after the Services are performed, or making payment(s) to MacAllister for or related to the Services, Customer agrees to be bound by the Service Terms, even if this form has not been fully executed.

PAYMENT TERMS

Pay in full 30 days after invoice date. A monthly Finance Charge of 1.00% (12% APR) will be added on all past due amounts.

For payment questions about this invoice please contact
Denise Wethington
Fax 1-866-473-4921
Voice 248-349-4800 Ext. 1486
Email denise.wethington@michigancat.com

CREDIT AMOUNT	0.00
DO NOT PAY	
PAY THIS AMOUNT	1,590.99

ph Di 10/2/24

Oakland Community College
2900 Featherstone Road
Auburn Hills MI 48326
FED TAX ID 38-1751522

Sponsor: 0557860
Sponsorship: PADHPD0924
AR Type: PA
Start & End: 09/01/24 to 09/30/24
Contact: cdsuggs@dearbornheightsmi.gov

Page: 1
Contract: PASEP24
Invoice No: 12510
Payment Due: 111524
Amount Due: 1,600.00

Bill to: Dearborn Heights Police Department
25637 Michigan Avenue
Dearborn Heights, MI 48125

Invoice Date: 10/02/2024

Detail by Student

Student: 1350408 [REDACTED] Student Total: 800.00

Section	Section Title	Credits	Term	Start	End	Status
PBSV-5356-K8067	Evidence Technician		2025/AY	09/09/24	09/20/24	New

Charge Description	Net Charges
1APTT Advance Police Train Tuition	800.00
Student Total	800.00

Student: 1395793 [REDACTED] Student Total: 800.00

Section	Section Title	Credits	Term	Start	End	Status
PBSV-5356-K8067	Evidence Technician		2025/AY	09/09/24	09/20/24	New

Charge Description	Net Charges
1APTT Advance Police Train Tuition	800.00
Student Total	800.00

Payment Due 111524

1,600.00

OK TO PAY

#101-300-962 010

State Training

PLEASE NOTE NEW REMIT ADDRESS

Please send check with invoice to:
Oakland Community College
Attn: Crest Accounting
2900 Featherstone Road
Auburn Hills, MI 48326-2845

Keri Swope - Swope
10/9/24

Billing Questions Contact: Michelle Jerome mmjerome@oaklandcc.edu (248) 232-4261



Oakland County
Fire Records Management
1200 N Telegraph
Pontiac, MI 48341

INVOICE

Customer ID: CU000447
Invoice Number: CI046181
Invoice Date: 09/30/2024
Due Date: 11/29/2024
Amount Due: USD 1,862.25

Bill To:

CITY OF DEARBORN HEIGHTS
FIRE DEPT, ACCOUNTS PAYABLE
1999 N BEECH DALY
DEARBORN HEIGHTS, MI 48127

For billing questions, please call: Calvin Moy at 248-858-1037
Email: moyc@oakgov.com

Description - Goods and Services	Contract	Quantity	Unit Price	Amount
FRMS Department Fee (Non-OC), JUL-SEP 2024		1	1,448.50	1,448.50
FRMS Fire Hall Fee (Non-OC), JUL-SEP 2024		1	413.75	413.75
Goods and Services Total				1,862.25
Sub Total:				1,862.25
Tax:				0.00
Amount Due:				1,862.25

PLEASE INCLUDE YOUR INVOICE NUMBER WHEN SUBMITTING PAYMENT.

OCT 07 2024

O.K. to pay
(335-818)
DJ

Please Remit Payments to:

Oakland County
Treasurers-Cash Acctg Bldg 12 E
1200 N Telegraph
Pontiac, MI 48341
United States of America

CUSTOMER #: 7083

971900

Pat Milliken Ford, Inc.

CITY OF DEARBORN HEIGHTS
PAUL VANDERFLOW
25637 MICHIGAN AVE
DEARBORN HTS, MI 48125-1037
HOME: 313-719-1972 CONT: 313-719-1972
BUS: CELL: 313-878-5151

INVOICE

www.patmillikenford.com
9600 Telegraph * (Just South of I-96, The Jeffries Freeway)
Redford, MI 48239
Parts & Service 313-255-3130
Sales 313-255-3100 · Fax 313-255-1027
REG. NO. F-102265 P&A CODE: 02741

PAGE 3

SERVICE ADVISOR: 6079 JULIET GUERTIN

COLOR	YEAR	MAKE/MODEL		VIN	LICENSE	MILEAGE IN/ OUT		TAG
BLUE-METAL	18	FORD EXPLORER		1FM5K8AT8JGA27023		91569/91569		T6920
DEL DATE	PROD. DATE	WARR. EXP.	EST. COMPLETION TIME	PO NO.	RATE	PAYMENT	INV. DATE	
06DEC17	DD16NOV17		17:42 17SEP24	0	155.00	CASH	23SEP24	
R.O. OPENED		READY		OPTIONS: W-COMP:G DLR:02741 ENG:3.5_Liter_GTDI				
10:26 16SEP24		07:34 23SEP24						
LINE	OPCODE	TECH	TYPE	HOURS	LIST	NET	TOTAL	

Parts replaced on customer pay repairs are left in the vehicle or retained for your inspection for 48 hours in accordance with Michigan law.

If for any reason you are not "Completely Satisfied" please contact me at 313-255-3100
Wes Ellis, Service Manager

OK TO PAY

101.300-932.000

Ken Syne - Swope
10/8/24

I hereby authorize the below repair work to be done along with necessary materials. Dealer and dealer employees may operate vehicle for purposes of testing, inspection or delivery at my risk. An express garage keeper's lien is acknowledged on vehicle to secure the amount of repairs thereto. Dealer will not be held responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft, accident or any other cause beyond your control. If an inspection is necessary to determine the extent of damage and recommended repairs are refused, or only partial repairs are made, dealer may not be able to restore the vehicle to its original working condition.					DESCRIPTION		TOTALS
I HEREBY ACKNOWLEDGE AND AGREE TO ALL STATEMENTS CONTAINED HEREIN.					LABOR AMOUNT		1246.20
CUSTOMER ACKNOWLEDGEMENT (ALL TERMS STRICTLY CASH)					PARTS AMOUNT		2387.26
SIGNATURE X					GAS, OIL, LUBE		0.00
CERTIFICATION ALL REPAIRS AND PARTS LISTED WERE FURNISHED IN COMPLIANCE WITH MICHIGAN AUTO REPAIR ACT (P.A. 300)					SUBLET AMOUNT		0.00
STORAGE WILL BE CHARGED 48 HOURS AFTER REPAIRS ARE COMPLETED.					MISC. CHARGES		20.00
ALL PARTS ARE NEW UNLESS OTHERWISE INDICATED.					SUBTOTAL		3653.46
ON BEHALF OF SERVICE/DEALER, I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREON IS ACCURATE UNLESS OTHERWISE SHOWN. SERVICES DESCRIBED WERE PERFORMED AT NO CHARGE TO OWNER. THERE WAS NO INDICATION FROM THE APPEARANCE OF THE VEHICLE OR OTHERWISE THAT ANY PART REPAIRED OR REPLACED UNDER THIS CLAIM HAD BEEN CONNECTED IN ANY WAY WITH ANY ACCIDENT, NEGLIGENCE OR MISUSE. RECORDS SUPPORTING THIS CLAIM ARE AVAILABLE FOR (1) YEAR FROM THE DATE OF PAYMENT NOTIFICATION AT THE SERVING DEALER FOR INSPECTION BY REPRESENTATIVES OF FORD.					LESS INSURANCE		0.00
REPAIRS PROPERLY COMPLETED AND CHECKED BY					SALES TAX		0.00
(SIGNED) DEALER, GENERAL MANAGER, OR AUTHORIZED PERSON (DATE)					PLEASE PAY THIS AMOUNT		3653.46

*SUPPLIES - 10% of labor with a max. of \$20.00 is included for supplies used on your vehicle. Applicable supply items are: nuts, bolts, washers, tape, pins, solvent, rags, cleaners, towels, battery cleaner, wire, window sealer, hazardous waste disposal, etc.

CUSTOMER COPY

CUSTOMER #: 7083

971900

Pat Milliken Ford, Inc.

CITY OF DEARBORN HEIGHTS
PAUL VANDERFLOW
25637 MICHIGAN AVE
DEARBORN HTS, MI 48125-1037
HOME:313-719-1972 CONT:313-719-1972
BUS: CELL:313-878-5151

INVOICE

www.patmillikenford.com
9600 Telegraph * (Just South of I-96, The Jeffries Freeway)
Redford, MI 48239
Parts & Service 313-255-3130
Sales 313-255-3100 · Fax 313-255-1027
REG. NO. F-102265 P&A CODE: 02741

PAGE 1

SERVICE ADVISOR: 6079 JULIET GUERTIN

COLOR	YEAR	MAKE/MODEL		VIN		LICENSE	MILEAGE IN/ OUT		TAG
BLUE-METAL	18	FORD EXPLORER		1FM5K8AT8JGA27023			91569/91569		T6920
DEL DATE		PROD. DATE	WARR. EXP.	EST. COMPLETION TIME		PO NO.	RATE	PAYMENT	INV. DATE
06DEC17 DD		16NOV17		17:42 17SEP24		0	155.00	CASH	23SEP24
R.O. OPENED		READY		OPTIONS: W-COMP:G DLR:02741 ENG:3.5_Liter_GTDI					
10:26 16SEP24		07:34 23SEP24							
LINE OPCODE TECH TYPE HOURS							LIST	NET	TOTAL

A CUST STATES THAT THE ENGINE IS MAKING NOISE WHEN RUNNING CK AND ADVISE

D-50 TEST FOUND BOTH FRT WHEEL BEARING BAD AND REPLACED

8922 C

8934 RASCHKE JR, JAMES LIC#: M179333

C

2	BB5Z*1104*A HUB ASY - WHEEL	318.18	675.80	675.80
1	*W712435*S439 NUT	16.63	297.50	595.00
1	FB5Z*3B437*B SHAFT - FRONT AXLE	258.18	16.63	16.63
1	*W712435*S439 NUT	16.63	241.40	241.40
			16.63	16.63

PARTS: 869.66 LABOR: 675.80 OTHER: 0.00 TOTAL LINE A: 1545.46

ROAD TEST. DIAG BOTH FRONT WHEEL BEARINGS BAD. REPLACED BOTH FRONT WHEEL BEARINGS AND REPLACED LEFT FRONT AXLE SHAFT. SEIZED IN HUB. TECH 8934 4.0 HRS

B CUST STATES THAT THE CHECK ENGINE LIGHT IS ON CKA NADVISE

E-29 TEST FOUND CODE P0420 AND REPLACED RIGHT SIDE CAT.

8922 C

8934 RASCHKE JR, JAMES LIC#: M179333

C

1	FB5Z*5E212*E CONVERTER ASY	1052.86	492.90	492.90
1	BA5Z*9G444*A SENSOR - EXHAUST GAS - OXYGEN	91.80	1052.86	1052.86
1	8F9Z*9F472*H SENSOR - HEGO	149.11	91.80	91.80
2	AA5Z*6L612*A GASKET	33.58	149.11	149.11
1	7T4Z*9450*AA GASKET	20.23	33.58	67.16
2	*W712806*S900 BOLT	12.50	20.23	20.23
3	*W714265*S441 NUT	4.48	12.50	25.00
			4.48	13.44

PARTS: 1419.60 LABOR: 492.90 OTHER: 0.00 TOTAL LINE B: 1912.50

I hereby authorize the below repair work to be done along with necessary materials. Dealer and dealer employees may operate vehicle for purposes of testing, inspection or delivery at my risk. An express garage keeper's lien is acknowledged on vehicle to secure the amount of repairs thereto. Dealer will not be held responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft, accident or any other cause beyond your control. If an inspection is necessary to determine the extent of damage and recommended repairs are refused, or only partial repairs are made, dealer may not be able to restore the vehicle to its original working condition.		DESCRIPTION		TOTALS
I HEREBY ACKNOWLEDGE AND AGREE TO ALL STATEMENTS CONTAINED HEREIN.		LABOR AMOUNT		
CUSTOMER ACKNOWLEDGEMENT (ALL TERMS STRICTLY CASH)		PARTS AMOUNT		
SIGNATURE X		GAS, OIL, LUBE		
CERTIFICATION ALL REPAIRS AND PARTS LISTED WERE FURNISHED IN COMPLIANCE WITH MICHIGAN AUTO REPAIR ACT (P.A. 300)		SUBLET AMOUNT		
STORAGE WILL BE CHARGED 48 HOURS AFTER REPAIRS ARE COMPLETED.		MISC. CHARGES		
ALL PARTS ARE NEW UNLESS OTHERWISE INDICATED.		SUBTOTAL		
ON BEHALF OF SERVING DEALER, I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREON IS ACCURATE UNLESS OTHERWISE SHOWN. SERVICES DESCRIBED WERE PERFORMED AT NO CHARGE TO OWNER. THERE WAS NO INDICATION FROM THE APPEARANCE OF THE VEHICLE OR OTHERWISE THAT ANY PART REPAIRED OR REPLACED UNDER THIS CLAIM HAD BEEN CORRECTED IN ANY WAY WITH ANY ACCIDENT, NEGLIGENCE OR MISUSE RECORDS SUPPORTING THIS CLAIM ARE AVAILABLE FOR (1) YEAR FROM THE DATE OF PAYMENT NOTIFICATION AT THE SERVING DEALER FOR INSPECTION BY REPRESENTATIVES OF FORD.		LESS INSURANCE		
X (SIGNED) DEALER, GENERAL MANAGER, OR AUTHORIZED PERSON (S) (S)		SALES TAX		
REPAIRS PROPERLY COMPLETED AND CHECKED BY		PLEASE PAY THIS AMOUNT		

*SUPPLIES - 10% of labor with a max. of \$20.00 is included for supplies used on your vehicle. Applicable supply items are: nuts, bolts, washers, tape, pins, solvent, rags, cleaners, towels, battery cleaner, wire, window sealer, hazardous waste disposal, etc.

CUSTOMER COPY

CUSTOMER #: 7083

971900

Pat Milliken Ford, Inc.

CITY OF DEARBORN HEIGHTS
PAUL VANDERFLOW
25637 MICHIGAN AVE
DEARBORN HTS, MI 48125-1037
HOME:313-719-1972 CONT:313-719-1972
BUS: CELL:313-878-5151

INVOICE

www.patmillikenford.com
9600 Telegraph * (Just South of I-96, The Jeffries Freeway)
Redford, MI 48239
Parts & Service 313-255-3130
Sales 313-255-3100 - Fax 313-255-1027
REG. NO. F-102265 P&A CODE: 02741

PAGE 2

SERVICE ADVISOR: 6079 JULIET GUERTIN

COLOR	YEAR	MAKE/MODEL		VIN	LICENSE	MILEAGE IN/ OUT		TAG
BLUE-METAL	18	FORD EXPLORER		1FM5K8AT8JGA27023		91569/91569		T6920
DEL DATE	PROD. DATE	WARR. EXP.	EST. COMPLETION TIME	PO NO.	RATE	PAYMENT	INV. DATE	
06DEC17	DD16NOV17		17:42 17SEP24	0	155.00	CASH	23SEP24	
R.O. OPENED		READY		OPTIONS: W-COMP:G DLR:02741 ENG:3.5_Liter_GTDI				
10:26 16SEP24		07:34 23SEP24						
LINE	OPCODE	TECH	TYPE	HOURS	LIST	NET	TOTAL	

91569

ROAD TEST. PERFORMED KOEO, KOER. CODE P0420 FOR RIGHT SIDE CAT
EFFICIENCY. REPLACED RIGHT CAT AND GASKETS. CLEARED CODE AND ROAD TEST.
PERFORMED FINAL QUICK TEST.

TECH 8934

3.0 HRS

C CUST REQUESTS NEW FOB FOR KEY
CUT PREGRAMMED NEW KEY FOB

8922 C

1 GB5Z*15K601*A REMOTE CONTROL SYSTEM

PARTS: 98.00 LABOR: 77.50 OTHER: 0.00 TOTAL LINE C: 175.50

D EXTERIOR A-PILLAR APPLIQUE MOLDING INSPECTION****LATER DATE DUE TO
NO PARTS AVAILABLE.

AVO IT WAS NECESSARY TO SPECIAL ORDER PARTS TO
COMPLETE THIS REPAIR. WE WILL NOTIFY YOU
WHEN THESE PARTS HAVE ARRIVED, SO THAT WE
MAY ARRANGE TO COMPLETE THE REPAIR.

9999 C

PARTS: 0.00 LABOR: 0.00 OTHER: 0.00 TOTAL LINE D: 0.00

ESTIMATE: 310.00 16SEP24 10:26 SA: 6079

CONTACT:

CUSTOMER PAY SHOP CHARGE FOR REPAIR ORDER

20.00

I hereby authorize the below repair work to be done along with necessary materials. Dealer and dealer employees may operate vehicle for purposes of testing, inspection or delivery at my risk. An express garage keeper's lien is acknowledged on vehicle to secure the amount of repairs thereto. Dealer will not be held responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft, accident or any other cause beyond your control. If an inspection is necessary to determine the extent of damage and recommended repairs are refused, or only partial repairs are made, dealer may not be able to restore the vehicle to its original working condition.					PROGRAM CODE		AUTHORIZATION NO.		SALES TAX NUMBER		DESCRIPTION	TOTALS
I HEREBY ACKNOWLEDGE AND AGREE TO ALL STATEMENTS CONTAINED HEREIN. CUSTOMER ACKNOWLEDGEMENT (ALL TERMS STRICTLY CASH) SIGNATURE X CERTIFICATION ALL REPAIRS AND PARTS LISTED WERE FURNISHED IN COMPLIANCE WITH MICHIGAN AUTO REPAIR ACT (C.A. 300) STORAGE WILL BE CHARGED 48 HOURS AFTER REPAIRS ARE COMPLETED. ALL PARTS ARE NEW UNLESS OTHERWISE INDICATED.					DEALER PART	CUSTOMER REC.	ORIGINAL EST. (FORD CLERK)	AUTHORIZED ADDL REPAIRS	ADDL REPAIRS (CUST)	LABOR AMOUNT		
					CUSTOMER PAID LABOR CHARGES WARRANTED FOR 24 MOS., UNLESS COVERED BY ANOTHER APPLICABLE EXTENDED WARRANTY					GAS, OIL, LUBE		
										SUBLET AMOUNT		
										MISC. CHARGES		
										SUBTOTAL		
ON BEHALF OF SERVICE/DEALER I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREON IS ACCURATE UNLESS OTHERWISE SHOWN. SERVICES DESCRIBED WERE PERFORMED AT NO CHARGE TO OWNER. THERE WAS NO INDICATION FROM THE APPEARANCE OF THE VEHICLE OR OTHERWISE THAT ANY PART REPAIRED OR REPLACED UNDER THIS CLAIM HAD BEEN CORRECTED IN ANY WAY WITH ANY ACCIDENT, NEGLIGENCE OR MISUSE RECORDS SUPPORTING THIS CLAIM ARE AVAILABLE FOR (1) YEAR FROM THE DATE OF PAYMENT NOTIFICATION AT THE SERVING DEALER FOR INSPECTION BY REPRESENTATIVES OF FORD.					X		(SIGNED) DEALER, GENERAL MANAGER, OR AUTHORIZED PERSON (DATE)		LESS INSURANCE			
					REPAIRS PROPERLY COMPLETED AND CHECKED BY				SALES TAX			
									PLEASE PAY THIS AMOUNT			

*SUPPLIES - 10% of labor with a max. of \$20.00 is included for supplies used on your vehicle. Applicable supply items are: nuts, bolts, washers, tape, pins, solvent, rags, cleaners, towels, battery cleaner, wire, window sealer, hazardous waste disposal, etc.

CUSTOMER COPY



Invoice #: **SI-150090**

(REMIT PAYMENT FROM THIS DOCUMENT)

REMITTANCE ADDRESS

PHOENIX Safety Outfitters
P.O. Box 20445
Upper Arlington, OH 43220

Physical Address:

PHOENIX Safety Outfitters
110 W Leffel Lane
Springfield, Ohio 45506
(937) 324-2537

EIN:

41-2241348

Ship Date: **04 Oct 2024**
Invoice Date: **07 Oct 2024**
Payment Due Date: **22 Oct 2024**
Shipping Method: **Best Way**
Account Rep: **Jeff Shimel**
Accounting Questions:
cgrogan@phoenixoutfitters.com
Accounting Phone: **614-203-0247**
Bin Reference #:
Sales Order #: **252583**
Sales Tax Registrations:
Ohio (91-050790)
Indiana (0158424336)
Michigan (41-2241348)

Bill to:

ATTN: ACCOUNTS PAYABLE
DEARBORN HEIGHTS FIRE DEPARTMENT
1999 NORTH BEECH DALY
DEARBORN HEIGHTS MI 48127
UNITED STATES
Customer Phone: Kim 313-791-3652
Customer Email: kmaroncelli@dearbornheightsmi.gov

Ship to:

ATTN: ACCOUNTS PAYABLE
DEARBORN HEIGHTS FIRE DEPARTMENT
1999 NORTH BEECH DALY
DEARBORN HEIGHTS MI 48127
UNITED STATES
Customer Phone: Kim 313-791-3652
Customer Email: kmaroncelli@dearbornheightsmi.gov

Item ID	Item name	Qty	Item \$	Extended \$
CUSTPO	Customer Purchase Order Number: Verbal Gary Spisz 9-26-2024	1	\$0.00	\$0.00
HAI-507502-11.0M	Mens Fire Eagle Air, Leather Structural Fire Boot, HAIX Derek Herrmann Verified: [0124] Valid Thru: [123124] Color: BLK SHOE MWX: 11.0M	1	\$440.00	\$440.00
HAI-507502-10.0M	Mens Fire Eagle Air, Leather Structural Fire Boot, HAIX Mike Gallmeyer Verified: [0124] Valid Thru: [123124] Color: BLK SHOE MWX: 10.0M	1	\$440.00	\$440.00
HAI-507502-10.5M	Mens Fire Eagle Air, Leather Structural Fire Boot, HAIX Jammall Faraj Mike Metz Verified: [0124] Valid Thru: [123124] Color: BLK SHOE MWX: 10.5M	2	\$440.00	\$880.00
HAI-507502-12.0W	Mens Fire Eagle Air, Leather Structural Fire Boot, HAIX Joe Lavictoire Verified: [0124] Valid Thru: [123124] Color: BLK SHOE MWX: 12.0W	1	\$440.00	\$440.00
HAI-507502-11.5W	Mens Fire Eagle Air, Leather Structural Fire Boot, HAIX Brian Lobkovich Verified: [0124] Valid Thru: [123124] Color: BLK SHOE MWX: 11.5W	1	\$440.00	\$440.00
FRT-TBD-DROP	Freight FOB Mfg. to include Shipping, Handling TBDATOS // Reference Date Shipped in Header:	1	\$45.00	\$45.00
eMail Invoice	NOTE: This invoice is being sent via e-mail and is the ONLY copy that will be sent. Upon your approval and confirmation of rece Verified: [0621]	1	\$0.00	\$0.00

Subtotal \$2685.00

Not rated @ 0% \$0.00

MI - Tax Exempt 2017 @ 0% \$0.00

OCT 08 2024

Total \$2685.00

Paid to date \$0.00

OK - to pay
(335-713)



Plante & Moran, PLLC
3000 Town Center
Suite 100
Southfield, MI 48075
Tel: +1 (248) 352-2500

INVOICE

City of Dearborn Heights
6045 Fenton
Dearborn Heights, MI 48127
United States of America

Date: 09/26/2024
Client No: 17784
Invoice No: 10314086
Page: 1

For Professional Services Rendered

For professional services rendered August 26 through September 10, 2024 as approved by City Council on October 25, 2022.

13,419.00

Work performed includes bank reconciliations, budget discussions, capital assets, DIVDAT receivables, BS&A, audit prep, on site assistance, and other communication

Staff: 71 hours

Balance Due

\$13,419.00 USD

101-223-817.000
10/8/2024

Remittance Information:

Check:

Plante & Moran PLLC
16060 Collections Center
Drive
Chicago, IL 60693

Bank
Routing/ABA#
Bank Address

Account Number
Account Name

Wire Transfer:

Bank of America
026009593
222 Broadway
New York, NY 10038

9890996003
Plante & Moran, PLLC

ACH:

Bank of America
071000039
100 North Tryon Street
Charlotte, NC 28202

9890996003
Plante & Moran, PLLC



Client Payment Portal: <https://www.plantemoran.com/client-payment-portal>

Date	Staff	Memo	Hours
8/26/2024	[REDACTED]	Review single audit, respond to Jay	0.50
8/26/2024	[REDACTED]	audit prep discussions, federal unemployment discussions	2.50
8/27/2024	[REDACTED]	Travel to/from DH	1.00
8/27/2024	[REDACTED]	Discussions related to budgeting, accounting discussions with comptroller, deputy, police chief, chief of staff	6.00
8/28/2024	[REDACTED]	bank recs	1.00
8/28/2024	[REDACTED]	audit prep	1.50
8/28/2024	[REDACTED]	Discussions with Comptroller and TIFA related to invoice	1.00
8/29/2024	[REDACTED]	pc with Michelle	0.25
8/29/2024	[REDACTED]	emails with client and pmgap team to set up meeting for bank recs and plan for going forward	0.25
8/29/2024	[REDACTED]	bank recs - train City staff	3.00
8/29/2024	[REDACTED]	audit prep	1.00
8/29/2024	[REDACTED]	audit prep, discussions with comptroller, deputy, other city staff, review of journal entries	6.50
8/30/2024	[REDACTED]	update call with Michelle on Dearborn Heights, client emails	0.50
8/30/2024	[REDACTED]	bank recs - train City staff	2.00
8/30/2024	[REDACTED]	Budget questions	1.00
9/3/2024	[REDACTED]	download August bank statements for chase and comerica, email statements to Janice and Shannon	0.25
9/4/2024	[REDACTED]	Record DivDat receipts for 7 days for Water & Taxes Created new DivDat spreadsheets for September for both Water & Taxes	1.00
9/4/2024	[REDACTED]	Audit prep setup	1.50
9/4/2024	[REDACTED]	Purchasing questions, treasury questions	0.75
9/5/2024	[REDACTED]	-call w/ Sarah re: audit prep process (.25) -audit prep - intergovernmental (2)	2.25
9/5/2024	[REDACTED]	Bank recs	1.00
9/5/2024	[REDACTED]	bank recs	4.00
9/5/2024	[REDACTED]	Bank recs	1.00
9/5/2024	[REDACTED]	2 - Discuss audit strategy and setup for audit prep - internal 3 - LTD and intergovernmental setup with Kourtney	5.00
9/5/2024	[REDACTED]	Audit prep review, discussions with comptroller's office staff on bank reconciliation status and process, other review	7.00
9/6/2024	[REDACTED]	-call w/ Sarah re: questions (.5) -call w/ Kaitlyn re: BS&A ? (.25) -audit prep (3.25) - might need to reduce time, 1st time prepping schedules	4.00
9/6/2024	[REDACTED]	call with Kourtney on DH prep questions	0.25
9/6/2024	[REDACTED]	1 - Training audit prep Kourtney 4 - LTD, CIP follow-up with client	5.00
9/9/2024	[REDACTED]	Entered DIVDAT deposits into spreadsheets	0.50
9/9/2024	[REDACTED]	audit prep	2.00
9/9/2024	[REDACTED]	pc with Michelle	0.25
9/9/2024	[REDACTED]	workpaper review	2.50
9/10/2024	[REDACTED]	Debt audit prep	2.00
9/10/2024	[REDACTED]	bank recs	1.00
9/10/2024	[REDACTED]	Review audit workpapers	1.75



Plante & Moran, PLLC
3000 Town Center
Suite 100
Southfield, MI 48075
Tel: +1 (248) 352-2500

INVOICE

City of Dearborn Heights
6045 Fenton
Dearborn Heights, MI 48127
United States of America

Date: 09/26/2024
Client No: 17784
Invoice No: 10314103
Page: 1

For Professional Services Rendered

For professional services rendered September 11 through September 23, 2024 as approved by City Council on October 25, 2022. 17,388.00

Work performed includes audit prep, bank reconciliations, DIVDAT receivables, BS&A, on site assistance, and other communication.

Staff: 92 hours

Balance Due \$17,388.00 USD

101-223-817.000
10/8/2024

Remittance Information:

Check:

Plante & Moran PLLC
16060 Collections Center
Drive
Chicago, IL 60693

Bank
Routing/ABA#
Bank Address

Account Number
Account Name

Wire Transfer:

Bank of America
026009593
222 Broadway
New York, NY 10038

9890996003
Plante & Moran, PLLC

ACH:

Bank of America
071000039
100 North Tryon Street
Charlotte, NC 28202

9890996003
Plante & Moran, PLLC



Client Payment Portal: <https://www.plantemoran.com/client-payment-portal>

Date	Staff	Memo	Hours
9/11/2024		Audit prep - Debt	3.50
9/11/2024		audit prep	1.50
9/11/2024		client update call with Michelle	0.25
9/11/2024		Audit discussion	1.75
9/12/2024		Audit prep- debt	2.50
9/12/2024		audit prep	7.00
9/12/2024		Review audit prep, discussions with Comptroller, HR director, pension dept on audit matters	7.00
9/12/2024		Travel to/from DH	1.25
9/13/2024		bank recs	2.00
9/13/2024		bank recs	0.75
9/16/2024		Entered DIVDAT payments into Water and Tax workpapers	0.50
9/16/2024		audit prep	1.50
9/16/2024		Bank recs	1.75
9/17/2024		on site accounting assistance, work on bank recs, audit prep, conversations with Mahdi Michelle Shannon and Colleen on Treasury items, conversations with Michelle and Lisa about treasury and cash functions, meeting with Michelle Shannon and Lisa on treasurer bank rec functions and city policies, emails with client, work in BS&A, check cash receipting settings, updates with Colleen	5.50
9/17/2024		Travel to/from DH	0.75
9/17/2024		bank recs	2.00
9/17/2024		Travel to/from DH	1.00
9/17/2024		Audit prep, discussions with treasurer, deputy treasurer, comptroller, deputy comptroller on treasury procedures	7.75
9/17/2024		Audit prep- Debt	2.00
9/18/2024		Audit prep- Debt	0.25
9/18/2024		audit prep	3.00
9/18/2024		Audit prep review, questions from comptroller, discussion with CDBG director	5.25
9/18/2024		update call with Kari on client, emails with client on bank rec process, emails with Colleen on journalizing and deposit creation	0.25
9/19/2024		audit prep	6.00
9/19/2024		bank recs	1.00
9/19/2024		audit prep	7.00
9/20/2024		audit	5.00
9/20/2024		convo with michelle about audit prep	0.50
9/20/2024		remote access, check on access to excel, communicate with PMGAP team Sarah and Michelle	0.25
9/20/2024		audit prep	3.75
9/23/2024		Divdat payments recoded into excel workpaper	0.50
9/23/2024		Audit Prep - MMRMA	3.50
9/23/2024		audit prep - pension and opeb	2.50
9/23/2024		audit prep review	3.00

Quad-Tran of Michigan, Inc.
PO Box 531356
Livonia, MI 48153 US
248-353-4380
quadtranaz@sbcglobal.net

Invoice

BILL TO
20th District Court
Michelle Adkins
25637 Michigan Avenue
Dearborn Heights, MI
48125-3271

INVOICE #	DATE	TOTAL DUE	DUE DATE	TERMS	ENCLOSURE
7723	09/30/2024	\$4,242.81	10/01/2024	Due on receipt	

SERVICE	DESCRIPTION	QTY	RATE	AMOUNT
PostageActual	Actual Postage for Month of: September, 2024			1,742.81
PostageAverage	Postage Average for Month of: October 2024			2,500.00
	SUBTOTAL			4,242.81
	TAX			0.00
	TOTAL			4,242.81
	BALANCE DUE			\$4,242.81

OK to pay #101.200.728.000
C Madkins
10-1-24

Quad-Tran of Michigan, Inc.
PO Box 531356
Livonia, MI 48153 US
248-353-4380
quadtranaz@sbcglobal.net

Invoice

BILL TO
Ms. Michelle Adkins
20th District Court
25637 Michigan Avenue
Dearborn Heights, MI
48125-3271

INVOICE #	DATE	TOTAL DUE	DUE DATE	TERMS	ENCLOSED
7722	09/30/2024	\$7,684.00	10/01/2024	Due on receipt	

SERVICE	DESCRIPTION	QTY	RATE	AMOUNT
Data Processing	Data Processing Services for the Month of: September, 2024		#5300 #136-818	4,500.00
Lein/Sos	LEIN/SOS Access Charge for the Month of: September, 2024			800.00
ETicket	E-Ticket Process for the Month of: September, 2024	9	20.00	180.00
Maintenance - JDW	Electronic process to Michigan JDW		#680 #136-804	250.00
Set Aside	Electronic MSP Set Aside process			250.00
Hearing Notices	Hearing Notices	3.50	240.00	840.00
Default Notices	Default Notice Mailers	1.40	240.00	336.00
14Day Notices	14-Day Notice Mailers	1	240.00	240.00
Free Form Notices	Free Form Court Notice Mailers	1.20	240.00	288.00
SUBTOTAL				7,684.00
TAX				0.00
TOTAL				7,684.00
BALANCE DUE				\$7,684.00

OK to pay
Michelle Adkins
10-1-24

R&R Fire Truck Repair
 295 Industrial Park Drive
 Belleville, MI 48111
 shop@rrfiretruck.com
 (248) 344-4443



Invoice

Date:

69015

9/16/2024

Bill To

Dearborn Heights Fire Department*
 1999 N. Beech Daly Road
 Dearborn Heights, MI 48127
 P: 313-791-3676 F: 313-791-3661

Drop Ship Address

Dearborn Heights Fire
 Department*
 1999 N. Beech Daly
 Road
 Dearborn Heights, MI
 48127

Remit Payment To

R&R Fire Truck
 Repair, Inc.
 295 Industrial Park
 Drive
 Belleville, MI 48111

Terms	Due Date	CS	Unit #	Purchase Order
Net 30	10/16/2024	1756		

Line	Part #	Description	Quantity	UOM	Rate	Amount
1	SM3-MP-TB-21-11 11/16-WL-PCB	Steel, 3-Rail Single Direction Toolboard, 600lb Distributed Weight Capacity. 100% Extension	3		\$678.00	\$2,034.00
2	SM3-LP-TB-21-8 1/4-USD-PCB	Steel, 3-Rail Single Direction Toolboard, 300lb Distributed Weight Capacity. 100% Extension	3		\$560.00	\$1,680.00
3	Freight	Freight	1		\$394.29	\$394.29

OCT 01 2024

[Signature] - O.K. to pay
 (335-932)

Subtotal	\$4,108.29
Total	\$4,108.29
Payments & Credits	\$0.00
Balance Due	\$4,108.29

Any warranties on the parts and accessories sold hereby are made by the manufacturer. You understand and agree that we make no warranties of any kind unless expressed in writing. You hereby authorize us to perform the repair work herein set forth and to purchase the necessary material and parts to perform such repair work. You agree that we are not responsible for loss or damage to your vehicle or articles left in your vehicle in case of fire, theft, or any other cause beyond our control or for any delays caused by unavailability of parts or delays in part shipments by the supplier or transporter. In addition, you agree that we are not responsible for damages to your vehicle from freezing due to lack of antifreeze. You hereby grant our employees permission to operate your vehicle on streets, highways, or elsewhere for the purpose of testing and/or inspection. You acknowledge and agree that an express mechanic's lien on your vehicle is granted to secure payment of this invoice for the repair work detailed in this invoice.

R&R Fire Truck Repair

751 Doheny Drive
Northville, MI 48167
shop@rrfiretruck.com
(248) 344-4443



Invoice: 68062

Date: 4/24/2024

Bill To
Dearborn Heights Fire Department*
1999 N. Beech Daly Road
Dearborn Heights, MI 48127
P: 313-791-3676 F: 313-791-3661



PAST DUE

Remit Payment To
R&R Fire Truck Repair, Inc.
751 Doheny Drive
Northville, MI 48167



PAST DUE

Service Order	Terms	Due Date	Authorizer	Customer PO	Service Writer	Unit #
1040	Net 30	5/24/2024			Lunsford, Curtis	L-1 1202

Item	Description	Quantity	Rate	Amount
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Complaint: Complete repairs from accident damage

Cause: Front end collision

Labor

Correction:

879.99000 \$150.00 \$131,998.50

Body / Body Panel / Remove and dismantle bumper assembly. Remove all components on front of cab. Headlights, grill, bumper assembly, a/c condenser, antenna, windshields, wiper assemblies, turn lights, emergency lights, cab lights, front discharge plumbing and intake plumbing. Found that the frame was bent and required a frame shop. Frame shop looked at truck and required the engine, transmission, fire pump radiator, charger air cooler, pump house to be removed. Had to set the cab up for them to lift off frame when pulling it.

Replaced the cross members frame extensions, support gussets, cab tilt sled, splay rails, frame extensions engine and transmission cross members and mounts due to being bent or damaged. Once the frame was completed, (9 1/2 months) we installed the engine and transmission, fire pump, pump house, radiator and charged air cooler. Reconnect all wire harnesses and hoses / plumbing. Had to replace the transmission adapter housing. We found that the engine bell housing was cracked when installing the transmission.

2 month set back. Repaired the center carrier bearing and replaced the u-joints. Replaced the brake chambers due to the springs were compressed too long and the parking brake would not hold truck in place. Body repair the left "A" pillar, cracked. Body work the left wheel well crown support, cracked. Weld everything up. Grind and weld again. Body work the back of the cab from hitting the pump house. Repair front of cab body damage. Replace fascia supports and fascia.

Rebuild grill mounting. Strip and repair the roof where the aerial made contact and damaged the sheeting and paint. Once everything was pulled and repaired and in proper position, we prepared it for paint. Preparation included some fiberglass. Prep, wash, prime, sand, wash, paint and seal the cab front, doors and roof areas. Rub out the areas. Clear coat was applied. Install stripping and lettering. Reassemble the entire cab including headlight assemblies, overhead lights, A/C condenser, grill, windshields and dash.

Install floor matting and seats that were removed for the repairs. Assemble the front bumper assembly. Fabricate some of the braces to fit properly. Install new speakers, air siren and air horns. Install front inlet plumbing and discharge plumbing. Reassemble after paint. cleaned area around light mounting holes. Apply VHB to bottom of junction boxes and place on roof. Clean hardware to reuse. Install mounts for mini light bars with seam sealer under each bolt. Attach light bars and run power cable into cab and attach to block. Installed all 5 cab marker lights with original hardware and copious amounts of seam sealer under each. Connected to wiring harness. Installed brow lights with old hardware and seam sealer. Connected to wiring harness with butt connectors and sealed connections. Replace glove box panel and chase covers on both sides. Bolt heads were covered with seam sealer by the painter after the first application dried.

Balance due
\$14,105.98

Item	Description	Quantity	Rate	Amount
	Pull wiring, at officers door, through spring retainers and connect with butt connectors. Install camera on rt side of cab. Open holes for bezel around r/f marker/turn light and install with original hardware. Installed officers door panel. Installed overhead a/c manifold and sealed with aluminum tape(5'). Remove the drivers door inner panel. Pulled wiring through spring guides and reinstall the drivers door. Mount warning placards at drivers side. Install wire connectors on door harness and plug behind headlight. Install and connect left front marker/turn light and bezel. Connect harness at left crew door and finish installing mounting bolts. Remove VHB from back of grab handle plate for drivers side. Apply new VHB. 60 sq.in. Mount left side scene light(behind drivers door) and attach to wiring harness. Stuff wiring back into body cavity. Apply grab handle backing plate at drivers side door. Mount grab handle. Install plugs into access holes. Install shore line and cover. Install L/F emergency light over wheel. Apply VHB (8") to placard for shore line and place on truck over plug. Attach SPARTAN emblem at drivers grab handle with VHB (12 sq.in). Reinstall cowling over duct work in cab and plug in speakers. Reinstall radio in mount over driver. Replace/install officer step with new. Installed left front fender flare and rubber liner with old hardware. Installed remaining cab ceiling panels and warning placards, sun visor(officers side) and horn pull switch. Mounted both windshield wiper arms- had to clean up hole in passenger side stem with tap. Install inner wall panel behind driver with original hardware. Prep for radiator and CAC for install. Attach power cables behind driver headlight. Hook up battery charger. Install radiator assembly. Cap lower port of radiator and install testing plug in top and pressurize. Spray outside with soapy water to check for leaks-found none. Pressure test CAC and check for leak. None found. Jack and support engine so bell housing is free. Removed starter and flex plate. Remove broken bell housing. Noticed a leaking expansion plug (21mm @ oil galley) and the main seal leaking. Checked procedure and availability. We had the correct parts and sealant. Cleaned out old plug and cleaned the hole. Installed new plug with medium STR locktite. Replaced main seal. Installed bell housing with original hardware and torqued to 57ft#. Set engine back down on wood block under bell housing. Install flex plate and torque bolts to spec (22ft#+60deg). Torque starter bolts to spec(32ft#). Install engine mounts to bell housing and torque to spec (94.5ft#). Support and lift engine and install into truck. Finish assembling mounts front and back. Reattach wire loop, left side of transmission. Install fan shroud and install fan hub, air line. Install fan to hub and install upper left section of shroud. Tighten all shroud bolts. Install side plates on radiator and attach power steering cooler. Attach side support struts to rad and frame. Solder nipple onto radiator fill neck and installed on rad. Attached coolant lines at right side of engine. Installed bracket for a/c and alternator. Attached fuel lines. Installed oil fill and dipstick tubes mounting brackets and secure. Move over more parts from pallet and install right side pump house support bracket. Attach battery cables to starter and secure ground at motor. Install power steering reservoir and lines. Install belly pan. Attach horn relay at left splay rail. Install new officer side step with old hardware. Bring cab down and remove parts and hardware bags. Mount intake heater solenoid. Fuse-holder is broken, ordered new. Secure wiring harness behind both headlights install headlight assemblies and bezels. Install grill and clean. Replace o-rings at a/c lines to compressor and attach lines. Plug in wiring and attach ground wire. Clean up dash panel, some reflectors and placards and recovery bottle kit. Get bottle mount bracket from parts. Secure wiring for hi/low switches (A/C) with zip ties. Install coolant hose from reservoir to back of water pump. Install new coolant recovery bottle and basket, hoses. Attach lower radiator hose. Clean mating surfaces of plumbing flanges with cookie wheel. Remove dash cluster and remove all gauges. Install in new plate. Noticed the LED display is cracked. Ordered from parts. Install air intake plumbing on right side of engine. Install flex tube to air filter and secure. Lay out plumbing parts for install. (right intake, discharge manifold, valves). Install plumbing components, tank to pump hose and valve, left and right intake pipes. Install aerial discharge pipe with original victaulic clamps. Install transmission cooler lines and wiring. Get started on right side plumbing for pump-front intake valve and relief valve. Kept batteries on trickle charge all day. Remove cover plate from transmission. Installed old PTO with new install kit (gasket, bolts and fitting at transmission). Plug into wiring harness and secure with old p-clamps. Install 90 deg pipe onto right side intake with old victaulic clamp. Torque the torque converter bolts. Installed plumbing components onto pump drivers side aux inlet, pass side discharge. Cleaned mating surfaces of flanges. Loosen fan shroud bolts and adjust up off of fan blades and re tightened.			

Item	Description	Quantity	Rate	Amount
	Installed exhaust from turbo to muffler. Installed piping for trash line over drivers steer, including mounts and u-bolts. Fill radiator with coolant using air lift. Found one clamp had failed so I replaced it. Checked every thing else for leaks. Filled transmission with new Transynd (19qt). Secured wiring harness around trans fill tube with zip ties. Install discharge piping at drivers side with new gasket and old hardware. Attach both valves. Flip front intake valve 180 deg. so manual lug is accessible. Attach intake relief valve and pipe with bend in it. Install aerial intake pipe to right side panel and support bracket. Adjust aerial intake pipe to fit support brackets in place. Get drive line out from under truck and clean up all yoke ears with cookie wheel. Remove yoke and carrier bearing from mid shaft. clean splines and get new u-joint from parts. Had to order new carrier bearing. install shaft from trans to transfer case with new strap kit at transmission. Torqued strap bolts to 125ft#- cap bolts to 43ft#. Got correct carrier bearing and installed it on shaft. Installed yoke with new nut. install in truck along with remaining drive shafts. Also replaced rearmost u- joint. Noticed the spring inside the brake chamber at r/r is broken inside. Replaced both rear chambers with new from stock. Adjusted brakes. Air up truck from fitting on mainline at compressor and spray entire truck to check for air leaks. Found 2 drain cocks leaking replace with new. Hookup lines to pump switch. Install exhaust pipe after muffler with 2 new clamps. Prime fuel system and start. check fluids and hook up computer to clear codes. reinstall lollypop light at L/R with 2 pink butts. 10/16/23-Conner informed me of the fuel line prob and we installed the new one and primed the system and started the truck. pulled out of shop and bring in pump house- turn around and park in shop.moved bumper to painters area. Assemble top of truck body Then reinstall pump house and ladder cradle. Tow truck showed up help reinstall ladder. Got the ladder wired in, and the length potentiometer installed. Straightened out the elevation potentiometer mount. Started to lay and sort out the wiring in the pump house. Continued to work on sorting out the wiring and hooked up most of generator wiring started to hook up the hydraulic hoses. Got the primer valve mounted on transfer case. Bolt up tank drain and foam valve. Worked on connecting all the hydraulic hoses for the hydraulic tank and generator. Got the cross lay discharges mounted. Worked on finishing hooking up the hydraulic lines used new o rings where was needed. got part number for the hydraulic filters to parts so we can get new ones coming. Got the pump house gauge door set on and got the wiring on it roughed in and started to connect all of the wires and tie them up. Hooked up the Nodes in the pump house pocket and checked the ladder for signs of life, seems to work. Finished hooking wires too pump door, then filled the hydraulic reservoir, had to add 5 gal, still need to exercise the ladder and re check. Raised the ladder and laid the wire that runs to the node pocket in the pump house where it goes and roughly put all the powers and grounds back needed to run the nodes. Added oil to generator. Mounted the pump house bottom sections both left and right side. Figure out and hook up plumbing in pump house both right and left sides. Installed cross lay hoses and worked on cross lay bed Finished up bolting in cross lay bed installed pump house grab handles and continued to sort wiring and installed the other pump house step and installed wiring for step and light.Function test everything and recheck for leaks and good. Ready for testing. Once assembled, fill water tank and check operation of fire pump and check for leaks. Good. perform pump test and aerial test. Both test were good, performed well. Road test unit for 38 miles. Handled very well, drives straight, no clunks or rattles. Front brakes grabbing and causing dive to left and right. Inspect the brakes and check adjustment. All looks good. Readjust and test again. No change. Replace front brakes and retest. Stops properly. Steering wheel crooked and could not get it adjusted to correct location. Found that the tie rods were bad. Replace tie rods and align front end. Calibrate steering and road test. Good. Send out for cleaning. Once cleaned, perform and check of all systems and make sure everything is tight and secure. Deliver to fire station. Good to go. - Completed: 4/24/2024			
Parts	Front Cab Step - 3126-EE2-001	1.00000	\$549.93	\$549.93
Parts	DELFLEET HS - FDGH- WHITE 925849	1.00000	\$104.05	\$104.05
Parts	Windshield Replacement - Windshield Replacement	1.00000	\$357.00	\$357.00
Parts	Deutsch Pin, Solid Size 16-20 AWG - 0460-202-16141	4.00000	\$1.84	\$7.36
Parts	Strap Kits - 6.5-70-18X	2.00000	\$22.87	\$45.74

Item	Description	Quantity	Rate	Amount
Parts	Air Horn - 21" E-Tone - 2524-MM5-001	2.00000	\$218.25	\$436.51
Parts	1710 U-Joint - 5-280X	2.00000	\$119.35	\$238.70
Parts	Beauty Ring Intake - BRI	1.00000	\$360.00	\$360.00
Parts	Bezel, 3.17X 1.32 / Silver - LB-11426	2.00000	\$9.90	\$19.80
Parts	30 - 36 Brake Chamber - OTR3036SB	2.00000	\$216.24	\$432.48
Parts	Bezel, Size B 5.75 X 2.85 - LB-11117	1.00000	\$18.25	\$18.25
Parts	Bolt, 1/2-13x1-1/2 - 90602A233	30.00000	\$5.73	\$172.00
Parts	Center Bearing - 210121-1X	1.00000	\$97.02	\$97.02
Parts	Bolt, 1/2-13x1-3/4 - 90602A234	10.00000	\$5.43	\$54.33
Parts	Bolt, 1/2-13x2 Gr8 - 90602A235	20.00000	\$6.53	\$130.67
Parts	4" U-Bolt Clamp - 19A-400	2.00000	\$14.10	\$28.20
Parts	Bolt, 1/2-13x4-1/2 - 90602A254	2.00000	\$17.36	\$34.72
Parts	Fuel Line - 3966128	1.00000	\$68.62	\$68.62
Parts	BOLT, 1/2-13X6 GR8 - 91257A736	5.00000	\$12.89	\$64.46
Parts	Fuel Water Filter - FS1098	1.00000	\$118.50	\$118.50
Parts	BOLT, 1/2X13X2-1/4 - 90602A236	15.00000	\$6.37	\$95.49
Parts	5" Diameter X 6" Long Vic X Plain Stainless Pipe - N44PW5X6	2.00000	\$2.00	\$4.00
Parts	BOLT, 5/8-11X1-3/4 - 90602A259	10.00000	\$11.77	\$117.72
Parts	Brake Clean - 0609752	4.00000	\$22.82	\$91.28
Parts	BOLT, 5/8-11X2 - 90602A260	10.00000	\$11.80	\$118.00
Parts	Label, Jake Brake Warning - 3893-NN2-008	1.00000	\$19.90	\$19.90
Parts	Freight - Freight	1.00000	\$14.67	\$14.67
Parts	Bracket Cab Tilt Pivot - 1187-EE1-001	1.00000	\$3,243.99	\$3,243.99
Parts	Bracket, Cab Lift Cylinder - 1325-EE1-002	1.00000	\$481.59	\$481.59
Parts	Freight - Freight	1.00000	\$14.67	\$14.67
Parts	Bracket, Surge Tank - 1319-FF3-001	1.00000	\$34.92	\$34.92
Parts	Gauge - 4" Pressure Discharge 0-400psi - SPA-GA1-0026	1.00000	\$271.59	\$271.59
Parts	Bumper - Extreme - Metro - 4085-CC4-007	1.00000	\$2,733.69	\$2,733.69
Parts	Gauge - 4" Pressure Intake / -30-400psi - SPA-GA1-0027	1.00000	\$271.59	\$271.59
Parts	Crossmember - 706208	1.00000	\$703.02	\$703.02
Parts	Freight - Freight	1.00000	\$22.58	\$22.58
Parts	Crossmember - Tilt - 3378-CC2-001	1.00000	\$850.58	\$850.58
Parts	End Cap, Hose Roller Black - PR-10215	1.00000	\$7.90	\$7.90
Parts	Duct Tape - 0617068	1.00000	\$19.98	\$19.98
Parts	Tag " Front Inlet " - LB-11600	1.00000	\$7.90	\$7.90
Parts	EXT- FRT Bumper LH - 3915-CC4-013	1.00000	\$1,325.23	\$1,325.23
Parts	Label, Designated Step - 6000107	1.00000	\$21.58	\$21.58
Parts	EXT- FRT Bumper RH - 3915-CC4-014	1.00000	\$1,325.23	\$1,325.23
Parts	Bezel - lb-11117	1.00000	\$19.92	\$19.92
Parts	Fish Plate - RH - 3444-CC2-001	1.00000	\$499.93	\$499.93
Parts	Compression Latch, Flush Trigger, Short Arm - 47TC	1.00000	\$36.17	\$36.17

Item	Description	Quantity	Rate	Amount
Parts	Front Engine Mount Bracket LH - 1439-AA1-001	1.00000	\$518.40	\$518.40
Parts	2.5" 0-400PSI Gauge Enhanced - 3010108-20100-E	6.00000	\$176.11	\$1,056.66
Parts	Gasket, Rear Cover - 3939353	1.00000	\$19.06	\$19.06
Parts	Intake Beauty Ring - 3048FINSS	1.00000	\$89.97	\$89.97
Parts	Guard, Q2B Siren - 1080-CC4	2.00000	\$179.92	\$359.84
Parts	Gusset, Crossmember - 2084-CC2-004	4.00000	\$189.92	\$759.68
Parts	Guard, Q Siren - 1080-CC4-001	2.00000	\$298.26	\$596.52
Parts	Hosewell Apron Assembly - SM-MISC1243	1.00000	\$6,367.16	\$6,367.16
Parts	Freight - Guard - Freight	1.00000	\$21.37	\$21.37
Parts	Housing, Flywheel - 5339507	1.00000	\$1,322.63	\$1,322.63
Parts	Pump Discharge Pipe - 15925	1.00000	\$0.00	\$0.00
Parts	Freight - Freight	1.00000	\$12.97	\$12.97
Parts	Lable - Custom - 724091	1.00000	\$7.90	\$7.90
Parts	Brake Shoe Repair Kit - E2769SHD	2.00000	\$31.65	\$63.30
Parts	Left Rail Splay - 0148-CC5-001	1.00000	\$3,217.44	\$3,217.44
Parts	LOCK NUT, 5/8-11 GR8 - 62CNLF8Y	25.00000	\$3.68	\$92.05
Parts	Mount - Front Engine Bracket RH - 1439-AA1-002	1.00000	\$518.40	\$518.40
Parts	Mount Front Engine - 1411-AA1-001	1.00000	\$1,307.44	\$1,307.44
Parts	Nut, 1/2-13 Flanged - 90949A218	40.00000	\$3.31	\$132.40
Parts	Nut, Flanged 1/2-13 - 110129153	30.00000	\$4.97	\$149.10
Parts	Oil Seal - 5405392	1.00000	\$54.50	\$54.50
Parts	P.B Blaster - 921798364	1.00000	\$13.02	\$13.02
Parts	Pin, Cab - 1257-EE1-001	2.00000	\$109.92	\$219.84
Parts	PNL-2016 Met/Glad Standard Gauge - 1996-NN1-001	1.00000	\$434.93	\$434.93
Parts	Rear Transmission Support - 0190-TT1	1.00000	\$130.42	\$130.42
Labor	Frame Repair	1.00000	\$22,387.50	\$22,387.50
Parts	Right Rail Splay - 0148-CC5-002	1.00000	\$3,860.93	\$3,860.93
Parts	Safety Glass - Clear H6 36 - 1050079	1.00000	\$12.03	\$12.03
Parts	Safety Glasses / G6-Cir OTG Visor - 1008342	1.00000	\$8.32	\$8.32
Parts	Seal Kit, Centerpost - 0323129	1.00000	\$263.26	\$263.26
Parts	Seal, O-Ring - 3912473	1.00000	\$8.34	\$8.34
Parts	Siren Bezel / Trim - ST2022-1	2.00000	\$72.58	\$145.16
Parts	Siren - 719697	1.00000	\$3,166.43	\$3,166.43
Parts	Speaker 100W / Bumper Mount - 011130V009	2.00000	\$376.59	\$753.18
Parts	SS, Designated Step Surfaces - 6000107	1.00000	\$19.92	\$19.92
Parts	Std, Steel, Grade 8, Black Oxide, 4 in lg, Partially Threaded, Inch - 22A435	1.00000	\$6.72	\$6.72
Parts	Stop - Bumper For Axle - 0537-SS5-001	1.00000	\$18.25	\$18.25
Parts	Yellow Valve Paint Marker - 0200659	1.00000	\$9.33	\$9.33
Parts	Auto Coat BT LV650 RM Mixed P1/3.0 VOC - SCVBTLV650P1-L	1.00000	\$258.28	\$258.28
Parts	Remover, Wax/Grease - KEY90	1.00000	\$57.43	\$57.43
Parts	Filler - 31131	1.00000	\$228.50	\$228.50

Item	Description	Quantity	Rate	Amount
Parts	Organic Vapor Cartridge - 07046	1.00000	\$22.85	\$22.85
Parts	Respirator, Half Mask - 07193	1.00000	\$77.95	\$77.95
Parts	Dry Tack, Blend Prep - GER020008B	1.00000	\$28.70	\$28.70
Parts	Masking Tape, 3/4" - 26334	1.00000	\$171.75	\$171.75
Parts	P100 Filters - 07184	1.00000	\$31.70	\$31.70
Parts	Cartridge, Dry Guide Coat - 05860	1.00000	\$122.69	\$122.69
Parts	Cup, Easy Mix Quart - 70165	5.00000	\$9.14	\$45.70
Parts	Scuff Pad - NOR58000	1.00000	\$71.52	\$71.52
Parts	Film, Hand Mask 72"x90" - 552MISC	2.00000	\$35.42	\$70.84
Parts	P320 Grit Gold - 02591	1.00000	\$149.89	\$149.89
Parts	P240 Grit Gold - 02593	1.00000	\$149.89	\$149.89
Parts	P150 Grit Gold - 02596	1.00000	\$149.89	\$149.89
Parts	P80 Grit Gold - 02599	1.00000	\$149.89	\$149.89
Parts	Masking Tape, 3/4" - 26334	1.00000	\$171.75	\$171.75
Parts	Front Engine Mount Bracket LH - 1439-AA1-001	1.00000	\$561.59	\$561.59
Parts	Remove Ladder Off Truck & Fire Truck Back On It's Base - Sublet	1.00000	\$1,500.00	\$1,500.00
Labor	Respot cab and chassis. Tow from R&R to Lansing	1.00000	\$1,134.00	\$1,134.00
Labor	Tow Charge	1.00000	\$553.50	\$553.50
Parts	Prep Wipes - PSE02BW75	3.00000	\$46.35	\$139.05
Parts	Pad, Foam Polishing - 5707	1.00000	\$67.13	\$67.13
Parts	Pad, Wool Dual Side - 5703	1.00000	\$79.38	\$79.38
Parts	Pad, Foam Compound - 5706	1.00000	\$66.20	\$66.20
Parts	Towel, PP Blue Micro Fiber - PSE02MFTB	1.00000	\$24.03	\$24.03
Parts	Wipes, Blue Prep - PSE02BW75	2.00000	\$46.35	\$92.70
Parts	Buffing Pad 3" - 85078	2.00000	\$17.22	\$34.44
Parts	Graphics - Graphic's	1.00000	\$100.00	\$100.00
Parts	Decal - Red Gold Black White Graphics - Graphics	1.00000	\$166.67	\$166.67
Parts	Decal - White Reflective and Paramedic Text - Graphics	1.00000	\$325.01	\$325.01
Parts	Kit, Coolant Recovery - 0783-FF3-001	1.00000	\$56.58	\$56.58
Parts	Freight / Kit recovery - Freight	1.00000	\$20.84	\$20.84
Parts	Stud Kit for PTO- Allison - 7170-86X	1.00000	\$82.58	\$82.58
Parts	PTO Gasket - 29513736	1.00000	\$20.92	\$20.92
Labor	Dyno Charge Allison	1.00000	\$420.00	\$420.00
Parts	Gasket, PTO Cover - 23048037	2.00000	\$17.62	\$35.24
Parts	Bolt, M10X1.5X25 - 11514354A	2.00000	\$5.50	\$11.00
Parts	Conv Housing PTO - 3000EVS	1.00000	\$3,220.14	\$3,220.14
Parts	Bolt, M8X1.25X25 - 11505232	12.00000	\$5.50	\$66.00
Parts	Bolt, M8X1.25X20 - 11514357	12.00000	\$5.58	\$66.96
Parts	Comm Ctr Ga Panel - 726141	1.00000	\$1,061.60	\$1,061.60
Parts	Freight / 726141 - Freight	1.00000	\$20.21	\$20.21
Parts	Latch, Trigger Raised Button - 67200615	1.00000	\$39.87	\$39.87

Item	Description	Quantity	Rate	Amount
Parts	Turn Signal Rear Light BRITAX LED - 688326	1.00000	\$134.19	\$134.19
Parts	Autocoat BT LV650 RM Mixed - SCVBTLV650P4-L	22.00000	\$13.90	\$305.80
Parts	LV651 Glamour Clear - 566662	64.00000	\$4.43	\$283.52
Parts	LV650 Hardener - 509952	5.50000	\$5.50	\$30.25
Parts	Auto Coat Med Reducer - 480495	5.50000	\$1.18	\$6.49
Parts	Configurable Sill Plate - R00029	1.00000	\$105.57	\$105.57
Parts	Freight / rom door - Freight	1.00000	\$46.24	\$46.24
Labor	Install Decals	1.00000	\$360.00	\$360.00
Parts	Deutsch, Socket Solid - 0462-201-16141	4.00000	\$0.87	\$3.48
Parts	Transynd Transmission Fluid - 15E2E0	19.00000	\$24.58	\$467.02
Parts	Chev Rando HDZ 68 Artic Blue - 273262448	8.00000	\$15.68	\$125.44
Parts	Front Suction Pipe - Vertical - 5" - 4228-NN2-001	1.00000	\$3,812.93	\$3,812.93
			Subtotal	\$213,420.12

PM: NFPA Ladder Inspection

Cause: yearly testing

(Inspection)

Labor	Correction: Aerial / Aerial Structure / Set up and operate aerial for testing. Perform NFPA test for aerial apparatus. - Completed: 3/20/2024	4.00000	\$150.00	\$600.00
Parts	Annual Aerial Testing - Annual Aerial Testing	1.00000	\$2,392.50	\$2,392.50
			Subtotal	\$2,992.50

Complaint: Pump Test 501 GPM - 1500 GPM

Cause: Customer request

Labor	Correction: Fire Pump / Pump / Annual pump test with report attached. - Completed: 2/2/2024	1.30000	\$150.00	\$195.00
			Subtotal	\$195.00

Complaint: Pump intake screen needs replacement.

Cause: Natural wear and rock damage.

(Procedure)

Labor	Correction: Fire Pump / Pump / Remove old screen, clean, replace with new. Old screens were deteriorated. - Completed: 2/26/2024	0.25000	\$150.00	\$37.50
Parts	Screen Intake 6" Zinc - 61403	2.00000	\$28.35	\$56.70
Parts	SUBLET Align Bumper - SUBLET	1.00000	\$416.68	\$416.68
			Subtotal	\$510.88

PM: Ladder Service

Cause: Sitting for 18 months

(PM)

Item	Description	Quantity	Rate	Amount
Labor	Correction: Aerial / Aerial Structure / Technician inspected the truck. The technician stretched the ladder. He scraped off the heaviest of the residue and old grease. He used degreaser and mineral spirits to remove the remaining residue. He washed the unit and applied new machinery grease. He ran the ladder and removed any excess grease. He lubricated the water way. He greased all the fittings on the turntable. He checked the cables and adjusted if needed. He tested the operation the ladder is working properly and good to go. - Completed: 3/9/2024	18.00000	\$150.00	\$2,700.00
Parts	Food Machinery Grease - 230206642	3.00000	\$13.40	\$40.20
Parts	Mineral Spirits - 030192040065	1.00000	\$39.93	\$39.93
			Subtotal	\$2,780.13

Complaint: Brake pull, steering wheel of center

Cause: Steering Wheel Off Center - Brake pull

(Inspection)

Labor	Correction: Front Axle & Steering / Steering Shaft / During test drive the steering wheel was not center and the front brakes would pull left then right. Jack up and remove the wheels and brake drums. Inspect all of the parts. They appeared to be in good order and the cams were well lubed. Rough up the linings with sand paper and reassemble. Road test and no change. Jack up and remove the wheels and brakes. Replace the hardware kits and reassemble. Road test again and no change. Jack up and remove wheels. Order replacement brakes. Replace brake shoes, hardware kits and drums. Install wheels and road test. Unit now stops properly with no pull. Good. Check the steering wheel not center. Tried to center it, but could not get it there. Start inspecting and measuring the steering system links, checking the spring center pins, gear box adjustments. Check toe on the front tires and it was off 1/2". A tie rod has to be bent. Look the tie rods over closely and could not see anything wrong. All thing it can be. Remove and replace the tie rods. Set toe and center steering wheel. Calibrate the steering angle sensor and road test. Steering wheel is straight and good to go. - Completed: 3/30/2024	28.33000	\$150.00	\$4,249.50
Parts	Tie Rod RH - 0876-DD1-801018	1.00000	\$324.92	\$324.92
Parts	Tie Rod LH - 0876-DD1-801017	1.00000	\$324.92	\$324.92
Parts	Brake Drum, Balanced - 85123657002	2.00000	\$1,388.19	\$2,776.38
Parts	Brake Shoe - EX4715Q	4.00000	\$88.19	\$352.76
Parts	Inherent Core for Brake Shoe - C4715Q	4.00000	\$25.67	\$102.68
Parts	Dirty Core for Brake Shoe - C4715Q	-4.00000	\$25.67	-\$102.68
Parts	Brake Hardware Kit - E9644	2.00000	\$68.02	\$136.04
Parts	Freight - Freight	1.00000	\$21.82	\$21.82
			Subtotal	\$8,186.34

Complaint: Cleaning / detail truck

Cause: Crash repairs

(Inspection)

Labor	Correction: Body / Body Panel / Complete and through cleaning of the fire body, and cab after work was completed. - Completed: 3/30/2024	20.00000	\$150.00	\$3,000.00
			Subtotal	\$3,000.00

Parts run

Labor	Parts runs as needed for reassembly	7.25000	\$105.00	\$761.25
-------	-------------------------------------	---------	----------	----------

Item	Description	Quantity	Rate	Amount
			Subtotal	\$761.25
	Product Shipping	1.00	\$1,704.58	\$1,704.58
	Product Shipping	1.00	\$75.80	\$75.80
Unit: L-1 1202 VIN: 4S9BEFUA1JS419227 2018 Spartan/Smeal 75' ladder Aerial: 0 Hours Complete Unit: 36,357 Miles Engine: 1,775 Hours Fire Pump: 0 Hours				Labor \$144,321.75
				Parts \$87,524.47
				Shop Supplies \$850.00
				Pre-Charge Subtotal \$232,696.22
				Product Shipping \$1,704.58
				Product Shipping \$75.80
				Exempt (0% of \$0.00) \$0.00
				Total \$234,476.60
				Payments & Credits \$220,370.62
				Balance Due \$14,105.98

Lead Tech: Paul York

Technician Certificate ID:

Signature:

OCT 01 2024

O.K. to pay \$14,105.98

(335-932)

[Handwritten Signature]

Payment Information

Date Created	Date Applied	Payment #	Method	Reference #	Amount
9/4/2024	9/4/2024	100124987	Check	3045339	\$220,370.62

Any warranties on the parts and accessories sold hereby are made by the manufacturer. You understand and agree that we make no warranties of any kind unless expressed in writing. You hereby authorize us to perform the repair work herein set forth and to purchase the necessary material and parts to perform such repair work. You agree that we are not responsible for loss or damage to your vehicle or articles left in your vehicle in case of fire, theft, or any other cause beyond our control or for any delays caused by unavailability of parts or delays in part shipments by the supplier or transporter. In addition, you agree that we are not responsible for damages to your vehicle from freezing due to lack of antifreeze. You hereby grant our employees permission to operate your vehicle on streets, highways, or elsewhere for the purpose of testing and/or inspection. You acknowledge and agree that an express mechanic's lien on your vehicle is granted to secure payment of this invoice for the repair work detailed in this invoice.



INVOICE NUMBER
20241010121037

INVOICE DATE
10/10/2024

ACCOUNT NAME
City of Dearborn Heights

ACCOUNT NUMBER
121037

REFERENCE #
N/A

INVOICE TOTAL DUE

\$7,148.94

USD

Billing Period

9/3/2024-10/10/2024

Due Date

11/9/2024

BILL TO

City of Dearborn Heights (DBA - City of Dearborn Heights)
24600 Van Born Road
Dearborn Heights, MI 48125
United States

SOLD TO

City of Dearborn Heights
24600 Van Born Road
Dearborn Heights, MI 48125
United States

PAYMENT OPTIONS

By Check

Please detach remit slip and send check to:
Red Wing Business Advantage Account
PO Box 844329
Dallas, TX 75284-4329
United States

By ACH

Bank of America
ABA Routing #: 081000032
Account #: 010161004777

By Wire

Bank of America
ABA Routing #: 026009893
Account #: 010161004777

Electronic payment remittance should be emailed to: remittance@RedWingBusinessAdvantageAccount.com

NOTES

Thank you for your business.

Activity

Transaction Date	Transaction Reference	Employee Name	SKU	Billed Tax	Subsidy	Payroll Deduct	Billed Total
09/25/2024	513-71-10452	Joe Sabatini	02414D 115	\$0.00	\$300.00	\$0.00	\$300.00
09/25/2024	513-71-10456	Don Harper	02455D 110	\$0.00	\$220.99	\$0.00	\$220.99
09/25/2024	513-71-10465	Quandell Wright	04499E2120	\$0.00	\$233.74	\$0.00	\$233.74
09/25/2024	513-71-10475	Scott Fletcher	83644E2105	\$0.00	\$182.74	\$0.00	\$182.74
09/25/2024	513-71-10444	Matt Winnie	02240E2115	\$0.00	\$195.49	\$0.00	\$195.49
09/25/2024	513-71-10467	Ben Craft	83912D 130	\$0.00	\$195.49	\$0.00	\$195.49

Transaction Date	Transaction Reference	Employee Name	SKU	Billed Tax	Subsidy	Payroll Deduct	Billed Total
09/25/2024	513-71-10451	Mike Emery	03522D 120	\$0.00	\$237.99	\$0.00	\$237.99
09/25/2024	513-71-10463	Glenn Ray	02240H 090	\$0.00	\$195.49	\$0.00	\$195.49
09/25/2024	513-71-10464	Rich Foley	02240H 120	\$0.00	\$195.49	\$0.00	\$195.49
09/25/2024	513-71-10477	Chris Rockensuess	83632D 120	\$0.00	\$186.99	\$0.00	\$186.99
09/27/2024	513-2-113946	Chris Rockensuess	Multiple	\$0.00	\$42.50	\$0.00	\$42.50
09/27/2024	513-1-128599	Anthony Stuart	Multiple	\$0.00	-\$12.75	\$0.00	-\$12.75
09/30/2024	513-1-128654	Wesley Zain	02408D 110	\$0.00	\$242.24	\$0.00	\$242.24
10/02/2024	513-1-128741	Aaron Kiselis	Multiple	\$0.00	-\$34.00	\$0.00	-\$34.00
10/05/2024	513-2-114205	Scott Fletcher	Multiple	\$0.00	\$46.75	\$0.00	\$46.75
37 Transactions				Subtotal	\$7,148.94	\$0.00	\$7,148.94

For questions and payment instructions, contact us:

800-239-1064

support@redwingbusinessadvantageaccount.com

redwingbusinessadvantageaccount.com

Subsidy Product: \$7,148.94
Subsidy Tax: \$0.00
Billed Total: \$7,148.94

Please detach remit slip below this line and send with check to:



RED WING BUSINESS ADVANTAGE ACCOUNT

GL # 101-440-713.000

[Signature]

10/10/24

SEND TO

Red Wing Business Advantage Account
PO Box 844329
Dallas, TX 75284-4329
United States

Invoice Number
Account Name
Account Number
Invoice Date

20241010121037
City of Dearborn Heights
121037
10/10/2024

INVOICE TOTAL DUE
\$7,148.94

USD

Due Date
11/9/2024



28340 Wick Road
Romulus, MI 48174
Phone: (800) 875-FUEL
orders@RKA.com

Invoice Number: 0434419
Invoice Date: 09/24/24
Invoice Due Date: 10/24/24
Account Number: 0000864
Ship to Code: 1000

SOLD TO: Dearborn Heights Fire Dept
1999 N Beach Daly
Dearborn Heights, MI 48127

SHIP TO: Fire Dept
1999 N Beech Daly
Dearborn Heights, MI 48127-3487

Customer P.O.	Terms	Driver	Truck	Delivery Date	BOL Number
19-019	Net 30 Days		2112	09/24/24	BOL# 0000028964
Product			Delivered	Price per Unit	Amount
87 Regular Gasoline E10			724.50	2.667000	1,932.24

FEDERAL LUST TAX GAS	0.00100	0.72
FEDERAL OIL SPILL E-10	0.00193	1.40
MI ENVIRONMENTAL FEE GAS	0.01000	7.25
FEDERAL SUPERFUND FEE E-10	0.00364	2.64

OCT 08 2024

OK *O.K. to pay*
(335-867)

SUBJECT TO CORRECTION OF CLERICAL ERRORS. A service charge of 1.5% will be assessed to your account on all past due balances.

"DYED DIESEL/KEROSENE FUEL, NONTAXABLE USE ONLY. PENALTY FOR TAXABLE USE"

SUBTOTAL	1,944.25
SALES TAX	0.00
TOTAL	\$1,944.25



ARROW
DEXCEL
HUDSON RCI
LMA
Pilling

QuikClot
RUSCH
UROLIFT
WECK

Invoice

No. 9509028919 **Date** 10/01/2024 **Page** 1 of 2 **Due Date** 10/31/2024
Payer Account No. 1082771

Bill To Party Account No. 143320
Dearborn Heights Fire Department
1999 North Beech Daly Road
Dearborn Heights MI 48127-3487
USA

Ship To Party Account No. 1082771
Dearborn Heights Fire Department
ATTN: Hunter Moore
1999 North Beech Daly Road
Dearborn Heights MI 48127-3487
USA

Payment Remittance Address:

Teleflex LLC
c/o Teleflex Funding LLC
PO Box 936729
Atlanta, GA 31193-6729

Wire Transfer Remittance:

Teleflex LLC c/o Teleflex Funding LLC
Account No. 4708086079
Wells Fargo Bank, N.A.
Routing/ABA No. 121000248
SWIFT Code: WFBUS6S

Overnight Remittance Address:

Teleflex LLC
c/o Teleflex Funding LLC
Attn: PO Box 936729
3585 Atlanta Avenue
Hapeville, GA 30354-1705

Purchase Order No.	Sales Order No.	Order Placed By	Delivery No.	Carrier/Level of Service
050124HM	12159065	CITY OF DEARBORN	8012902530	UPS SUPPLY CHAIN SOLUTION
Tracking No.	Freight Terms	Incoterms	Payment Terms	Currency
1Z6069230389915013	See Detail Items	FOB Origin	Net 30	USD

Line	Material	Material Description	UOM	Shipped Qty	Back Order Qty	Unit Price	Total
000010	9079-VC-005	EZ-IO 45MM NEEDLE (BOX OF 5)	BX	2	0	550.00	1,100.00
Brand: Arrow		Batch No: 73290032					
		Exp. Date 03/31/2028					
Country of Origin		US					
		Freight Terms: Prepaid					
000020	9018-VC-005	EZ-IO 15MM NEEDLE (BOX OF 5)	BX	1	0	550.00	550.00
Brand: Arrow		Batch No: 69554778					
		Exp. Date 08/31/2028					
Country of Origin		US					
		Freight Terms: Prepaid					
000030	9001-VC-005	EZ-IO 25MM NEEDLE (BOX OF 5)	BX	2	0	550.00	1,100.00
Brand: Arrow							

All purchases are subject to Teleflex LLC's Terms and Conditions - Products (available at <https://www.teleflex.com/usa/en/legal/terms-and-conditions-of-sale/index.html>), which are incorporated herein by reference. The terms and conditions set forth in Teleflex LLC's special pricing agreement(s), order confirmation(s) and invoice(s) state the entire contract between the parties for the product purchased, including any discount or rebate program. Teleflex LLC shall not be bound by any different, additional or conflicting terms set forth in any customer purchase order or any other document presented in connection with the purchase of the products

Teleflex LLC

EIN: 83-1629418

For Inquiries:

Tel 866-246-6990

Email cs@teleflex.com www.teleflex.com



ARROW
DONALDSON
HUDSON RCI
LMA
TELEFLEX
QuikClot
RUSCH
URCLIFT
WECK

Invoice

No. 9509028919 Date 10/01/2024 Page 2 of 2 Due Date 10/31/2024
Payer Account No. 1082771

Line	Material	Material Description	UOM	Shipped Qty	Back Order Qty	Unit Price	Total
		Batch No: 73289991 Exp. Date 02/29/2028 Country of Origin US Freight Terms: Prepaid					
000040	9066-VC-005	EZ-STABILIZER(BOX OF 5)	BX	5	0	50.00	250.00
	Brand: Arrow						
		Batch No: 70849843 Exp. Date 06/05/2027 Country of Origin TW Freight Terms: Prepaid					

Comments:

The prices reflected on this invoice incorporate applicable discounts to Teleflex's list prices for the named products and may be subject to further discounts, rebates and/or warranties (if any) per your agreement with Teleflex. Consistent with 42 U.S.C. § 1320a-7b(b)(3)(A) and/or 42 C.F.R. § 1001.952(h), this disclaimer constitutes Teleflex's notice to you that you must fully and accurately report any reduced price received as a discount, rebate or warranty in applicable cost reports and agree to provide certain related information to state and federal agencies upon request as required by law or regulation.

Sub-Total	3,000.00
Freight Ground	15.50
Ship Savings	15.50-
Tax	0.00
Total USD	3,000.00

OCT 08 2024

O.K. to pay
(335-730-020)

All purchases are subject to Teleflex LLC's Terms and Conditions - Products (available at <https://www.teleflex.com/usa/en/legal/terms-and-conditions-of-sale/index.html>), which are incorporated herein by reference. The terms and conditions set forth in Teleflex LLC's special pricing agreement(s), order confirmation(s) and invoice(s) state the entire contract between the parties for the product purchased, including any discount or rebate program. Teleflex LLC shall not be bound by any different, additional or conflicting terms set forth in any customer purchase order or any other document presented in connection with the purchase of the products

Teleflex LLC

EIN: 83-1629418

For Inquiries:

Tel 866-246-6990

Email cs@teleflex.com www.teleflex.com

Packing List

Delivery No.
8012902530

Delivery Date
10/01/2024

Page
1 of 1

Sold To Party
1082771 Account No.

Dearborn Heights Fire Department
1999 North Beech Daly Road
Dearborn Heights MI 48127-3487
USA

Ship To Party
1082771 Account No.

Dearborn Heights Fire Department
ATTN: Hunter Moore
1999 North Beech Daly Road
Dearborn Heights MI 48127-3487
USA

Forwarding Agent
600033 Account No.

UPS SUPPLY CHAIN SOLUTION
700 KEYSTONE INDUSTRIAL PARK
DUNMORE PA 18512-1529

Purchase Order No.	Sales Order No.	Shipping Point	Freight Terms	IncoTerms
050124HM	12159065	Olive Branch Ship Point (Std)	Prepaid	FOB - Origin
Tracking No.	Container	Seal	Transportation	Vessel
1Z6069230389915013			UPS SUPPLY CHAIN SOLUTION	
Delivery Priority	Route			
01 UPS Ground	STDRT Standard Route			

Line	Material	Brand	Material Description	UOM	Order Qty.	Back Ord.	Quantity Shipped	Weight
10	9079-VC-005	Arrow	EZ-IO 45MM NEEDLE (BOX OF 5) Batch No. 73290032 03/31/2028	BX	2	0	<u>2</u>	0.800 LB
20	9018-VC-005	Arrow	EZ-IO 15MM NEEDLE (BOX OF 5) Batch No. 69554778 08/31/2028	BX	1	0	<u>1</u>	0.390 LB
30	9001-VC-005	Arrow	EZ-IO 25MM NEEDLE (BOX OF 5) Batch No. 73289991 02/29/2028	BX	2	0	<u>2</u>	0.780 LB
40	9066-VC-005	Arrow	EZ-STABILIZER (BOX OF 5) Batch No. 70849843 06/05/2027	BX	5	0	<u>5</u>	2.000 LB

Total Shipping Units: 00001
Weight: 4.470 LB

Unit of Measure Description:
BOX

Total Units:
10.000

Comments:

Customer Service:
Teleflex LLC
3015 Carrington Mill Blvd Morrisville, NC
27560 USA
Tel: 866-246-6990

Shipped/Title Transferred From:
Teleflex LLC
11245, N. Distribution Cove, Olive Branch, MS
38654 US
License #: 5306004099

The AccuMed Group

PAGE 1

INVOICE #: TAG-000575

DATE: 09/30/2024

Invoice Questions: (336)703-9986
Or email: jenn.johnson@emsmc.com

BILL TO: Dearborn Heights Fire Department
1999 N Beech Daly
DEARBORN HEIGHTS, MI 48127

PAYMENT TERMS	DUE DATE	CUSTOMER ID	PURCHASE ORDER NO.
Net 30	10/30/2024	C-1536	

ITEM #	DESCRIPTION	RECEIPTS	RATE	AMOUNT
MANAGEMENT SERVICES	Billing Service Fee (EMS)	151,582.87	0.0650	\$9,852.89
Subtotal				\$9,852.89
Payments/Credits				\$0.00
Total				\$9,852.89

Billing Period is: 09/01/24 - 09/30/24

Thank you for your continued business. We appreciate it very much
Please reference your Customer Number on your check.

Please remit payment to:
The AccuMed Group
PO Box 2122
Riverview, MI 48193

ACH Payments To:
Routing ABA Number: 272471852
Account Number: 137708262

OCT 14 2024

O.K. to pay
(335-818)

[Signature]



ACQUISITION SERVICES INVOICE

QUARTERLY CHARGES

41365 Vincenti Ct. Novi MI 48375
 248-536-3100 TLN.org
 W-9 Form: TLN.org/W9

Invoice Number: 75243
 Invoice Date: Oct 7, 2024
 Due Date: Nov 6, 2024
 Net 30 Days

Bill To:	DHTN #7
Dearborn Heights Caroline Kennedy Libra 24590 George Street Dearborn Heights, MI 48127 USA	

Description	Amount
CAROLINE KENNEDY:	
Materials Invoicing OCT24-DEC24	878.41
Subscription Ordering and Invoicing OCT24-DEC24	482.57
JOHN F. KENNEDY, JR.:	
Materials Invoicing OCT24-DEC24	693.39
Subscription Ordering and Invoicing OCT24-DEC24	353.29

Handwritten notes:
 10/9/2024
 738-131-0184
 etc 12/2021
 17A

Total Invoice Amount	2,407.66
Payment/Credit Applied	
TOTAL	\$ 2,407.66

Make Payment to: Bank Name: Chase, 43100 Grand River Avenue, Novi, MI 48375 Account Name: The Library Network Account Number: 2490134 Routing Number: 072000326 (must start with 0) Type: Checking

Please include invoice number with payment to "The Library Network".
A late fee of 1.5% is assessed on amounts over 60 days past due.



Libraries working together.

41365 Vincenti Ct. Novi MI 48375
248-536-3100 TLN.org

QUARTERLY TELECOM INVOICE

Invoice Number: 74457
Invoice Date: Sep 30, 2024
Due Date: Oct 30, 2024

W-9 Form: TLN.org/W9

Bill To:	DHTN #7
Dearborn Heights Caroline Kennedy Libra 24590 George Street Dearborn Heights, MI 48127 USA	

Description	Amount
Caroline Kennedy	
Circuit Speed 150M - JUL24-SEP24	1,078.88
Shared Fiber Cost - JUL24-SEP24	38.95
Internet Speed 150M - JUL24-SEP24	286.31
JFK Jr.	
Circuit Speed 100M - JUL24-SEP24	1,017.23
Shared Fiber Cost - JUL24-SEP24	38.95
Internet Speed 100M - JUL24-SEP24	190.87

10/9/2024
731-798-8271
CK FORM
MP

Credit Memo#:

Total Invoice Amount	2,651.19
Payment/Credit Applied	
TOTAL	\$ 2,651.19

Make Payment to:
Bank Name: Chase, 43100 Grand River Avenue, Novi, MI 48375
Account Name: The Library Network
Account Number: 2490134
Routing Number: 072000326 (must start with 0)
Type: Checking

Charges reflect actual pass through costs incurred by TLN.

*Please include invoice number with payment to "The Library Network". A late fee of 1.5% is assessed on amounts over 60 days past due.
Thank you!*



SHARED AUTOMATION SERVICE INVOICE **QUARTERLY CHARGES**

41365 Vincenti Ct. Novi MI 48375
 248-536-3100 TLN.org
 W-9 Form: TLN.org/W9

Invoice Number: 75182
 Invoice Date: Oct 4, 2024
 Due Date: Nov 3, 2024

Bill To:	DHTN #7
Dearborn Heights Caroline Kennedy Libra 24590 George Street Dearborn Heights, MI 48127 USA	

Description	Amount
SAS Basic Fee OCT24-DEC24	5,868.81
SAS Circulation Charges OCT24-DEC24	1,839.13
SAS Item Linked Charges OCT24-DEC24	2,665.71
10/7/2024 751-738-827.0 OK TO PAY 1713	

Total Invoice Amount	10,373.65
Payment/Credit Applied	
TOTAL	\$ 10,373.65

Make Payment to: Bank Name: Chase, 43100 Grand River Avenue, Novi, MI 48375 Account Name: The Library Network Account Number: 2490134 Routing Number: 072000326 (must start with 0) Type: Checking

Please include invoice number with payment to "The Library Network".
A late fee of 1.5% is assessed on amounts over 60 days past due.



SHARED TECHNOLOGY SERVICES

Annual Services/Licenses Renewal:

10/01/2024 - 09/30/2025

41365 Vincenti Ct. Novi MI 48375
248-536-3100 TLN.org
W-9 Form: TLN.org/W9

Invoice Number: 75012
Invoice Date: Oct 1, 2024
Due Date: Oct 31, 2024

Bill To:	DHTN #7
Dearborn Heights Caroline Kennedy Libra 24590 George Street Dearborn Heights, MI 48127 USA	

Quantity	Description	Unit Price	Amount
	*CK		
88.00	DeepFreeze Enterprise License Renewal	4.90	431.20
5.00	WinSelect Enterprise License Renewal	4.90	24.50
1.00	Email Accounts	46.00	46.00
1.00	Proofpoint Email Security	20.00	20.00
1.00	Public Web Browser License	50.00	50.00
1.00	OpenDNS Filter Support	25.00	25.00
1.00	OpenDNS License Subscription	200.00	200.00
125.00	PC Support Package-Hours	65.00	8,125.00
10.00	Network Support Package-Hours	80.00	800.00
	*JFK		
1.00	Public Web Browser License	50.00	50.00

Total Invoice Amount	Continued
Payment/Credit Applied	
TOTAL	Continued

Make Payment to:
Bank Name: Chase, 43100 Grand River Avenue, Novi, MI 48375
Account Name: The Library Network
Account Number: 2490134
Routing Number: 072000326 (must start with 0)
Type: Checking

**Please include invoice number with payment to "The Library Network".
A late fee of 1.5% is assessed on amounts over 60 days past due.**



SHARED TECHNOLOGY SERVICES

Annual Services/Licenses Renewal:

10/01/2024 - 09/30/2025

41365 Vincenti Ct. Novi MI 48375
248-536-3100 TLN.org
W-9 Form: TLN.org/W9

Invoice Number: 75012
Invoice Date: Oct 1, 2024
Due Date: Oct 31, 2024

Bill To:	DHTN #7
Dearborn Heights Caroline Kennedy Libra 24590 George Street Dearborn Heights, MI 48127 USA	

Quantity	Description	Unit Price	Amount
1.00	OpenDNS Filter Support	25.00	25.00
1.00	OpenDNS License Subscription	200.00	200.00
10.00	Network Support Package-Hours	80.00	800.00

Total Invoice Amount	10,796.70
Payment/Credit Applied	
TOTAL	\$ 10,796.70

Make Payment to:
Bank Name: Chase, 43100 Grand River Avenue, Novi, MI 48375
Account Name: The Library Network
Account Number: 2490134
Routing Number: 072000326 (must start with 0)
Type: Checking

**Please include invoice number with payment to "The Library Network".
A late fee of 1.5% is assessed on amounts over 60 days past due.**



Invoice

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Hts., MI 48127-

Invoice # 27622
Date 10/1/2024
Due Date 10/31/2024
P.O. No.
Rep House

Service Description	Quantity	Amount
Life Advisor Employee Assistance Program 2024 4th Quarter	200	1,590.00

Headcount = 200 provided 7/11/2023 from Cameron Eggly

Please Provide A Current Headcount/Census.

101-200-818.000
Approved 10/7/24

*LATE FEES MAY BE ASSESSED ON OUTSTANDING BALANCES IN EXCESS OF 30 DAYS.

REMEMBER TO REMIT PAYMENT ON TIME TO AVOID LATE CHARGES

PLEASE REMIT PAYMENT TO:
ULLIANCE, INC. 900 Tower Drive, Suite
600, Troy, MI 48098

Total \$1,590.00
Payments/Credits \$0.00
Balance Due \$1,590.00

Approved for the Agenda of:	REFERRED BACK TO ADMINISTRATION
10/22/2024	Motion No. 24-472

7.A.



Mayor's Office

TO: Honorable Mayor Bill Bazzi
Honorable City Council Members

FROM: Ali Dib, City Engineer

DATE: October 15, 2024

RE: City Engineer Dib - Bid Award - 2024-2026 Street Pavement Program Contract

Honorable Council Members:

Attached, please find the results of bids submitted for the 2024-2026 Street Pavement Program to the Comptroller's Office. With your concurrence, I am requesting that the City Council award the bid to A&G Construction & Remodeling LLC in the amount of \$2,622,180.00 (lowest bid + 10%).

Additionally, authorize the Mayor and the City Clerk to sign the contract.

Furthermore, please authorize the release of the bid bonds for the other bidders.

Sincerely,
Ali M. Dib, P.E.
City Engineer

Attachments:

1. 2024-26 STREET PAVEMENT PROGRAM REBID- BID TALLY (1)
2. RFP 2024-2026 Street Pavement Repair Program
3. Buyer Opinion
4. AUDIA CONCRETE
5. G.V CEMENT CONTRACTING
6. GREAT LAKES CONTRACTING
7. J.B CONTRACTORS
8. ROTONDO CONSTRUCTION
9. SANTOS CEMENT
10. A & G CONSTURCTION

CITY OF DEARBORN HEIGHTS



Name of Bid: 2024-26 Street Pavement Program Rebid

Bid Date 8/14/2024

Bidder	Bid Deposit	Bid Amount	Notes
Audia Concrete Construction, Inc P.O. Box 72 Milford, Michigan 48381	5% Bid Bond	\$2,661,260.00	Not Recommended - see comments from Buyer 10/2/2024
G.V Cement Contractng Company 20000 Dix-Toledo Brownstown, Michigan 48183	5% Bid Bond	\$3,641,500.00	
Great Lakes Contracting Solutions 2300 Edinburgh Waterford, Michigan 48328	5% Bid Bond	\$3,758,150.00	
J.B Contractors 2933 Military St. Detroit, Michigan 48209	5% Bid Bond	\$4,243,350.00	
Rotondo Construction Inc 20771 Randall St Farmington Hills, MI 48336	5% Bid Bond	\$3,804,500.00	
Santos Cement Inc 860 Southfield Road Lincoln Park, MI 48146	5% Bid Bond	\$3,584,320.00	
A & G Construction & Remodeling LLC 1938 Campbell Street, 2nd Floor Detroit, Mi 48209	5% Bid Bond	\$2,383,800.00	

CITY OF DEARBORN HEIGHTS

Bill Bazzi, Mayor



REQUEST FOR PROPOSAL

for

2024 - 2026 Street Pavement Program

Issue Date: August 5, 2024

Pre-proposal Question Deadline: August 12, 2024 at 12:00 p.m., Local Time

Proposal Deadline: August 14, 2024 at 3:00 p.m., Local Time

Advertised on www.bidnetdirect.com/mitn

Purchasing Contact: Mathew Paul, Buyer

Phone: (313) 791-3443

Email: mpaul@dearbornheightsmi.gov

Technical questions must be directed to the City Engineer Ali Dib P.E by email at:

adib@dearbornheightsmi.gov

DESCRIPTION: Proposals are being solicited for the purpose of contracting with a licensed construction contractor to provide as-needed concrete pavement replacement sections at various locations throughout the City of Dearborn Heights.

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Advertisement for Bids

2024-2026 Street and Sidewalk Repair
CITY OF DEARBORN HEIGHTS

Sealed Bids will be received by City of Dearborn Heights Comptroller's office, comptroller@dearbornheightsmi.gov or submit at <http://www.bidnetdirect/mitn> until 3:00 P.M., Local Time, Wednesday, August 14, 2024 for the following work:

Street and sidewalk repair associated with water main repair and road repair including aggregate base course, curbs and gutters, roads, sidewalks, drives, and associated structure adjustments and drainage pipe.

Contract Documents are on file with Lynne M. Senia, Clerk.

Copies of the Contract Documents for bidding purposes must be obtained online by registering (free registration available) on BidNet at www.bidnetdirect/mitn.

Each Proposal shall be accompanied by a certified check, cashier's check, money order, or bid bond, in the amount of at least five (5) percent of the amount bid, drawn payable to the City of Dearborn Heights as security for the proper execution of the Agreement.

The City of Dearborn Heights reserves the right to accept or reject any or all bids and to waive any informality in any bids should it consider same to be in its best interest.

Bids may not be withdrawn for the period of 60 days after date of receiving bids.

All inquiries shall be directed to Robert Conrad, Public Works Director at 313-791-6000.

Lynne M. Senia, Clerk
City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Instructions to Bidders:

Part 1 - General

1.01 Defined Terms

Terms used in these Instructions to Bidders have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to OWNER as distinct from a subbidder who submits a Bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom OWNER makes an award. The terms "OWNER" and "ENGINEER" are defined in the Supplementary Instructions to Bidders.

1.02 Scope of Work

The scope and location of Work are set forth in Section 011100, Summary of Work.

1.03 Bidders Qualifications

No Bid will be considered from any Bidder unless known to be skilled and regularly engaged in work of a character similar to that covered by the Contract Documents. In order to aid the OWNER in determining the responsibility of any Bidder, the Bidder, within 48 hours after being requested in writing by the OWNER to do so, shall furnish evidence, satisfactory to the OWNER, of the Bidder's experience and familiarity with Work of the character specified, and his financial ability to properly prosecute the proposed Work to completion within the specified time. The evidence requested may include, but shall not be limited to, the following:

- A. The address and description of the Bidder's plant or permanent place of business.
- B. The Bidder's performance records for all Work awarded to, or started by him within the past three years.
- C. An itemized list of the Bidder's equipment available for use on the proposed Contract.
- D. The Bidder's financial statement, including statement of ownership of equipment necessary to be used in executing Work under Contract.

- E. Evidence that the Bidder is authorized to do business in the state in which the project is located, in case of a corporation organized under the laws of any other state; and

- F. Such additional information as will satisfy the OWNER that the Bidder is adequately prepared to fulfill the Contract.

1.04 Examination of Contract Documents and Site

- A. It is the responsibility of each Bidder before submitting a Bid, to:

- (a) examine the Contract Documents thoroughly,

- (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work,

- (c) consider federal, state, and local Laws and Regulations that may affect cost, progress, performance, or furnishing of the Work; and

- (d) study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data; and

- (e) promptly notify ENGINEER in writing of all conflicts, errors, ambiguities or discrepancies which Bidder has discovered in or between Contract Documents and such related documents.

- B. Reference is made to the Supplementary Conditions for the identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparing the Contract Documents.

If such reports are not included as appendices to the Contract Documents, OWNER will make copies available to any Bidder requesting them. These reports are included for reference only

and are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents.

The Bidder may rely upon the general accuracy of the "technical data" contained in such reports but not upon other data, interpretations, opinions or information contained in such reports or otherwise relating to the subsurface conditions at the site, nor upon the completeness thereof for bidding or construction purposes.

Before submitting his Bid each Bidder will, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

- C. On request OWNER will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid. Bidder shall fill all holes and clean up and restore the site to its former conditions upon completion of such investigations and tests.
- D. The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in Section 01 1100, Summary of Work, or on the Plans.
- E. The locations of utilities as shown on the Plans are taken from sources believed to be reliable. Neither the OWNER nor the ENGINEER will be responsible for any omissions of, or variations from, the indicated location of existing utilities which may be encountered in the Work.
- F. The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 1.04, that without exception the Bid is based upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods,

techniques, sequences or procedures of construction (if any) that may be shown, indicated or required by the Contract Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in Contract Documents and the resolution by ENGINEER is acceptable to Bidder, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performing and furnishing the Work, and that the time stated in the Proposal is sufficient to complete the project.

1.05 Interpretations Addenda

Should any prospective bidder find discrepancies in, or omissions from the Plans, Specifications or other parts of the Contract Documents, he may submit a written request to the ENGINEER for an interpretation thereof. The person submitting the request will be held responsible for its prompt delivery at least seven (7) days prior to the date for opening of Bids. Questions received less than seven (7) days prior to the date for opening of bids will not be answered. Any interpretation of inquiry will be made by Addendum duly issued to all prospective bidders.

Any change in or addition to the Contract Documents deemed necessary by the OWNER shall be made in the form of an Addendum issued to all prospective bidders who have taken out Contract Documents and all such Addenda shall become a part of the Contract Documents as though same were incorporated into same originally. Oral explanations and information do not constitute official notification and are not binding.

1.06 Bid Security

- A. Bid Security shall be made payable to OWNER, in an amount of five (5) percent of the Bidder's maximum Bid price and in a form as indicated in the Advertisement. **Bid Bonds**, if indicated as acceptable in the Advertisement, shall be issued on the form included in the Contract Documents by a Surety meeting the requirements of paragraph 5.01 of the General Conditions.

- B. The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if the successful Bidder fails to execute and deliver the Agreement and furnish the required Contract Security within 15 days of the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earliest of the seventh day after the "Effective Date of Agreement" (which term is defined in the General Conditions) or the expiration of the hold period on the Bids. Bid Security of other Bidders will be returned within 14 days of the Bid opening, unless indicated otherwise in the Advertisement.

1.07 Contract Time

The number of days within which, or the date by which, the Work is to be Substantially Completed, if applicable, and also completed and ready for final payment (the Contract Time) are set forth in the Proposal and will be included in the Agreement.

1.08 Substitute and "Or-Equal" Items

The Contract, if awarded, will be on the basis of materials and equipment described in the Plans or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Plans or specified in the Specifications that a substitute or an "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of Agreement. In addition, in no case shall ENGINEER's denial of CONTRACTOR's application give rise to any claim for additional cost, it being understood by CONTRACTOR that acceptance of substitute or an "or equal" item of material is at the sole discretion of ENGINEER.

1.09 Receipt and Form of Bid

Bids shall be submitted at the time and place indicated in the Advertisement for Bids and shall be included in an opaque sealed envelope, marked with the Project title and name and address of the Bidder and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face thereof. Any Bid received after the scheduled time and place indicated in the Advertisement for Bids shall be returned unopened.

- A. The OWNER invites bids on the Proposal and other form(s) attached hereto. Bids will be received at the time and place indicated in the Advertisement and thereupon will be publicly opened and read. An abstract of the amounts of the base bids and any major alternates will be made available after the opening of Bids.
- B. The OWNER may consider as informal any Bid on which there is an alteration of, or departure from the Proposal Form attached hereto.
- C. The complete set of Contract Documents must be used in preparing Bids: neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents. In order to verify the completeness of the set of Contract Documents the Bidder used in preparing his Bid, the OWNER may require the Bidder to submit the set of Contract Documents he used in preparing his Bid. The Bidder shall submit his Bid on the separate Proposal form included in these Contract Documents.
- D. The Proposal shall be legibly prepared, with ink or typewriter, on the form included in these Contract Documents. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given. Proposals will be compared on basis of lump sum items, if any, and on product of the quantities of items listed at the respective unit prices bid.

- E. Erasures or other changes in the Bids must be explained or noted over the signature of the Bidder.
- F. All names must be typed or printed below the signature.
- G. The quantities as shown in the Proposal are approximate only and will be used as a basis of comparison of Bids, and award of Contracts. Payment will be made on basis of actual quantities of Work performed in accordance with the Contract Documents. The Unit Prices bid, shall include such amounts as the Bidder deems proper for overhead, profit, taxes, General Conditions and such other incidentals as noted in the Contract Documents.
- H. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Proposal Form.
- I. The Legal Status of Bidder Form contained in the Contract Documents must be submitted with each Proposal and must clearly state the legal position of a Bidder. In the case of a corporation, the home address, name and title of all officers must be given. In the case of a partnership, show names and home addresses of all partners. If an individual, so state. Any individual bid not signed by the individual must have attached, thereto, a power of attorney evidencing authority to sign.
- J. Other documents to be attached to the Proposal and made a condition thereof are identified in the Proposal. The same individual signing the Proposal shall sign these other documents.

1.10 Modifications and Withdrawal of Bids

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids. If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw

his Bid and the Bid Security will be returned. Thereafter, at the sole option of the OWNER, that Bidder will be disqualified from further Bidding on the Work to be provided under the Contract Documents.

1.11 Award of Contract

- A. OWNER reserves the right to reject any and all Bids for any reason, to waive any and all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, non-responsive, unbalanced, or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies in the multiplication of units of work and unit prices, will be resolved in favor of unit price. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- B. In evaluating Bids, OWNER shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data if requested in the Bid forms. It is OWNER's intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid form but OWNER may accept them in any order or combination.
- C. Subject to the approval of the OWNER, the Contract will be awarded to the lowest responsive and responsible Bidder. Responsibility of Bidder will be determined on basis of past performance and Work of similar character, equipment and labor available to do the Work and financial status. The Contract shall be considered to have been awarded after the approval of the OWNER has been duly obtained and a formal Notice of Award duly served on the successful Bidder by the OWNER. The Contract shall not be binding upon the OWNER until the Agreement has been duly executed by the Bidder and the duly authorized officials of the OWNER.

- D. If the Contract is to be awarded, OWNER will give the successful Bidder a Notice of Award within 60 days after the day of the Bid opening, unless such other time is specified in the Advertisement for Bids.

1.12 Signing of Agreement

Within 15 days after OWNER gives a Notice of Award to the successful Bidder, the CONTRACTOR shall sign and deliver the specified number of counterparts of the Agreement to OWNER with all other Contract Documents attached. Within ten (10) days thereafter, OWNER will deliver two (2) fully signed counterparts to CONTRACTOR. ENGINEER will identify, date or correct those portions of the Contract Documents not fully signed, dated or executed by OWNER and CONTRACTOR and such identification, dating or correction shall be binding on all parties.

Part 2 - Products (Not Used)

Part 3 - Execution (Not Used)

End of Section

Supplementary Instructions to Bidders

Part 1 General

1.01 Modifications

These Supplementary Instructions to Bidders amend or supplement the Instructions to Bidders as indicated below. All provisions which are not amended or supplemented remain in full force and effect.

The terms used in these Supplementary Instructions to Bidders have the meanings assigned to them in the Instructions to Bidders, General Conditions, and as follows:

- A. OWNER -- City of Dearborn Heights, 6045 Fenton Avenue, Dearborn Heights, MI 48127, a Municipal Corporation, and being a party of the first part of this Contract.
- B. ENGINEER -- City of Dearborn Heights, 6045 Fenton Avenue, Dearborn Heights, MI 48127, or his duly authorized representative.

SIB-1.09. Receipt and Form of Bid

Delete the first paragraph and subparagraph "A" of Article 1.09 of the Instructions to Bidders and insert the following in its place:

- A. Please follow these instructions carefully to submit a bid. Your bid may be considered non-responsive if it is not submitted as instructed below. Bids are considered received, when received by email at the Comptroller's Office or submitted at www.Bidnetdirect/mitn EBS option for registered users. Bids must be received as noted above before the specified due date and time; late bids will not be considered. Each bid must be submitted separately and electronically.
 - 1. Email Option - Scan your bid documents and email to comptroller@dearbornheightsmi.gov as an email attachment in either pdf or word format. In the email, please include the bid solicitation name, your company's address, telephone number and your contact information.
 - 2. Electronic Bid Submission Option - Login to Bidnetdirect website with your previously registered credentials at www.bidnetdirect/mitn You must be a registered user to participate in electronic bid submission.
 - a. Find City of Dearborn Heights solicitation you are bidding for.
 - b. Click on "Place a Bid" button.
 - c. Select "Place a new Bid" radio button and click on continue. The create bid interface opens.
 - d. Click on "Documents" tab, select add file. You have the option to drag & drop or browse your file. If you are using zip file, use zip file option. Selected files will appear in the file section. Once your files are uploaded, click on the Next button.
 - e. It will take you to the Pricing tab, and you will see a reminder to "don't forget to attach your pricing in the Documents section". Select Next button on the next screen in the "exception" section, select "No" or "Yes" In the "Bidder

- compliance & Authentication" section enter your complete name and password when prompted. Click on "Submit Bid" button.
- f. In the "bid submission confirmation" window select "No" or "yes" as your response.
 - g. Next screen will confirm your bid submission and you will receive a confirmation number for your records.
3. Bid Deposit - Each bid must be accompanied by a certified or cashier's check in the amount of 5% or 5% bid bond of the gross sum bid. You must submit a photocopy of the bid bond as part of your bid documents. If you choose to send a cashier's check instead, please mail to Comptroller's Office, City of Dearborn Heights, 6045 Fenton, Dearborn Heights, MI 48127 with the name of the bid, your complete address and contact information. Please mail your cashier's check at least 7 business days prior to the bid opening date to make sure it will reach Comptroller's Office at the time of bid opening

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Proposal

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Re: 2024-2026 Street and Sidewalk Repair

Gentlemen:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the City of Dearborn Heights in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents, (consisting of Project Manual) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM NO.	DATE OF RELEASE	SIGNATURE

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PROPOSAL (Continued)

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENACE AND CONTROL	LSUM	1			
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000			
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000			
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000			
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000			
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000			
7	EARTH EXCAVATION	CYD	10,000			
8	SUBGRADE UNDERCUTTING	CYD	6,000			
9	BASE COARSE AGGREGATE 21AA	CYD	10,000			
10	ADJUSTING STRUCTURE	EACH	100			
11	RECONSTRUCT STRUCTURE	VFT	500			
12	NEW FRAME AND COVER	EACH	500			
13	EDGE DRAIN, 6 INCH	LFT	1,800			
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000			
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000			
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500			
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500			
18	RESTORATION	LSUM	1			
19	JOINTS SEALING	LSUM	1			
20	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800			
					PROJECT TOTAL	

PROPOSAL (Continued)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will achieve Substantial Completed and Final Completion within the time limits as outlined in the Agreement.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Proposals may not be withdrawn for a period of 60 days after bid opening.

The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

- ☐ Certified Check
- ☐ Cashier's Check
- ☐ Money Order
- ☐ Bid Bond

b) Legal Status of Bidder.

PROPOSAL (Continued)

Bidder's Name _____

By _____

Address _____

Phone No. _____

Fax. No. _____

email _____

Agreement

This Agreement, made and entered into this _____ day of _____ in the year 2024 by and between City of Dearborn Heights hereinafter called OWNER, and _____ hereinafter called CONTRACTOR, in consideration of the mutual covenants hereinafter sent forth, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Street and sidewalk repair associated with road repair including aggregate base course, curbs and gutters, roads, sidewalks, drives, and associated structure adjustments and drainage pipe.

ARTICLE 2. CONTRACT TIME

2.1 This Work is a multi-year, indefinite quantity Contract. The Contract is for 2024, 2025 and 2026 construction seasons with an option for 2027. Work for each shall be completed by the end of each year as weather permits and ready for final payment in accordance with paragraph 14.11 of the General Conditions.

ARTICLE 3. CONTRACT PRICE

3.1 OWNER shall pay CONTRACTOR as provided in the attached Proposal for performance of the Work in accordance with the Contract Documents.

ARTICLE 4. PAYMENT PROCEDURES

Progress payments and retainage under this Contract are governed by the provisions of PA 1980, No. 524 (MCLA 125.1561 et seq.). That Act is incorporated herein by reference and made a part of this Contract. Without excluding any provisions of the Act from this Contract, but in order to comply therewith and summarize certain provisions, the following shall apply:

4.1 The person representing the CONTRACTOR who will submit written requests for progress payments shall be: _____

4.2 The person representing the OWNER to whom requests for progress payments are to be submitted shall be: Robert Conrad, Public Works Director

4.3 The CONTRACTOR's representative, listed above, shall submit Applications for Payment on the form provided in the Contract Documents in accordance with Article 14 of the General Conditions. Applications for Payment will be processed as provided in the General Conditions.

ARTICLE 5. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

5.1 CONTRACTOR has considered the nature and extent of the Contract Documents, Work, locality, and all local conditions and federal, state and local laws, and regulations that may affect cost, progress, performance, or furnishing of the Work.

5.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon in the preparation of the Plans and Specifications and which have been identified in the Supplementary Conditions.

5.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in paragraph 5.2 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

5.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

5.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Contract between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

6.1 Procurement Requirements (including the Advertisement for Bids, Instructions to Bidders, Supplementary Instructions to Bidders, Proposal, Legal Status of Bidder, and other Documents listed in the Table of Contents thereof).

6.2 This Agreement

6.3 Performance and other Bonds

6.4 Notice of Award

6.5 Notice to Proceed (if issued)

6.6 Conditions of the Contract (including General Conditions and Supplementary Conditions, if any)

6.7 Modifications to the Standard Specifications contained in Section 00 9120, Standard Specification Section Revisions.

6.8 Specifications contained within Division 01 through 49

6.09 Addenda numbers ____to ____, inclusive

6.10 Documentation submitted by CONTRACTOR prior to Notice of Award

6.11 Any Modification, including Change Orders, duly delivered after execution of Agreement.

ARTICLE 7. MISCELLANEOUS

7.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.

7.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on any other party without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

7.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

7.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in four (4) counterparts. Two (2) counterparts each have been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on _____, 20____.

OWNER City of Dearborn Heights

CONTRACTOR _____

By _____

By _____

Attest _____

Attest _____

Address for giving notices

Address for giving notices

License No. _____

Agent for service of process: _____

Section 00 7200 General Conditions

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Article 1 Definitions

1.01 Defined Terms

- A. Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:
1. Addenda -- Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Contract Documents.
 2. Agreement -- The written Agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.
 3. Application and Certificate for Payment -- The form included in the Contract Documents which is to be used by CONTRACTOR in requesting progress or final payment and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. Bid -- The offer or proposal of the bidder submitted on the prescribed form setting forth the price(s) for the Work to be performed.
 5. Bidding Requirements -- The Advertisement for Bids, Instructions to Bidders, Supplementary Instructions to Bidders, Proposal, Legal Status of Bidder, Bid Bond, and any other documents identified in the Proposal, to be submitted with the Bid.
 6. Bonds -- Bid, Performance and Payment bonds and other instruments of security.
 7. Change Order -- A written order to CONTRACTOR, reviewed by the ENGINEER and signed by OWNER, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Price or the Contract Time. The Contract Price and Contract Time may be changed only by Change Order. A Change Order signed by CONTRACTOR indicates his agreement therewith, including that the Change Order constitutes a final adjustment in the Contract Price or Contract Time for all issues addressed or described in the Change Order.
 8. Change Proposal -- A written request by CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by ENGINEER concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 9. Claims --

- a. A demand or assertion by OWNER directly to CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by ENGINEER concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting ENGINEER's decision regarding a Change Proposal; seeking resolution of a contractual issue that ENGINEER has declined to address; or seeking other relief with respect to the terms of the Contract.
 - b. A demand or assertion by CONTRACTOR directly to OWNER, duly submitted in compliance with the procedural requirements set forth herein, contesting ENGINEER's decision regarding a Change Proposal, or seeking resolution of a contractual issue that ENGINEER has declined to address.
 - c. A demand or assertion by OWNER or CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, arising after ENGINEER has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
- 10. Constituents of Concern -- Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
- 11. Contract -- The entire and integrated written contract between OWNER and CONTRACTOR concerning the Work
- 12. Contract Documents -- Those items so designated in the Agreement, and which together comprise the Contract.
- 13. Contract Price -- The monies or other considerations payable by OWNER to CONTRACTOR for completion of acceptable Work in accordance with the Contract Documents as stated in the Agreement.
- 14. Contract Time -- The number of days or the date stated in the Agreement:
 - a. to achieve Substantial Completion of all or any specified portions of the Work, and;
 - b. to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.11.
- 15. CONTRACTOR -- The person, firm or corporation with whom OWNER has entered into the Agreement.
- 16. Cost of the Work -- The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined in paragraph 12.01.

17. Day -- A calendar day of 24 hours measured from midnight to the next midnight.
18. Defective -- An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.
19. Drawings -- See Plans.
20. Effective Date of Agreement -- The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
21. Electronic Document -- Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
22. Electronic Means -- Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow:
 - a. the transmission or communication of Electronic Documents;
 - b. the documentation of transmissions, including sending and receipt;
 - c. printing of the transmitted Electronic Document by the recipient;
 - d. the storage and archiving of the Electronic Document by sender and recipient; and
 - e. the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
23. ENGINEER -- The person, firm, or corporation identified in the Supplementary Instructions to Bidders hired by OWNER to prepare Plans and Specifications for the Project and to assist OWNER in interpreting Plans and Specifications during the performance of the Work. ENGINEER's authority and responsibility are set forth in the Contract between OWNER and ENGINEER. CONTRACTOR acknowledges and agrees that ENGINEER's obligations and duties under ENGINEER's contract with OWNER are obligations and duties to OWNER only, and ENGINEER has no independent obligation to CONTRACTOR of any kind, including but not limited to providing services, or to take any action or to refrain from taking action on behalf of CONTRACTOR or any Subcontractor, Sub-Subcontractor or Supplier.
24. Field Order -- A written order issued by ENGINEER which clarifies or interprets the Contract Documents or orders minor changes in the Work in accordance with paragraphs 9.04 and 9.05 but which does not involve a change in the Contract Price or the Contract Time.

25. Hazardous Environmental Conditions -- The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
- a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
26. Laws and Regulations; Laws or Regulations Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.
27. Lump Sum -- Construction Work where the OWNER pays a single stipulate price (Lump Sum) for the entire scope of Work; plus or minus alternates and/or allowances. However, unit prices may be required for individual items of Work for the purposes of changes, additions, or deletions.
28. Milestone -- A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of the Work.
29. Notice of Award -- The written notice by OWNER to the apparent successful Bidder stating that, upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.
30. Notice to Proceed -- A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligation under the Contract Documents.
31. OWNER -- The public body or authority, corporation, limited liability company, association, partnership, or individual with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided and as identified in the Supplementary Instructions to Bidders.
32. Partial Utilization -- Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.
33. Plans -- The part of the Contract Documents which graphically show the extent, character and Scope of the Work to be furnished and performed by CONTRACTOR and which have been prepared or approved by the ENGINEER or OWNER; sometimes also referred to as Drawings.

34. Progress Schedule -- A schedule, prepared and maintained by CONTRACTOR, describing the sequence and duration of the activities comprising CONTRACTOR's plan to accomplish the Work within the Contract Times.
35. Project -- The total construction of which the Work to be provided under the Contract Documents may be the whole or a part as indicated elsewhere in the Contract Documents.
36. Project Manual -- The volume assembled for the Project which may include, among other parts, Procurement Requirements, Contracting Requirements and Specifications.
37. Proposal -- The offer or bid of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
38. Radioactive Material -- Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 as amended.
39. Resident Project Representative -- The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.
40. Samples -- Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
41. Schedule of Submittals -- A schedule, prepared and maintained by CONTRACTOR, of required Submittals and the time requirements for ENGINEER's review of the Submittals.
42. Schedule of Values -- A schedule, prepared and maintained by CONTRACTOR, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing CONTRACTOR's Applications for Payment.
43. Shop Drawings -- All drawings, diagrams, illustrations, schedules and other data or information required by the Contract Documents which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.
44. Site -- Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by OWNER which are designated for the use of CONTRACTOR.
45. Specifications -- That part of the Contract Documents which consist of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.
 - a. Project Specifications are those portions of the Contract Documents which have been prepared specifically for this Project and which are identified by the job number in the lower right-hand corner of each page.
 - b. Standard Specifications are Specification sections that are the same from Project to Project as of the revision date shown in the lower left-hand corner of the page.

- c. Standard Specification Section Revisions -- Section 00 9120 of the Specifications which amends or supplements the Standard Specification Sections.
- 46. Subcontractor -- An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.
- 47. Submittal -- A written or graphic document, prepared by or for CONTRACTOR, which the Contract Documents require CONTRACTOR to submit to ENGINEER, or that is indicated as a Submittal in the Schedule of Submittals accepted by ENGINEER. Submittals may include Shop Drawings and Samples; schedules; product data; OWNER-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by ENGINEER, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
- 48. Substantial Completion -- The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by the Certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.11. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
- 49. Supplementary Conditions -- The part of the Contract Documents which amends or supplements these General Conditions.
- 50. Supplementary Instructions to Bidders -- The part of the Contract Documents which amends or supplements the Instructions to Bidders.
- 51. Supplier -- A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with CONTRACTOR, or with any Subcontractor, or with OWNER, to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.
- 52. Unit Price -- Construction Work where the OWNER pays a fixed sum (Unit Price) per each completed unit of Work. Units are listed on the Proposal Form.

- 53. Utilities – Underground or above ground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any structures or encasements containing such facilities, which have been installed to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, water or other liquids or chemicals.
- 54. Work -- The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.
- 55. Work Change Directive -- A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and reviewed by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.03 or to emergencies under paragraph 6.18. A Work Change Directive will not change the Contract Price or Contract Time but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.01.

1.02 Terminology

- A. The following words, terms, or phrases are not defined but, when used in the Contract Documents, have the following meaning:
 - 1. Whenever in the Contract Documents the terms “as ordered,” “as directed,” “as required,” “as allowed,” “as approved” or terms of like effect or import are used; or the adjectives “reasonable,” “suitable,” “acceptable,” “proper” or “satisfactory” or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the technical requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.
 - 2. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

3. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 4. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 5. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.
- B. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

Article 2 Preliminary Matters

2.01 Delivery of Bonds and Insurance

- A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds and Insurance Certificates and other evidence of Insurance requested as CONTRACTOR may be required to furnish in accordance with Article 5. No Work at the site may begin or progress payments made to CONTRACTOR until all Bonds and Insurance Certificates in the form and substance required in Article 5 have been submitted and approved by OWNER.

2.02 Copies of Documents

- A. OWNER shall furnish to CONTRACTOR up to 5 copies of the Contract Documents (including at least one fully signed counterpart of the Agreement) as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.03 Commencement of Contract Time; Notice to Proceed

- A. Time is of the essence in the performance of the Work. The Contract Time will commence to run on the 30th day after the effective date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the effective date of the Agreement. In no event will the Contract Time commence to run later than the 30th day after the effective date of the Agreement. Time limits stated in the Contract Documents are of the essence of the Agreement.

2.04 Starting the Project

- A. CONTRACTOR shall start to perform the Work within 10 days of when the Contract Time commences to run, but no Work shall be done at the Site prior to the date on which the Contract Time commences to run. CONTRACTOR shall notify the ENGINEER at least 3 working days in advance of the time he intends to start Work.

2.05 Preconstruction Meeting

- A. Within 10 days of the Effective Date of the Agreement and prior to the delivery of materials or the start of any construction, the CONTRACTOR shall request a Preconstruction Meeting from ENGINEER. A minimum of 3 full working days' notice shall be required.

- B. Prior to the scheduling of the Preconstruction Meeting, CONTRACTOR shall submit to ENGINEER for review:
 - 1. A preliminary Progress Schedule indicating the starting and completion dates of the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. A preliminary Schedule of Submittals which will list each required Submittal and the times for submitting, reviewing and processing such Submittal;
 - 3. An estimated monthly payment schedule, and a preliminary Schedule of Values for all of the Work.
- C. The Preconstruction Meeting will be held for review and acceptance of the schedules, to establish procedures for handling Shop Drawings and other Submittals, for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

2.06 Electronic Transmittals

- A. Except as otherwise stated elsewhere in the Contract, the OWNER, ENGINEER, and CONTRACTOR may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then OWNER, ENGINEER, and CONTRACTOR shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

Article 3 Contract Documents Intent and Reuse

3.01 Intent

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. ENGINEER will issue clarifications and interpretations of the Contract Documents as provided herein.

- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon OWNER and CONTRACTOR, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between OWNER or ENGINEER and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations; or
 - 3. any obligation on the part of ENGINEER to CONTRACTOR.

3.02 Reference to Standards and Specifications of Technical Societies

- A. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, or Laws or Regulations in effect at the time of opening of Bids or, on the effective date of the Agreement if there were no Bids, except as may be otherwise specifically stated in the Contract Documents.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result shall be furnished and performed whether or not it is specifically called for.
- C. No provision of any standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, ENGINEER or any of ENGINEER's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.10 or any other provision of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

- A. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR has a duty to and shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR should reasonably have discovered and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby.

- B. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.18) until receiving written instruction or clarification from ENGINEER or OWNER. However, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.
- C. Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement issued by one of the methods indicated in paragraph 3.05, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and;
 - 1. the provisions of any standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - 2. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Requirements of Contract Documents

- A. During the performance of the Work and until final payment, CONTRACTOR and OWNER shall submit to the ENGINEER in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. ENGINEER will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.
- B. ENGINEER will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. ENGINEER's written clarification, interpretation, or decision will be final and binding on CONTRACTOR, unless it appeals by submitting a Change Proposal, and on OWNER, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve
 - 1. the performance or acceptability of the Work under the Contract Documents,
 - 2. the design (as set forth in the Drawings, Specifications, or otherwise), or
 - 3. other engineering or technical matters, then ENGINEER will promptly notify OWNER and CONTRACTOR in writing that ENGINEER is unable to provide a decision or interpretation. If OWNER and CONTRACTOR are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in paragraph 11.01.

3.05 Order of Precedence

- A. In resolving conflicts, errors or discrepancies between Plans and Specifications,
 - 1. figured dimensions shall govern over scaled dimensions;
 - 2. Plans shall govern over Standard Specifications;
 - 3. and Project Specifications shall govern over Standard Specifications and Plans.

3.06 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:
 - 1. a Field Order (pursuant to paragraph 9.05), or,
 - 2. a Change Order (pursuant to paragraph 10.01.A.1), or
 - 3. a Work Change Directive Order (pursuant to paragraph 10.01.A.2)
- B. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:
 - 1. a Field Order (pursuant to paragraph 9.05),
 - 2. ENGINEER's review of a Shop Drawing or Sample (pursuant to paragraph 6.21), or
 - 3. ENGINEER's written interpretation or clarification (pursuant to paragraph 9.04).

3.07 Reuse of Documents

- A. Neither CONTRACTOR nor any Subcontractor, manufacturer, fabricator, Supplier, distributor, or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER:
 - 1. shall have or acquire any title to or ownership rights in any of the Plans, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, and
 - 2. they shall not reuse any of such Plans, Specification, other documents or copies on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

3.08 Electronic Data

- A. Except as otherwise stated elsewhere in the Contract Documents, OWNER, ENGINEER and CONTRACTOR may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information and graphics, including but not limited to Shop Drawings and other Submittals, in electronic media or digital format, either directly or through access to a secure Project website.
- B. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

Article 4 Availability of Lands; Subsurface and Physical Conditions; Reference Points

4.01 Availability of Lands

- A. OWNER shall furnish, as indicated in the Contract Documents and not later than the established date for beginning Work on the Contract, the lands upon which the Work is to be performed, rights of way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. OWNER shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment unless otherwise provided in the Contract Documents.

4.02 Subsurface and Physical Conditions; Investigations and Reports

- A. Reference is made to the Supplementary Conditions for identification of those reports of investigations and tests of subsurface and physical conditions at the Site or otherwise affecting cost, progress or performance of the Work which have been reviewed in preparation of the Contract Documents. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents.
 - B. The locations of utilities or other physical conditions relating to existing surface or subsurface structures at or contiguous to the Site as shown on the Plans are taken from drawings from sources believed to be reliable. Neither the OWNER nor ENGINEER will be responsible for any omissions of, or variations from, the indicated location of existing utilities which may be encountered in the Work.
 - C. CONTRACTOR shall draw its own conclusions as to the general accuracy of the "technical data" contained in such reports and drawings, and confirms such reports and drawings are not Contract Documents. CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:
 - a. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto, or
 - b. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or
 - c. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.
2. The cost of all the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for:
- a. reviewing and checking all such information and data,
 - b. locating all Utilities during construction,

- c. coordination of the Work with the owners of such Utilities, and
- d. the safety and protection of all such Utilities as provided in paragraph 6.15 and repairing any damage thereto resulting from the Work.

4.03 Unforeseen Physical Conditions

- A. A. If CONTRACTOR discovers one or both of the following physical conditions of surface or subsurface at the Project or improvement Site, before disturbing the physical condition, the CONTRACTOR shall immediately notify OWNER and ENGINEER of the physical condition; and follow up within 48 hours in writing:
 - 1. A subsurface or a physical condition at the Site differing materially from those indicated in the Contract Documents, or
 - 2. An unknown physical condition at the Site of a nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for the improvement project.
- B. ENGINEER's Review. After receipt of written notice as required by the preceding paragraph, ENGINEER will promptly review the subsurface or physical condition in question; determine the necessity of OWNER's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in paragraph 4.03.A above; obtain any pertinent cost or schedule information from CONTRACTOR; prepare recommendations to OWNER regarding the CONTRACTOR's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise OWNER in writing of ENGINEER's findings, conclusions, and recommendations.
- C. OWNER's Statement to CONTRACTOR Regarding Site Condition. After receipt of ENGINEER's written findings, conclusions, and recommendations, OWNER shall issue a written statement to CONTRACTOR (with a copy to ENGINEER) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting ENGINEER's written findings, conclusions, and recommendations, in whole or in part.
- D. Possible Price and Times Adjustments.
 - 1. CONTRACTOR shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in paragraph 4.03.A;
 - b. with respect to Work that is paid for on a Unit Price basis, any adjustment in Contract Price will be subject to the provisions of paragraph 12.03; and

- c. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times pursuant to paragraph 10.05.
- 2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. CONTRACTOR knew of the existence of such condition at the time CONTRACTOR made a commitment to OWNER with respect to Contract Price and Contract times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such commitment; or
 - c. CONTRACTOR failed to give the written notice as required by paragraph 4.03.A.
- 3. If OWNER and CONTRACTOR agree regarding CONTRACTOR's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order or Work Change Directive.
- 4. CONTRACTOR may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after OWNER's issuance of the OWNER's written statement to CONTRACTOR regarding the subsurface or physical condition in question.

4.04 Utilities

- A. CONTRACTOR's Responsibilities. The information and data shown or indicated in the Contract Documents with respect to existing Utilities at or adjacent to the Site, if any, is based on information and data furnished to OWNER or ENGINEER by the owners of such Utilities, including OWNER, or by others.
 - 1. OWNER and ENGINEER do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 - 2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Utilities at the Site;
 - b. locating all Utilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including OWNER) of such Utilities, during construction; and

- d. the safety and protection of all existing Utilities at the Site, and repairing any damage thereto resulting from the Work.
- B. Notice by CONTRACTOR. If CONTRACTOR believes that an Utilities that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.18), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER.
- C. ENGINEER's Review. ENGINEER will:
 - 1. promptly review the Utilities and conclude whether such Utilities was not shown or indicated in the Contract Documents,
 - 2. or was not shown or indicated with reasonable accuracy;
 - 3. obtain any pertinent cost or schedule information from CONTRACTOR;
 - 4. prepare recommendations to OWNER regarding the CONTRACTOR's resumption of Work in connection with the Utilities in question;
 - 5. determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Utilities;
 - 6. and advise OWNER in writing of ENGINEER's findings, conclusions, and recommendations.

During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.
- D. OWNER's Statement to CONTRACTOR Regarding Utilities. After receipt of ENGINEER's written findings, conclusions, and recommendations, OWNER shall issue a written statement to CONTRACTOR (with a copy to ENGINEER) regarding the Utilities in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting ENGINEER's written findings, conclusions, and recommendations in whole or in part.
- E. Possible Price and Times Adjustments:
 - 1. CONTRACTOR shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Utilities at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Utilities in question;
 - b. With respect to Work that is paid for on a Unit Price basis, any adjustment in Contract Price will be subject to the provisions of paragraph 12.03;

- c. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times; and
 - d. CONTRACTOR gave the notice required in paragraph 4.04.B.
- 2. If OWNER and CONTRACTOR agree regarding CONTRACTOR's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
- 3. CONTRACTOR may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after OWNER's issuance of the OWNER's written statement to CONTRACTOR regarding the Underground Facility in question.

4.05 Reference Points

- A. OWNER shall provide engineering surveys for construction to establish property corners, monuments, bench marks and similar reference points which in his judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for the preservation of established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. Reference points destroyed by negligence of CONTRACTOR will be replaced by OWNER at the expense of CONTRACTOR. Construction Staking will be furnished by OWNER as provided in Division 01 of the Specifications.

4.06 Constituents of Concern

- A. OWNER shall be responsible for any Constituents of Concern uncovered or revealed at the Site which was not shown or indicated in Plans or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the Site. OWNER shall not be responsible for any such materials brought to the Site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.
- B. Upon discovering any such material, CONTRACTOR shall immediately:
 - 1. stop all Work in connection with such Hazardous Environmental Condition and in any area affected thereby (except in emergency as required by paragraph 6.18), and
 - 2. notify OWNER and ENGINEER (and thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such Hazardous Environmental Condition or take corrective action, if any.
- C. CONTRACTOR shall not be required to resume Work in connection with such Hazardous Environmental Condition or in any such affected areas until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice:

1. specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or
 2. specifying any special conditions under which such Work may be resumed safely.
- D. If OWNER and CONTRACTOR cannot agree as to entitlement to, or the amount, or extent of an adjustment, if any, in Contract Price or Contract Terms as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a Claim therefor as provided in paragraph 11.01.
- E. If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such condition, or in such affected area, to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to, or the amount, or extent of an adjustment, if any, in Contract Price or Contract Time as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 11.01. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with paragraph 7.01.
- F. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents, other consultants and subcontractors of each and any of them from and against all claims, costs, losses, damages and expenses arising out of or resulting from such condition per this paragraph 4.06, provided that:
1. any such claim, cost, loss or damage is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and
 2. nothing in this paragraph 4.06 shall obligate OWNER to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.
- G. The provisions of paragraph 4.03 are not intended to apply to the presence of Constituents of Concern or Hazardous Environmental Conditions uncovered or revealed at the Site.

Article 5 Bonds and Insurance

5.01 Performance and Other Bonds

- A. CONTRACTOR shall furnish performance and payment Bonds, on the form included in the Contract Documents, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until 1 year after the date when final payment becomes due, except as otherwise provided by Laws and Regulations or as specified in the Contract Documents or Bond. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions.
- B. All Bonds shall be in the forms prescribed by the Contract Documents and be executed by such Sureties as

1. are licensed to conduct business in the state where the Project is located, and
 2. are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch.
- C. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.
- D. If Surety on any Bond furnished by CONTRACTOR is declared as bankrupt or becomes insolvent, or its right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of clauses (1) and (2) of paragraph 5.01, CONTRACTOR shall within 5 days thereafter substitute another Bond and Surety, both of which shall be acceptable to OWNER.

5.02 Licensed Insurers and Sureties

- A. Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required.

5.03 Insurance

- A. CONTRACTOR shall purchase and maintain during the term of the Project such insurance as will protect him, OWNER(s) and ENGINEER(s) from Claims arising out of the Work described in this Contract and performed by CONTRACTOR, Subcontractor(s) or Sub subcontractor(s) consisting of:
1. Workers' Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation Statutes of the states in which Work is conducted under this Contract; disability benefit laws, if any; or Federal compensation acts such as U.S. Longshoremen or Harbor Workers', Maritime Employment, or Railroad Compensation Act(s), if applicable. Self-insurance plans approved by the regulatory authorities in the state in which Work on this Project is performed are acceptable.
 2. An occurrence form Commercial General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, plus appropriate endorsements to protect OWNER and ENGINEER against Claims, demands, and lawsuits from employees of CONTRACTOR and Subcontractors, including the following exposures:
 - a. All premises and operations.
 - b. Explosion, collapse and underground damage.
 - c. CONTRACTOR's Protective coverage for independent contractors or Subcontractors employed by him.

- d. Broad form blanket, contractual liability for the obligation assumed in the Indemnification or Hold Harmless agreement found in the General Conditions or Supplementary Conditions of this Contract.
 - e. Personal Injury Liability endorsement with no exclusions pertaining to employment.
 - f. Products and Completed Operations coverage. Coverage shall extend through the Contract guarantee period.
 - g. Broad form property damage.
 - h. Cross liability endorsement.
 - i. For design professional additional insureds, ISO Endorsement CG 20 32 04 13, "Additional Insured-Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- 3. Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles. Comprehensive General Liability and the Comprehensive Auto Liability shall be written by the same insurance carrier, though not necessarily in one policy.
 - 4. CONTRACTOR shall purchase for OWNER an Owner's Protective Liability policy to protect OWNER, ENGINEER, their consultants, agents, employees and such public corporations in whose jurisdiction the Work is located for their liability for Work performed by the CONTRACTOR, the Subcontractor(s) or the Sub subcontractor(s) under this Contract.
 - 5. When a limit of liability is identified in the Supplementary Conditions, CONTRACTOR shall purchase a Builder's Risk Installation Floater in a form acceptable to OWNER covering property of the Project for the full cost of replacement as of the time of any loss which shall include, as named insureds,
 - a. CONTRACTOR,
 - b. all Subcontractors,
 - c. all Sub subcontractors,
 - d. OWNER, and ENGINEER(s) or Architect(s), as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this Contract, whether in place, stored at the Site, stored elsewhere, or in transit at the risk of the insured(s).

Coverage shall be effected on an "All Risk" form including, but not limited to, the perils of fire, wind, vandalism, collapse, theft, flood and earthquake, with removal of passive design error exclusion. Except as may otherwise be required by OWNER, CONTRACTOR may arrange for such deductibles as CONTRACTOR deems to be within CONTRACTOR's ability to self-assume, but CONTRACTOR will be held solely responsible for the amount of such deductible and for any co-insurance penalties. Any insured loss shall be adjusted with OWNER and CONTRACTOR and paid to OWNER and CONTRACTOR as Trustee for the other insureds.

6. Umbrella or Excess Liability

- a. The CONTRACTOR is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to CONTRACTOR's General Liability and Automobile Liability Insurance and shall be written on an occurrence basis.

7. Railroad Protective Liability

- a. Where any of the Work is within a railroad right-of-way or where a limit of liability is identified in the Supplementary Conditions, CONTRACTOR will provide coverage in the name of each railroad company having jurisdiction over rights of way across which Work under the Contract is to be performed. The form of policy and the limits of liability shall be determined by the railroad company(ies) involved. See the Supplementary Conditions for limits and coverage requested.

8. CONTRACTOR's Professional Liability Insurance

- a. If CONTRACTOR will provide or furnish professional services under this Contract through a delegation of professional design services or otherwise, then CONTRACTOR shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against Claims arising out of performance of professional design or related services caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by CONTRACTOR itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

B. OWNER's responsibilities in respect of purchasing and maintaining insurance are set forth below:

- 1. OWNER shall assume responsibility for such boiler and machinery insurance as may be required or considered to be necessary by OWNER in the course of construction, testing or after completion.

- a. OWNER shall assume responsibility for such insurance as will protect the OWNER against any loss of use of OWNER's property due to those perils insured pursuant to paragraph 1 above.

5.04 Limits of Liability

- A. The required limits of liability for insurance coverages required in paragraphs 5.03 shall be not less than those specified in the Supplementary Conditions.

5.05 Notice of Cancellation or Intent Not to Renew

- A. Policies will be endorsed to provide that at least 30 days written notice shall be given to OWNER and to ENGINEER of cancellation, intent not to renew, or material modification of the coverage.

5.06 Evidence of Coverage

- A. Prior to commencement of the Work, CONTRACTOR shall furnish to OWNER and ENGINEER, Certificates of Insurance in force on current Accord® Certificate of Insurance form. Other forms of Certificate are acceptable only if;
 - 1. they include all of the items prescribed in the current Accord® Certificate of Insurance form, including agreement to cancellation provisions outlined in paragraph 5.05 above; and
 - 2. they have approval of OWNER and ENGINEER.
- B. Prior to the commencement of the Work, CONTRACTOR shall furnish to OWNER complete "originally signed" copies of the Owner's Protective Liability Policy. The number of copies shall be the same as the number of counterparts of the Agreement. OWNER reserves the right to request complete copies of other policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "Originally Signed Copies," and so designated.

5.07 Qualification of Insurers

- A. In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the state in which the Project is located and shall have a financial rating not lower than XI and a policyholder's service rating no lower than B+ as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than B+:XI will be acceptable only upon written consent of OWNER.

5.08 Damage Claims - Acknowledgment and Reports

- A. CONTRACTOR shall furnish to OWNER an acknowledgment receipt from the insurance carrier for each damage claim against the Project. The receipt shall include the insurance carrier's assigned claim number.
- B. Upon request, CONTRACTOR or his insurance carrier shall also furnish to OWNER a status report on all damage claims. This report shall include inspections made, the disposition of claims, and what action has been taken towards settlement of each claim.
- C. Failure of CONTRACTOR to comply with this paragraph 5.08 may result in the amount of such damage claims being withheld from CONTRACTOR's monthly pay estimate. Such withholding shall be reimbursed in the monthly pay estimate following compliance with this paragraph.

5.09 Cost of Insurance

- A. The unit cost of the insurance herein specified will not be a specific bid item, but the cost of such insurance will be included by the CONTRACTOR in the various prices bid.

5.10 Waiver of Rights

- A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.03 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants (and all other persons or entities identified in the Supplementary General Conditions to be listed as insureds or additional insureds in such policies) and will provide primary coverage for all losses and damages caused by the perils covered thereby. Such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder.
- B. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary General Conditions to be listed as insureds or additional insureds under such policies for loss and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11 Receipt and Application of Insurance Proceeds

- A. Any insured loss under the policies of insurance required by paragraph 5.03.A.5 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause. If no other special agreement is reached the damaged Work shall be repaired or replaced, the monies so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order, Field Order or Work Change Directive.
- B. OWNER as fiduciary shall have power to adjust and settle any loss under the policies required by paragraph 5.03.A.5 with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers.

Article 6 CONTRACTOR's Responsibilities

6.01 Supervision and Superintendence

- A. CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to see that the finished Work complies with the Contract Documents. However, if specific means, methods, techniques, sequences and procedures of construction are prescribed in the Plans or Specifications, CONTRACTOR shall be responsible to comply therewith, but may implement such prescribed Work in a manner of CONTRACTOR's choosing so long as the Work complies with the requirements of the Plans and Specifications.

- B. At all times during the progress of the Work, CONTRACTOR shall assign and maintain a competent superintendent who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. Any superintendent or foreman who neglects to have Work done in accordance with the Plans and Specifications shall be removed from the Project. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

6.02 Labor and Working Hours

- A. CONTRACTOR shall provide competent, suitably qualified personnel in their various duties. CONTRACTOR shall at all times maintain good discipline and order at the Site. Except as otherwise required for the safety or protection of persons, the Work, property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the Site shall be performed during regular working hours (7:00 a.m. to 7:00 p.m.), and CONTRACTOR will not permit the performance of Work on Sunday or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER.

6.03 Services, Materials and Equipment

- A. Unless otherwise specified in the Contract Documents, CONTRACTOR shall furnish and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start up and completion of the Work.
- B. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Contract Documents shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence, (including reports of required tests) as to the kind and quality of materials and equipment to be incorporated in the Work. The CONTRACTOR shall not use material in the Work until Shop Drawing or Submittals have been reviewed by the ENGINEER. All materials which do not meet the requirements of the Specifications at the time they are to be used will be rejected, and unless otherwise permitted by ENGINEER, shall be plainly marked and removed immediately from the Work.
- C. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, Supplier or distributor, except as otherwise provided in the Contract Documents.

6.04 Substitutes and "Or-Equals"

- A. Whenever an item of materials or equipment is specified or described in the Contract Documents for installation in the Work by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor; or means, methods, techniques, sequences and procedures of construction are prescribed in the Plans or Specifications; the specification or description is intended to establish the type, function and quality required or the means, methods, techniques, sequences and procedures of construction required. Unless the specification or description contains or is followed by words indicating that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment or materials or equipment of other manufacturers, fabricators, suppliers or distributors; or other means, methods, techniques, sequences and procedures of construction may be accepted by ENGINEER under the following circumstances:
1. "Or-Equal": If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.
 2. Substitute Items: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.04.A; or a proposed means, methods, techniques, sequences and procedures of construction are different from what is prescribed in the Plans or Specifications, it will be considered a proposed substitute item.
- B. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment or means, methods, techniques, sequences and/or procedures proposed is essentially equivalent to that named and an acceptable substitute therefor. The procedure for review by the ENGINEER will include the following, as supplemented in the Specifications, and as ENGINEER may decide is appropriate under the circumstances. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.
- C. If CONTRACTOR wishes to furnish or use a substitute, CONTRACTOR shall make written application to ENGINEER on the Substitution Request Form provided for acceptance thereof, certifying that the proposed substitute will:
1. perform adequately the functions and achieve the results called for by the general design,
 2. be similar in substance to that specified,
 3. and be suited to the same use and capable of performing the same function as that specified.

The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the proposed substitute for use in the Work will require a change in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute, and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.

- D. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service shall be indicated. The application shall also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute.
- E. All data to be provided by CONTRACTOR in support of any proposed "or-equal" or substitute item will be at CONTRACTOR's expense. ENGINEER will be the sole judge of acceptability, and ENGINEER's determination shall be final and binding, may not be reversed through an appeal under any provisions of the Contract Documents, and no "or-equal" or substitute shall be ordered, installed or utilized without ENGINEER's prior written acceptance. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute which has been approved by ENGINEER.
- F. ENGINEER will record time required by ENGINEER and ENGINEER's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's consultants for evaluating any proposed substitute and in making any changes in the Contract Documents resulting therefrom.

6.05 Concerning Subcontractors

- A. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organizations, including those who are to furnish the principal items of materials or equipment, whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall furnish ENGINEER a complete list of any Subcontractor, Supplier or other person or organization furnishing principal items of material or equipment within 4 days of request. Failure to object to any Subcontractor, Supplier, other person or organization by OWNER or ENGINEER shall not constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.
- B. If OWNER or ENGINEER, after due investigation, has reasonable objection to any Subcontractor, Supplier, other person or organization proposed by CONTRACTOR after the Notice of Award, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order shall be issued. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.

- C. The CONTRACTOR shall not award Work to Subcontractor(s), in excess of 50% of the Contract Price, without prior written approval of the OWNER.
- D. CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors, Suppliers and of persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor, Supplier or other person or organization. OWNER or ENGINEER may furnish to any Subcontractor, Supplier or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done.
- E. The CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with the ENGINEER through CONTRACTOR.
- F. If the amount of the subcontract or the nature of the Work to be performed thereunder warrants, OWNER may require Subcontractor to furnish, for the benefit of the OWNER and CONTRACTOR jointly, Bonds in an amount proportioned to the amount of his subcontract, and for the same purpose and under the same specifications as those of the general Contract. The Surety on the general Contract shall not be eligible to furnish such Subcontract Bonds.
- G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as and additional insured on the property insurance provided in paragraph 5.03.A.5, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same. CONTRACTOR shall file a true copy of such agreement with OWNER.

6.06 Patent Fees and Royalties

- A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall defend, indemnify and hold harmless OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, costs, losses, damages and expenses arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

6.07 Permits and Licenses

- A. CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges, permit, review, and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work.

6.08 Laws and Regulations

- A. CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to furnishing and performance of the Work. Neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws, ordinances, rules, and Regulations.
- B. If CONTRACTOR performs any Work that is contrary to such laws, ordinances, rules and regulations, CONTRACTOR shall bear all claims, costs, losses, damages and expenses caused by, arising out of, or resulting therefrom. However, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Plans are in accordance with such laws, ordinances, rules, and regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.
- C. OWNER or CONTRACTOR may give notice to the other party of any changes after the submission of CONTRACTOR's Bid (or after the date when CONTRACTOR became bound under a negotiated Contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount, or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice CONTRACTOR may submit a Change Proposal, or OWNER may initiate a Claim.

6.09 Taxes

- A. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.10 Use of Premises

- A. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project Site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights of way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area or to the owner or occupant thereof or of any adjacent land or areas resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with any such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR's continuing obligations under paragraph 6.24 shall be applicable to any claim hereunder.

6.11 Removal of Debris and Cleaning

- A. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the Site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall restore to their original condition all property not designated for alteration by the Contract Documents. If CONTRACTOR shall fail to keep the above noted areas cleaned of dust or debris resulting from CONTRACTOR's operations, CONTRACTOR shall be so notified in writing by ENGINEER. If within 24 hours after receipt of such notice CONTRACTOR shall fail to clean such areas satisfactorily, OWNER may have such other agency as he shall designate, perform the work and all costs of such cleaning shall be paid for by CONTRACTOR.

6.12 Loading Structures

- A. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.13 Protection of Utilities

- A. When it is possible for construction operations to endanger any public or private utility, conduit, or structure, CONTRACTOR shall notify the utility owner of this possibility, and safeguard and support such utilities, conduits, or structures. Where it is the policy of any utility owner to make its own repairs to damaged conduit or other structures, CONTRACTOR shall cooperate to the fullest extent with the utility, and he shall see that his operations interfere as little as possible with these operations, and CONTRACTOR shall assume the cost of any charge against OWNER therefor. In cases where existing Utilities or Utility service connections are encountered, CONTRACTOR shall perform his operations in such a manner that service will be uninterrupted, and the cost thereof shall be at CONTRACTOR's expense, unless otherwise provided.

6.14 Record Documents

- A. CONTRACTOR shall maintain in a safe place at the Site 1 record copy of all Specifications, Plans, Addenda, Change Orders, Work Change Directives, and Field Orders, in good order and annotated to show all changes made during construction. These record documents together with all Samples and all Shop Drawings shall be available to ENGINEER for examination and shall be delivered to ENGINEER for OWNER upon completion of the Work.

6.15 Safety and Protection

- A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Work Site or who may be affected by the Work,
 - 2. all the Work and materials or equipment to be incorporated therein, whether in storage on or off the Site, and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and Utilities and not designated for removal, relocation or replacement in the course of construction.
- B. CONTRACTOR shall comply with all applicable Laws and Regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property, Utilities, and utility owners when prosecution of the Work may affect them.
- C. CONTRACTOR shall restore, at his own expense, any public or private property damaged or injured in consequence of any act or omission on his part, or on the part of his employees or agents, to a condition equal or better than that existing before such injury or damage was done. If CONTRACTOR neglects to restore or make good such damages or injury, OWNER may, upon 48 hours' notice, proceed to restore or make good such damage or injury and to order the cost thereof deducted from any monies that are due, or may become due, to CONTRACTOR for this Work.
- D. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.11 that the Work is Acceptable.
- E. CONTRACTOR shall comply with the applicable requirements of OWNER's safety programs, if any. Any OWNER's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- F. CONTRACTOR shall inform OWNER and ENGINEER of the specific requirements of CONTRACTOR's safety program with which OWNER's and ENGINEER's employees and representatives must comply while at the Site.

- G. CONTRACTOR's duties and responsibilities for safety and protection will continue until all the Work is completed, ENGINEER has issued a written notice to OWNER and CONTRACTOR in accordance with paragraph 14.11 that the Work is acceptable, and CONTRACTOR has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- H. CONTRACTOR's duties and responsibilities for safety and protection will resume whenever CONTRACTOR or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

6.16 Safety Representative

- A. CONTRACTOR shall be responsible to designate for itself and its employees, and its Subcontractors a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.17 Hazard Communication Program

- A. CONTRACTOR shall be responsible for coordinating any exchange of safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with applicable Laws or Regulations.

6.18 Emergencies

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued to document the consequences of such action.

6.19 Shop Drawings and Samples

- A. CONTRACTOR shall submit Shop Drawings required by the Contract Documents to ENGINEER for review, in accordance with an accepted schedule. All Submittals will be identified as ENGINEER may require and in the number of copies specified in the Specifications. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show ENGINEER the materials and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.21.
- B. CONTRACTOR shall also submit all samples required by the Contract Documents to ENGINEER for review in accordance with an accepted schedule. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, the use for which intended, and other data as ENGINEER may require to enable ENGINEER to review the Submittal for the limited purposes required by paragraph 6.21. The number of each sample to be submitted will be as specified in the Specifications.

6.20 Submittal Procedures

- A. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:
 - 1. all field measurements, quantities, dimension, specified performance criteria, installation requirements, manufacturer's recommendations, material, catalog numbers and similar information with respect thereto,
 - 2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and
 - 3. all information relative to CONTRACTOR's responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- B. CONTRACTOR shall have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
- C. Each Submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to review and approval of that Submittal.
- D. At the time of each submission, CONTRACTOR shall in writing call ENGINEER's attention to any deviations that the Shop Drawings or Samples may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to ENGINEER for review of each such variation.
- E. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous Submittals.
- F. CONTRACTOR shall furnish required Submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. ENGINEER will record ENGINEER's time for reviewing a fourth or subsequent submittal of Shop Drawings, sample, or other item requiring approval, and CONTRACTOR shall be responsible for ENGINEER's charges to OWNER for such time. OWNER may impose a set-off against payments due to CONTRACTOR to secure reimbursement for such charges.
- G. If CONTRACTOR requests a change of a previously approved Submittal item, CONTRACTOR shall be responsible for ENGINEER's charges to OWNER for its review time, and OWNER may impose a set-off against payments due to CONTRACTOR to secure reimbursement for such charges, unless the need for such change is beyond the control of CONTRACTOR.

6.21 ENGINEER's Review

- A. ENGINEER will review Shop Drawings and Samples in accordance with the Schedule of Submittals accepted by ENGINEER as required by paragraph 2.05. ENGINEER's review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions.
- B. ENGINEER's review of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variations from the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to such variation at the time of submission and ENGINEER has given written concurrence to the specific variation, nor shall any concurrence by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings. ENGINEER's review shall not relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.20.
- C. Where a Shop Drawing or sample is required by the Contract Documents or the Schedule of Submittals accepted by ENGINEER per paragraph 2.05, no related Work shall be commenced until the Submittal has been reviewed by the ENGINEER.

6.22 Continuing the Work

- A. CONTRACTOR shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as CONTRACTOR and OWNER may otherwise agree in writing.

6.23 CONTRACTOR's General Warranty and Guarantee

- A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or their employees, agents, or representatives, or any person or entity for whom CONTRACTOR is responsible; or
 - 2. normal wear and tear under normal usage.
- B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by ENGINEER;
 - 2. recommendation of any progress or final payment by ENGINEER;
 - 3. the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;
 - 4. use or occupancy of any part of the Work by OWNER;
 - 5. any acceptance by OWNER or failure to do so;

6. any review or approval of a Shop Drawing or Sample Submittal or the issuance of a notice of acceptability by ENGINEER per paragraph 14.11;
 7. any inspection, test or approval by others; or
 8. any correction of defective Work by OWNER.
- C. If Contract requires the CONTRACTOR to accept the assignment of a contract entered into by OWNER, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to CONTRACTOR's performance obligations to OWNER for the Work described in the assigned Contract.
 - D. CONTRACTOR shall assign to OWNER all warranties extended to CONTRACTOR by material Suppliers and Subcontractors. If an assignment of warranty requires the material Supplier or Subcontractor to consent to same, then CONTRACTOR shall secure the material Supplier's or Subcontractor's consent to assign said warranties to OWNER.
 - E. The warranties provided in this section shall be in addition to, and not in limitation of, any other warranty or remedy required by law.

6.24 Indemnification

- A. To the fullest extent permitted by law, CONTRACTOR shall indemnify, defend (with counsel acceptable to OWNER) and hold harmless OWNER, ENGINEER and any additional indemnitees identified in the Supplementary Conditions and their respective directors, officers, members, partners, affiliates, employees, agents and successors, from and against any and all liabilities, claims, causes of action, lawsuits, liens, injuries, damages, losses and expenses (collectively "Demands") to the extent caused by, arising out of, resulting from or occurring in connection with:
 1. CONTRACTOR's breach of, or failure to comply with, the Agreement, the Contract Documents, or any other contract that it enters into regarding the Work, including any default in performance; or
 2. Personal injury or death to any person (including, but not limited to, CONTRACTOR, CONTRACTOR's employees, Subcontractors, Subcontractors' employees, and material Suppliers) or injury to or destruction of property (including claims for loss of use) caused by, arising out of, resulting from, or in any way connected with
 - a. the Work,
 - b. any activity associated with the Work, or
 - c. the operations or acts of commission or omission of CONTRACTOR, CONTRACTOR's employees, Subcontractors, Subcontractors' employees, material suppliers, or anyone for whom CONTRACTOR is legally liable in the performance of Work, whether arising before or after completion of the Work.
- B. To the extent caused by, arising out of, resulting from, or occurring in connection with the provisions of the above paragraph 6.24.A, CONTRACTOR's indemnity obligations under this Agreement shall include, but are not limited to:

1. Indemnity for all damages and judgment interest, all costs and fees, including, but not limited to, all defense costs, expenses and actual attorneys' fees, and all settlement payments relating to, arising out of, resulting from or in any way connected with any demand requiring indemnity by this Agreement;
 2. All expenses, including but not limited to, costs, expenses and actual attorneys' fees, incurred in securing and enforcing indemnity from CONTRACTOR if CONTRACTOR fails or refuses promptly to fulfill any of the indemnity obligations under this Agreement;
 3. All indemnification obligations imposed upon OWNER or ENGINEER, or both, arising out of or in connection with the Work; and
 4. Indemnification for any penalties and/or fines arising or resulting from CONTRACTOR's or any SUBCONTRACTOR's failure to comply with laws and/or regulations applicable to its/their Work.
- C. Contractor's duty to indemnify under Subpart A.2. of Article 6.24 is limited to the negligence of Contractor, Contractor's employees, Subcontractors, Subcontractor's employees, material Suppliers, or anyone for whom Contractor is legally liable in the performance of the Work, whether arising before or after the completion of the Work.
- D. The indemnification rights under this Agreement shall not be construed to negate, abridge, or otherwise reduce any other right or obligations of indemnity which would otherwise exist.
- E. OWNER, at its option, may select counsel to defend any demand brought against it without impairing any obligation of the CONTRACTOR to provide indemnification.
- F. The indemnification provisions under this Agreement shall survive the completion or termination of this Agreement.
- G. In the case of claims by any employee of CONTRACTOR, anyone directly or indirectly employed by CONTRACTOR, or anyone for whose acts CONTRACTOR may be liable, the indemnification obligations under this Agreement shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR under workers' compensation acts. Such obligations shall not be construed to negate, abridge or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Agreement.
- H. Indemnification, additional insured and hold harmless obligations of CONTRACTOR and Subcontractor under the Contract Documents shall survive the termination of this Agreement.
- I. CONTRACTOR and Subcontractors will compel their insurance company to waive subrogation against OWNER, all ENGINEERS and all CONTRACTORS and Subcontractors identified as additional insureds in the Contract Documents, including any municipal entity now existing or newly created during the term of the Contract Documents.

6.25 Delegation of Professional Design Services

- A. CONTRACTOR will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out CONTRACTOR's responsibilities for construction means, methods, techniques, sequences or procedures. CONTRACTOR shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, equipment, structures, means, methods, techniques or sequences of construction are specifically required of CONTRACTOR by the Contract Documents, OWNER and ENGINEER will specify all performance and design criteria that such services must satisfy. CONTRACTOR shall cause such services or certifications to be provided by a professional properly licensed in the state in which the project is located, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other Submittals prepared by such professional. Shop Drawings and other Submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to ENGINEER.
- C. OWNER and ENGINEER shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals.
- D. Pursuant to this paragraph 6.25, ENGINEER's review or approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. ENGINEER's review or approval of Shop Drawings and other Submittals (except design calculations and design drawings) will be only for the purpose stated in paragraph 6.21.
- E. CONTRACTOR shall not be responsible for the adequacy of the performance or design criteria specified by OWNER or ENGINEER.

Article 7 Work by Others

7.01 Related Work at Site

- A. In addition to and apart from the Work under the Contract Documents, the OWNER may perform other work at or adjacent to the Site. Such other work may be performed by OWNER's employees, or through contracts between the OWNER and third parties. OWNER may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If any part of CONTRACTOR's Work depends on proper execution or results upon the work of any such other contractor or utility owner, CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such other work that render it unavailable, or unsuitable for such proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report shall constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.

- C. CONTRACTOR shall afford each contractor who is party to such a direct contract, and each utility owner, (and OWNER, if OWNER is performing the additional work with OWNER's employees), proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting and patching of CONTRACTOR's Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected.
- D. If the performance of additional work by other contractors, utility owner, or OWNER was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work by OWNER or others involves additional expense to CONTRACTOR, or requires an extension of the Contract Time, CONTRACTOR may make a Claim therefor as provided in paragraph 11.01. Claims for delay or inconveniences due to operations of such other parties for work noted in the Contract Documents will not be allowed.

Article 8 OWNER's Responsibilities

8.01 Communication to CONTRACTOR

- A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 Replacement of ENGINEER

- A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 Furnishing Data

- A. OWNER shall furnish the data required of OWNER under the Contract Documents promptly.

8.04 Pay When Due

- A. OWNER shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.05 and 14.11.

8.05 Lands and Easements; Reports and Tests

- A. OWNER's duties in respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of investigations and tests of subsurface and latent physical conditions at the Site.

8.06 Change Orders

- A. In connection with OWNER's rights to request changes in the Work in accordance with Article 10, OWNER (especially in certain instances as provided in paragraph 10.01) is obligated to execute Change Orders.

8.07 Inspections, Tests, and Approvals

- A. OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.02.

8.08 Limitation on OWNER's Responsibility

- A. The OWNER shall not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.09 Undisclosed Hazardous Materials

- A. OWNER's responsibility in respect of undisclosed Constituents of Concern uncovered or revealed at the Site is set forth in paragraph 4.06.

8.10 OWNER'S Designated Representative

- A. OWNER shall designate a person to act as its representatives during the performance of the Work. OWNER's designated representative will attend meetings and perform on behalf of OWNER all obligations required of OWNER under the provisions of the Contract Documents.

Article 9 ENGINEER's Status During Construction

9.01 OWNER's Representative

- A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER'S representative during construction shall be as set forth in the Contract Documents.

9.02 Visits to Site

- A. ENGINEER may make visits to the Site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work, and to determine solely for the benefit of OWNER, in general, if the Work is proceeding in accordance with the technical requirements of the Contract Documents. It will not be the responsibility of ENGINEER to make exhaustive or continuous on Site inspections to check the quality or quantity of the Work.

9.03 Resident Project Representative

- A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more continuous observation of the Work. A Resident Project Representative will act as directed by and under the supervision of ENGINEER and will confer with ENGINEER regarding his actions. Resident Project Representative's dealings in matters pertaining to the on Site Work shall in general be only with ENGINEER and CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of CONTRACTOR. The Resident Project Representative's duties and responsibilities include:
 - 1. Schedules
 - a. Review the Progress Schedule, Schedule of Submittals and Schedule of Values prepared by CONTRACTOR.
 - 2. Conferences

- a. Arrange a schedule of progress meetings and other job conferences as required in consultation with ENGINEER and OWNER, and notify those expected to attend in advance.
- 3. Liaison
 - a. Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist him in understanding the intent of the technical aspects of the Contract Documents. Assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on Site operations.
- 4. Shop Drawings and Samples
 - a. Advise ENGINEER and CONTRACTOR, or CONTRACTOR's superintendent, immediately of the commencement of any Work requiring a Shop Drawing or Sample submission if the submission was identified on the schedule and has not been reviewed by ENGINEER.
- 5. Review of Work, Rejection of Defective Work, Inspections, and Tests:
 - a. Conduct on Site observations of the Work and report to ENGINEER whenever Resident Project Representative believes that technical aspects of any executed Work is unsatisfactory, faulty or defective or does not meet the requirements of any inspections, tests or approval required to be made or has been damaged prior to final payment; and advise ENGINEER when Resident Project Representative believes that any partially completed portion of the Work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
 - b. Observe, record and report to ENGINEER appropriate details relative to test procedures and startups.
 - c. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections and report to ENGINEER.
- 6. Modifications
 - a. Consider CONTRACTOR's suggestions for modifications in Plans or Specifications and report them to ENGINEER.
- 7. Reports
 - a. Prepare periodic reports as required of progress of the Work and CONTRACTOR's compliance with the approved Progress Schedule and Schedule of Submittals.
- 8. Completion
 - a. Verify that all items on final list of items requiring completion or correction have been completed or corrected and make recommendations to ENGINEER concerning acceptance.
- 9. Exceptions

a. Resident Project Representative:

- (1) Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
- (2) Shall not approve or accept any portion of the completed Work.
- (3) Shall not undertake any of the responsibilities of CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the Work.
- (4) Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
- (5) Shall not advise on or issue directions as to safety precautions and programs in connection with the Work.
- (6) Shall not advise on or issue directions regarding CONTRACTOR's failure to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

9.04 Clarifications and Interpretations

- A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

9.05 Authorized Variations in Work - Field Order

- A. ENGINEER may authorize minor adjustments in the Work to avoid obstructions or interferences which do not involve an adjustment in the Contract Price or the Contract Time, and which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and shall be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly. If OWNER or CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a request for a Change Proposal may be made therefore as provided in paragraph 10.06 or a Claim may be submitted as set forth in paragraph 11.01.

9.06 Rejecting Defective Work

- A. ENGINEER will have authority to disapprove or reject completed portions of the Work which ENGINEER believes to be defective and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed or completed.

9.07 Shop Drawings, Change Orders, and Payments

- A. ENGINEER's responsibility for Shop Drawings and samples are set forth in paragraphs 6.19 through 6.21 inclusive.
- B. ENGINEER's responsibilities as to Change Orders are set forth in Articles 10, 11, and 12.

- C. ENGINEER's responsibilities in respect of Applications for Payment are set forth in Article 14.

9.08 Determinations for Unit Price Work

- A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.06.

9.09 Decisions on Disagreements, Claims

- A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work performed thereunder. Claims, disputes and other matters relating to the acceptability of the Work, or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work, shall be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph 9.09.
- B. ENGINEER will, with reasonable promptness, render a written decision on the issue referred. If OWNER or CONTRACTOR believe that any such decision entitles them to an adjustment in the Contract Price, or Contract Times, or both, a Claim may be made under paragraph 11.01.
- C. ENGINEER's written decision on the issue referred will be final and binding on OWNER and CONTRACTOR, subject to the provisions of paragraph 11.01.
- D. In this capacity ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.10 Limitations on ENGINEER's Responsibilities

- A. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents, nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority, shall give rise to any duty or responsibility of ENGINEER to OWNER or CONTRACTOR, any Subcontractor, any manufacturer, fabricator, Supplier, distributor, surety, or any other person, employee, or agent of any of them.
- B. ENGINEER will not supervise, direct, control or have authority over, or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents. These limitations on authority and responsibility shall also apply to ENGINEER's Consultant's, Resident Project Representative and assistants.
- C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, Supplier, or of any other individual or entity performing any of the Work.

- D. ENGINEER will not be responsible to CONTRACTOR or any Subcontractor, or Supplier, or to their agents or employees for injuries, damages, claims, losses, or expenses (including attorney's fees) of whatsoever kind resulting from or caused by any act or omission of ENGINEER in preparation for, arising from, relating to, or concerning the Project. Such acts or omissions include, but are not limited to, ENGINEER's negligence, tortuous conduct, errors, omissions, strict liability, breach of contract, or breach of warranty. ENGINEER makes no representations to CONTRACTOR, Subcontractors, Suppliers or their agents or employees regarding or respecting any work performed by ENGINEER in preparation for, arising from, relating to, or concerning the Project.
- E. Neither CONTRACTOR, its agents or employees, nor any Subcontractors or Suppliers or their agents or employees, are intended beneficiaries of ENGINEER's agreement with OWNER, nor are such parties intended beneficiaries of ENGINEER's duties or responsibilities arising therefrom. ENGINEER disclaims all duties to CONTRACTOR, Subcontractors, Suppliers or their agents or employees arising from, relating to, or concerning ENGINEER's involvement in the Project. OWNER and CONTRACTOR further agree to notify all CONTRACTOR's, Subcontractors or Suppliers of this disclaimer of ENGINEER's liability and require them to abide by this disclaimer.

Article 10 Amending the Contract Documents; Changes in the Work

10.01 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. Change Orders:
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. OWNER and CONTRACTOR may amend those terms and conditions of the Contract Documents that do not involve;
 - (1) the performance or acceptability of the Work,
 - (2) the design (as set forth in the Drawings, Specifications, or otherwise), or
 - (3) other engineering or technical matters, without the recommendation of ENGINEER. Such an amendment shall be set forth in a Change Order.
 - 2. Work Change Directives.

- a. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including paragraph 10.04 regarding change of Contract Price.
 - b. CONTRACTOR must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the issuance of the Work Change Directive.
 - c. OWNER must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
- 3. Field Orders.
 - a. ENGINEER may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on OWNER and CONTRACTOR, which shall perform the Work involved promptly.
 - b. If CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, CONTRACTOR shall submit a Change Proposal as provided herein.

10.02 OWNER-Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by ENGINEER's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if OWNER and CONTRACTOR have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive.
- B. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph 10.02 shall obligate CONTRACTOR to undertake work that CONTRACTOR reasonably concludes cannot be performed in a manner consistent with CONTRACTOR's safety obligations under the Contract Documents or Laws and Regulations.

10.03 Unauthorized Changes in the Work

- A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in paragraph 6.18 or in the case of uncovering Work as provided in paragraph 13.03.

10.04 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of paragraph 10.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of paragraph 11.01.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by Unit Prices contained in the Contract Documents, then by application of such Unit Prices to the quantities of the items involved (subject to the provisions of paragraph 12.03); or
 - 2. where the Work involved is not covered by Unit Prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 10.04.C.2); or
 - 3. where the Work involved is not covered by Unit Prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in paragraph 12.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 10.04.C).
- C. CONTRACTOR's Fee: When applicable, the CONTRACTOR's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under paragraph 12.01.B.1 and 12.01.B.2, the CONTRACTOR's fee shall be 15 percent;
 - b. for costs incurred under paragraph 12.01.B.3, the CONTRACTOR's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraphs 10.04.C.2.a and 10.04.C.2.b is that the CONTRACTOR's fee shall be based on:
 - (1) a fee of 15 percent of the costs incurred under paragraphs 12.01.B.1 and 12.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and

- (2) with respect to CONTRACTOR itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor;

provided, however, that for any such subcontracted work the maximum total fee to be paid by OWNER shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

- d. no fee shall be payable on the basis of costs itemized under paragraphs 12.01.B.4, 12.01.B.5, and 12.01.C;
- e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to 5 percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 10.04.C.2.a through 10.04.C.2.e, inclusive.

10.05 Change of Contract Times

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of paragraph 10.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of paragraph 11.01.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in paragraph 12.04, concerning delays in CONTRACTOR's progress.

10.06 Change Proposals

- A. CONTRACTOR shall submit a Change Proposal to ENGINEER to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by ENGINEER concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seeking other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only 1 issue, or a set of closely related issues.

1. Procedures. CONTRACTOR shall submit each Change Proposal to ENGINEER promptly (but in no event later than 5 days) after the start of the event giving rise thereto, or after such initial decision. CONTRACTOR shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any) to ENGINEER and OWNER within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which CONTRACTOR believes it is entitled as a result of said event. ENGINEER will advise OWNER regarding the Change Proposal and consider any comments or response from OWNER regarding the Change Proposal.
 2. ENGINEER's Action. ENGINEER will review each Change Proposal and, within 30 days after receipt of the CONTRACTOR's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to OWNER and CONTRACTOR. If ENGINEER does not take action on the Change Proposal within 30 days, then either OWNER or CONTRACTOR may at any time thereafter submit a letter to the other party indicating that as a result of the ENGINEER's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under paragraph 11.01.
 3. Binding Decision. ENGINEER's decision will be final and binding upon OWNER and CONTRACTOR, unless OWNER or CONTRACTOR appeals the decision by filing a Claim under paragraph 11.01.
- B. Resolution of Certain Change Proposals: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then ENGINEER will notify the parties that the ENGINEER is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and CONTRACTOR may choose to seek resolution under the terms of paragraph 11.01.

10.07 Execution of Change Orders

- A. OWNER and CONTRACTOR shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the Parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an OWNER set-off, unless CONTRACTOR has duly contested such set-off;
 3. changes in the Work which are:
 - a. ordered by OWNER pursuant to paragraph 10.02,
 - b. required because of OWNER's acceptance of defective Work under paragraph 13.08 or OWNER's correction of defective Work under paragraph 13.09, or

- c. agreed to by the parties, subject to the need for ENGINEER's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 - 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under paragraph 10.06, or Article 16.
- B. If OWNER or CONTRACTOR refuses to execute a Change Order that is required to be executed under the terms of this paragraph 10.07, it shall be deemed to be of full force and effect, as if fully executed.

10.08 Notification to Surety

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

Article 11 Claims

11.01 Claims

- A. Claims Process: The following disputes between OWNER and CONTRACTOR shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by OWNER or CONTRACTOR of ENGINEER's decisions regarding Change Proposals;
 - 2. OWNER demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that ENGINEER has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. Submittal of Claim: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 10 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the ENGINEER, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by CONTRACTOR seeking an increase in the Contract Times or Contract Price, or both, CONTRACTOR shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of CONTRACTOR's knowledge and belief the amount of time or money requested accurately reflects the full amount to which CONTRACTOR is entitled.
- C. Review and Resolution: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to ENGINEER.
- D. Mediation:

1. At any time after initiation of a Claim, OWNER and CONTRACTOR may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 2. If OWNER and CONTRACTOR agree to mediation, then after 60 days from such agreement, either OWNER or CONTRACTOR may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 3. OWNER and CONTRACTOR shall each pay one-half of the mediator's fees and costs.
- E. Partial Approval: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 16 for final resolution of disputes.
- F. Denial of Claim: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either OWNER or CONTRACTOR may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 16 for final resolution of disputes.
- G. Final and Binding Results: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

Article 12 Cost of the Work; Allowances; Unit Price Work

12.01 Cost of Work

- A. Purposes for Determination of Cost of the Work: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this paragraph 12.01 are used to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, CONTRACTOR is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. Costs Included: Except as otherwise may be agreed to in writing by OWNER, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in paragraph 12.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.
2. Costs of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.
3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 12.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

- b. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - (1) The rental rate established for each piece of CONTRACTOR owned equipment, including appurtenances and attachments to the equipment, used will be determined by use of the Rental Rate Blue Book for Construction Equipment, Volume 1, 2 or 3, as applicable; the edition which is current at the time the Work was started will apply. The established rental rate will be equal to the "Monthly" rate divided by 176; modified by the rate adjustment factor and the applicable map adjustment factor, plus the "Estimated Operating Costs per Hour."
 - (2) For equipment not listed in the Rental Rate Blue Book, Volume 1, 2 or 3, the rental rate will be determined by using the rate listed for a similar piece of equipment or by proportioning a rate listed so that the capacity, size, horsepower, and age are properly considered.
 - (3) For equipment for which there are no comparables in the Rental Rate Blue Book, Volume 1, 2 or 3, the monthly rate shall be reasonable, but not more than 5 percent of the current list price, or invoice, of the equipment. The base hourly rate shall then be determined by dividing the monthly rate by 176 to which 20 percent will be added to the sum which will account for adjustments and operating costs.
- c. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, as imposed by laws and regulations.
- d. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

- e. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.03), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining
 - f. The cost of utilities, fuel, and sanitary facilities at the Site.
 - g. The costs of premiums for all bonds and insurance that CONTRACTOR is required by the Contract Documents to purchase and maintain.
- C. Costs Excluded: The term Cost of the Work shall not include any of the following items:
- 1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 12.01.B.1 or specifically covered by paragraph 12.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the CONTRACTOR's fee.
 - 2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.
 - 3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
 - 4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 12.01.B.
- D. CONTRACTOR's Fee: When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 10.04.C.

- E. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 12, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER on a daily basis, an itemized cost breakdown together with supporting data.

12.02 Allowances

- A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to OWNER and ENGINEER.
- B. Cash Allowances: CONTRACTOR agrees that:
 - 1. the cash allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. CONTRACTOR's costs for unloading and handling of the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. Contingency Allowance: CONTRACTOR agrees that a contingency allowance, if any, is for the sole use of OWNER to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

12.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Proposal.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to CONTRACTOR for Unit Price Work will be based on actual quantities.
- C. Each Unit Price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.
- D. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of the following paragraph 12.03.E.

- E. Within 30 days of ENGINEER's written decision under the preceding paragraph 12.03.D, CONTRACTOR may submit a Change Proposal, or OWNER may file a Claim, seeking and adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimate quantity of such item indicated in the Proposal (in no event will any change in quantities of less than 25% be considered a material or significant change from the estimated quantities); and
 - 2. there is no corresponding adjustment with respect to any other item of Work.

12.04 Delays in CONTRACTOR's Progress

- A. If OWNER, ENGINEER, or anyone for whom OWNER is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then CONTRACTOR shall be entitled to request an equitable adjustment in the Contract Times and Contract Price. However, CONTRACTOR's entitlement to an adjustment of the Contract Times or Contract Price is expressly conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times.
- B. CONTRACTOR shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of CONTRACTOR. Delay, disruption, and interference attributable to and within the control of a SUBCONTRACTOR or Supplier shall be deemed to be within the control of CONTRACTOR.
- C. If CONTRACTOR's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault and beyond the control of OWNER, CONTRACTOR, and those for which they are responsible, then CONTRACTOR shall be entitled to an equitable adjustment in Contract Times. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times. Such an adjustment shall be CONTRACTOR's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include only the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. acts or failures to act of utility owners (other than those performing other works at or adjacent to the Site by arrangement with the OWNER, as specified in paragraph 7.01); and
 - 3. acts of war or terrorism.
- D. CONTRACTOR's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
 - 1. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.

2. CONTRACTOR shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of CONTRACTOR. Such a concurrent delay by CONTRACTOR shall not preclude an adjustment of Contract Times to which CONTRACTOR is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 10.
- E. Each CONTRACTOR request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 10.04.

CONTRACTOR shall also furnish such additional supporting documentation as OWNER or ENGINEER may require including, where appropriate, a revised Progress Schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work

- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by paragraphs 4.03 and 4.06.
- G. Paragraph 7.01 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- H. CONTRACTOR shall not be entitled to any adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of CONTRACTOR.
- I. CONTRACTOR must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 5 days of the commencement of the delaying, disrupting, or interfering event.

- J. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Time (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety or employee or any agent of them, for damages, including but not limited to all fees and charges of ENGINEERS, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, arising out of or resulting from:
1. delays caused by or within the control of CONTRACTOR (or Subcontractor or Supplier);
 2. delays beyond the control of both OWNER and CONTRACTOR, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts of neglect by utility owners or other contractors performing other work;
- K. Nor shall OWNER or ENGINEER or each of them be liable to CONTRACTOR for any claims, costs, losses or damages sustained by CONTRACTOR on or in connection with any other project or anticipated project.
- L. Nothing in this paragraph 12.04 bars a change in Contract Price to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible. Except for an adjustment to the Contract Times and Contract Price, the CONTRACTOR shall not be entitled to and hereby waives any and all damages that it may suffer by reason of such delay or for any Act of God, including but not limited lost profits, overhead, and other consequential damages.

Article 13 Tests and Inspection; Correction, Removal or Acceptance of Defective Work

13.01 Access to Work

- A. OWNER, ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access and advise OWNER and ENGINEER of CONTRACTOR's Site safety procedures and programs so that OWNER and ENGINEER may comply therewith as applicable.

13.02 Tests and Inspections

- A. CONTRACTOR shall give ENGINEER and testing agency at least 24-hour notice, unless otherwise specified, of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. If any Law and Regulation, code, or order of any public body having jurisdiction requires any Work or part thereof to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval.

- C. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's or ENGINEER's acceptance of a manufacturer, fabricator, Supplier or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.
- D. The cost of all other inspections, tests and approvals required by the Contract Documents shall be paid by OWNER unless otherwise specified.
- E. All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR or by ENGINEER if so specified.
- F. Cost of materials to be used in inspection and transportation costs shall be paid for by the CONTRACTOR.
- G. Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents.

13.03 Uncovering Work

- A. If any Work that is to be tested, inspected or approved is covered without written concurrence of ENGINEER, or contrary to the written request of ENGINEER, it shall, if requested by ENGINEER, be uncovered by CONTRACTOR for ENGINEER's observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely written notice of his intention to cover such Work and ENGINEER has not acted with reasonable promptness in response to such notice.
- B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. Except as otherwise specified in paragraph 13.04, the cost of Work shall be paid for as follows:
 - 1. If it is found that such Work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection and testing, and of satisfactory reconstruction, (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals) and an appropriate deductive Change Order shall be issued. If the parties are unable to agree as to the amount or extent of any change in Contract Price or Contract Time, OWNER may make a Claim as provided in paragraph 11.01.
 - 2. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction. If the parties are unable to agree as to the amount or extent of any change in Contract Price or Contract Time, CONTRACTOR may make a Claim as provided in paragraph 11.01.

13.04 Defective Work

- A. CONTRACTOR's Obligation: It is CONTRACTOR's obligation to assure that the Work is not defective.
- B. ENGINEER's Authority: ENGINEER has the authority to determine whether Work is defective, and to reject defective Work.

13.05 OWNER May Stop the Work

- A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 Correction or Removal of Defective Work

- A. If required by ENGINEER or OWNER, CONTRACTOR shall promptly either correct all defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by ENGINEER, remove it from the Site and replace it with non-defective Work. CONTRACTOR shall pay all claims, costs, losses, damages and expenses caused by or resulting from such correction or removal (including, but not limited to all costs of repair or replacement of work of others) and shall take no action that would void or otherwise impair OWNER's special warranty or guarantee, if any, on such Work.

13.07 Guarantee Period

- A. If within 1 year after the date of Substantial Completion (or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents), or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions:
 - 1. repair defective land or areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by OWNER, remove it from the Site and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work or the work of others or other land or areas resulting therefrom.
- B. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses, damages and expenses caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement or work of others) shall be paid by CONTRACTOR.
- C. Repair or replacements made under the guarantee shall bear an additional 1 year guarantee dated from the acceptance of repair or replacement.

13.08 Acceptance of Defective Work

- A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER'S recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all claims, costs, losses, damages and expenses attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness). In such case, if acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate reduction in the Contract Price. If the acceptance occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to OWNER.

13.09 OWNER May Correct Defective Work

- A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work, or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the Progress Schedule), OWNER may, after 48 hours' written notice to CONTRACTOR and his Surety without prejudice to any other remedy he may have, correct and remedy any such deficiency.
- B. In exercising his rights and remedies under this paragraph 13.09, OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER's consultants such access to the Site as may be necessary to enable OWNER to exercise his rights and remedies under this paragraph 13.09.
- C. All claims, costs, losses, damages and expenses incurred or sustained by OWNER in exercising such rights and remedies shall be charged against CONTRACTOR and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work. OWNER shall be entitled to an appropriate reduction in the Contract Price equivalent to such claims, costs, losses, damages and expenses including but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work.
- D. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights under this Article 13.

Article 14 Payments to CONTRACTOR and Completion

14.01 Schedules

- A. At least 10 days prior to submitting the first Application for Payment, CONTRACTOR shall submit to ENGINEER a final Schedule of Submittals, and, where applicable, a Schedule of Values for the Work. These schedules shall be satisfactory in form and substance to ENGINEER as provided in Article 2.

- B. The Schedule of Values shall include quantities and unit prices aggregating the Contract Price and shall subdivide the Work into component parts. Each unit cost so established shall include its proportionate share of CONTRACTOR's general operating charges such as profit, overhead, supervision, insurance, bond premiums, interest, equipment cost, depreciation and rental, contingencies, expendable tools, equipment and supplies. The total cost of the items and quantities CONTRACTOR lists in the Schedule of Values shall equal the total Contract Price established in the Proposal.
- C. The Schedule of Values shall include a complete set of detailed work sheets on bid take off and bid summary covering estimated general conditions expense (field overhead), general overhead, profit mark ups and revisions leading to the final bid amount.
- D. When the Schedule of Values is approved by the ENGINEER, it shall become part of the Agreement and shall be used as the basis for CONTRACTOR progress payments.
- E. Progress payments based upon Unit Price Work will be based upon the number of units completed.

14.02 Application for Progress Payment

- A. At least 20 days before each Application for Payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment, Contractor's Declaration, Payment Schedule, and updated Progress Schedules indicating the anticipated completion dates of the various stages of the Work and estimated payments during the next 3 months. Contractor's Application for Payment shall be filled out on the form provided in the Contract Documents and signed by CONTRACTOR covering the Work completed as of the date of the Application for Payment and accompanied by such supporting documentation as is required by the Contract Documents and as ENGINEER or OWNER may reasonably require. The Payment Schedule shall be on the form provided in the Contract Documents or in a format acceptable to the ENGINEER or OWNER. On the second and all subsequent payments, partial Waivers of Lien and Sworn Statement shall be required for all Work completed and paid for on previous certificates.
- B. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect OWNER's interest therein, including applicable insurance. A receipted vendor's invoice showing the quantities of materials and the amounts paid will be required and shall accompany the Application for Payment.
- C. Retainage with respect to progress payments will be in accordance with paragraph 14.03, and it will be retained until after completion of the entire Work and its final acceptance. When the amount to be retained is reduced to less than 10 percent, CONTRACTOR shall file with OWNER the written consent of the Surety to such reduction and shall furnish an affidavit that all CONTRACTOR's indebtedness by reason of the Contract has been paid.

14.03 Retainage

- A. On Contracts with a dollar value of \$30,000 and greater or on Contracts that provide for more than 3 progress payments, progress payments and retainage shall be governed by the provisions of any statutes, rules or regulations regarding retention and these are incorporated herein by reference and made a part of this Contract.
- B. If there are no statutes, rules, or regulations applicable to retention, retainage shall be 10%, or such an amount as OWNER deems necessary.

14.04 Review of Applications for Progress Payment

- A. ENGINEER will, within 10 days after receipt of each Contractor's Application for Payment and Payment Schedule, including each resubmittal, either indicate in writing a recommendation of payment and present an Engineer's Certificate for Payment to OWNER, or may return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.
- B. ENGINEER's recommendation of any payment requested in CONTRACTOR's Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's review of the Contractor's Application for Payment and Certificate for Payment and the accompanying data and schedules, as an experienced and qualified design professional that to the best of ENGINEER's knowledge, information and belief;
 - 1. the Work has progressed to the point indicated;
 - 2. the quality of the Work is in accordance with the technical aspects of the Contract Documents subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for any Unit Price Work under paragraph 12.03, and any qualifications stated in the recommendation; and
 - 3. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.
- C. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that:
 - 1. exhaustive or continuous on-Site inspections have been made to check the quality or the quantity of the Work; or
 - 2. involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract; or
 - 3. there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.
- D. Neither ENGINEER's review of CONTRACTOR's Work for the purpose of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER:
 - 1. to supervise, direct or control the Work;

2. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 3. for the failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of Work;
 4. for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents;
 5. to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price;
 6. to determine that title to any Work, materials, or equipment has passed to OWNER free and clear of Liens.
- E. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make such representations as stated above to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:
1. the Work is defective, or completed Work has been damaged requiring correction or replacement;
 2. the Contract Price has been reduced because of Change Orders;
 3. OWNER has been required to correct defective Work in accordance with paragraph 13.09, or has accepted defective Work in accordance with paragraph 13.08;
 4. OWNER has been required to remove or remediate a Hazardous Environmental Condition for which CONTRACTOR is responsible;
 5. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.

14.05 Payment Becomes Due

- A. Thirty (30) days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.05.B) become due, (or only if OWNER is a public agency, within 15 days after OWNER receives the funds which are to be provided by a department or agency of the federal or state government, whichever is later, or in accordance with any time periods required by any applicable statute, rule or regulation) and when due will be paid by OWNER to CONTRACTOR.
- B. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:
1. Claims have been made against OWNER based on CONTRACTOR's conduct in the performance or furnishing of the Work, or OWNER has incurred costs, losses, or damages resulting from CONTRACTOR's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

2. CONTRACTOR has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 3. CONTRACTOR has failed to provide and maintain required bonds or insurance;
 4. OWNER has been required to remove or remediate a Hazardous Environmental Condition for which CONTRACTOR is responsible;
 5. OWNER has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 6. The Work is defective, requiring correction or replacement;
 7. OWNER has been required to correct defective Work in accordance with paragraph 13.09, or has accepted defective Work pursuant to paragraph 13.08;
 8. The Contract Price has been reduced by Change Orders;
 9. An event has occurred that would constitute a default by CONTRACTOR and therefore justify a termination for cause;
 10. Liquidated or other damages have accrued as a result of CONTRACTOR's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 11. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;
 12. there are other items as set forth in the Contract Documents entitling OWNER to a set off against the amount recommended; or
 13. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.04.E.1 through 14.04.E.5.
- C. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER will give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects, to OWNER's satisfaction, the reasons for such action. The reduction imposed shall be binding on CONTRACTOR unless CONTRACTOR duly submits a Change Proposal contesting the reduction.
- D. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.05.

14.06 CONTRACTOR's Warranty of Title

- A. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all Liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

14.07 Substantial Completion

- A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete and request that ENGINEER issue a Certificate of Substantial Completion. CONTRACTOR shall at the same time submit to OWNER and ENGINEER an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after CONTRACTOR's notification, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor.
- C. Once ENGINEER considers the Work substantially complete, ENGINEER will deliver to OWNER a preliminary Certificate of Substantial Completion which shall fix the date of Substantial Completion. ENGINEER shall attach to the certificate a punch list of items to be completed or corrected before final payment. OWNER shall have 7 days after receipt of the preliminary certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, ENGINEER concludes that the Work is not substantially complete, ENGINEER will, within 14 days after submission of the preliminary certificate to OWNER, notify CONTRACTOR in writing that the Work is not substantially complete, stating the reasons therefore. If OWNER does not object to the provisions of the certificate, or if despite consideration of OWNER's objections ENGINEER concludes that the Work is substantially complete, then ENGINEER will, within said 14 days, execute and deliver to OWNER and CONTRACTOR a final Certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as ENGINEER believes justified after consideration of any objections from OWNER.
- D. At the time of receipt of the preliminary Certificate of Substantial Completion, OWNER and CONTRACTOR will confer regarding OWNER's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by OWNER. Unless OWNER and CONTRACTOR agree otherwise in writing, OWNER shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon OWNER's use or occupancy of the Work.
- E. After Substantial Completion the CONTRACTOR shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases CONTRACTOR may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion subject to allowing CONTRACTOR reasonable access to remove its property and complete or correct items on the punch list.

14.08 Partial Utilization

- A. Use by OWNER of completed portions of the Work may be accomplished prior to Substantial Completion of all the Work subject to the following:

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any part of the Work which OWNER believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the Work. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion.
 - a. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving his reasons therefor.
 - b. If ENGINEER considers that part of the Work to be substantially complete, ENGINEER will execute and deliver to OWNER and CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion for that part of the Work, attaching thereto a punch list of items to be completed or corrected before final payment.
2. Prior to issuing a certificate of Substantial Completion for that part of the Work, ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities and insurance for that part of the Work, which shall become binding upon OWNER and CONTRACTOR at the time of issuing the definitive certificate of Substantial Completion for that part of the Work unless OWNER and CONTRACTOR shall have otherwise agreed in writing and so informed ENGINEER.
3. OWNER shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the punch list.
4. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, OWNER may take over operation of a facility constituting part of the Work whether or not it is Substantially Complete if such facility is functionally and separately usable; provided that prior to any such takeover, OWNER and CONTRACTOR have agreed as to the division of responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

14.09 Final Inspection

- A. Upon written notice from CONTRACTOR that the Work is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.10 Final Application for Payment

- A. After CONTRACTOR has completed all corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked up record documents and other documents (all as required by the Contract Documents), and after ENGINEER has indicated that the Work is acceptable, subject to the provisions of paragraph 14.13, CONTRACTOR may make application for final payment following the procedure for progress payments.
- B. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as ENGINEER may reasonably require, consent of Surety, if any, to final payment, together with complete and legally effective releases or waivers, satisfactory to OWNER, of all Liens arising out of or filed in connection with the Work.
- C. In lieu of the releases or waivers of Lien, if approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or his property might in any way be responsible, have been paid or otherwise satisfied.
- D. If any Subcontractor, manufacturer, fabricator, Supplier or distributor fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Claim or Lien.

14.11 Final Payment and Acceptance

- A. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation (all as required by the Contract Documents), ENGINEER is satisfied that to the best of ENGINEER's knowledge, information and belief as a design professional that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, ENGINEER will, within 10 days after receipt of the final Application for Payment, indicate in writing ENGINEER's Certificate for Payment and present the application to OWNER for payment. At that time ENGINEER will give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.13.
- B. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.
- C. If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within 45 days (or within the time period required by any applicable statute, rule or regulation) after receipt thereof pay CONTRACTOR the amount recommended by ENGINEER less any amounts of OWNER claimed set-offs allowed under the Contract Documents, including but not limited to any applicable liquidated damages as determined by OWNER. If OWNER rejects the Application, OWNER shall do so in writing stating the appropriate sections of the Contract Documents upon which the rejection is based. CONTRACTOR may take the necessary remedial actions and resubmit the Application.

14.12 Final Completion Delayed

- A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.13 Waiver of Claims

- A. The making and acceptance of final payment shall constitute:
1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.09, or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; and shall not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's existing or continuing obligations under the Contract Documents; and,
 2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing and still pending in accordance with Article 16.

14.14 Late Payments

- A. All monies not paid when due hereunder, except monies involving Federal and/or State Loans, Grants, or other sources which are delinquent because of no fault of the OWNER, shall bear interest at the maximum rate allowed by law at the time and place of the Project.

Article 15 Suspension of Work and Termination

15.01 OWNER May Suspend Work

- A. OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period as OWNER may deem necessary by notice in writing to CONTRACTOR and ENGINEER. If it should become necessary to stop work for an indefinite period, CONTRACTOR shall store all materials in such manner that they will not become an obstruction, nor become damaged in any way, and CONTRACTOR shall take every precaution to prevent damage or deterioration of the Work performed; provide suitable drainage by opening ditches and drains, and erect temporary structures where necessary. CONTRACTOR may request an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a Claim therefor as provided in paragraph 11.01.

15.02 OWNER May Terminate for Cause

- A. The occurrence of any one or more of the following events will constitute a default by CONTRACTOR and justify termination for cause:

1. CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time;
 2. a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereinafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;
 3. CONTRACTOR makes a general assignment for the benefit of creditors;
 4. a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;
 5. CONTRACTOR admits in writing an inability to pay its debts generally as they become due;
 6. CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under paragraph 2.05 as revised from time to time);
 7. CONTRACTOR disregards Laws and Regulations of any public body having jurisdiction;
 8. CONTRACTOR disregards the authority of ENGINEER or OWNER; or,
 9. CONTRACTOR otherwise violates any provisions of the Contract Documents.
- B. OWNER may, after giving CONTRACTOR (and the Surety, if there be one) 7 days' written notice, and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, finish the Work as OWNER may deem expedient, and/or enforce the rights available to OWNER under any applicable Performance Bond.

- C. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, damages and expenses sustained by OWNER arising out of or resulting from completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, damages and expenses exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, damages and expenses incurred by OWNER will be reviewed as to reasonableness by ENGINEER and when so approved, incorporated in a Change Order, but when exercising any rights or remedies under this paragraph, OWNER shall not be required to obtain the lowest price for the Work performed.
- D. Where CONTRACTOR's services have been so terminated by OWNER, the termination shall not affect any rights or remedies of OWNER against CONTRACTOR or its Surety then existing or which may thereafter accrue. Any retention or payment of monies due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 Termination for Convenience

- A. Upon 7 days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):
 - 1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination;
 - 2. for actual expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work; and
 - 3. for reasonable expenses directly attributable to protecting work as a result of termination.
- B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.
- C. Upon such termination, CONTRACTOR shall:
 - 1. Immediately discontinue Work on the date and to the extent specified in the notice except to the extent necessary to protect Work in place;
 - 2. Place no further orders for materials, services, or facilities, other than as may be necessary or required for completion of such portion of Work under the Contract that is not terminated;
 - 3. Promptly make every reasonable effort to obtain cancellation upon terms reasonably satisfactory to OWNER of all purchase orders and subcontracts to the extent they relate to the performance of Work terminated or assign to OWNER those orders and subcontracts and revoke agreements specified in such notice;
 - 4. Reasonably assist OWNER, as specifically requested in writing, in the maintenance, protection and disposition of property acquired by OWNER under the Contract Documents, as may be necessary;
 - 5. Complete performance of any Work which is not terminated; and

6. Deliver to OWNER an affidavit regarding the identity of potential unpaid Subcontractors or Suppliers and the amounts due to each.

15.04 CONTRACTOR May Stop Work or Terminate

- A. If OWNER has failed to pay CONTRACTOR any sum finally determined to be due in accordance with the time limits specified in paragraph 14.05, CONTRACTOR may upon 7 days' written notice to OWNER and ENGINEER, stop the Work until payment of all amounts then due.
- B. If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than 90 days by OWNER, or under an order of court or other public authority, then CONTRACTOR may, upon 7 days written notice to OWNER and ENGINEER and provided OWNER or ENGINEER does not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.03.
- C. The provisions of this paragraph 15.04 shall not relieve CONTRACTOR of his obligations under paragraph 6.22 to carry on the Work in accordance with the Progress Schedule and without delay during disputes and disagreements with OWNER.

Article 16 Final Resolution of Disputes

16.01 Methods and Procedures

- A. Disputes Subject to Final Resolution: The following disputed matters are subject to final resolution under the provisions of this Article:
 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 2. Disputes between OWNER and CONTRACTOR concerning the Work or obligations under the Contract Documents and arising after final payment has been made.
- B. Final Resolution of Disputes: For any dispute subject to resolution under this Article, OWNER or CONTRACTOR may:
 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, the following dispute resolution process shall be followed:
 - a. The parties shall submit the dispute to mediation under the mediation procedures outlined in the Construction Industry Arbitration Rules and Mediation Procedures of the American Arbitration Rules.
 - b. If the dispute is not resolved by mediation, the parties shall proceed to resolve the dispute by arbitration in accordance with the Construction Industry Arbitration Rules and Mediation Procedures of the American Arbitration Association. The decision of the arbitrator(s) shall be final and binding and is enforceable in a court of competent jurisdiction.

Article 17 Miscellaneous

17.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice to OWNER, ENGINEER, or CONTRACTOR, it shall be deemed to have been validly given only if delivered:
 - 1. in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended;
 - 2. by registered or certified mail postage prepaid to, the last business address known to the giver of the notice;
 - 3. or delivered in person to such person by a commercial courier service or otherwise to the recipient's place of business; or
 - 4. by secure file transfer with receipt documentation or other document control software.

17.02 Computation of Time

- A. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday, or on a day made a legal holiday by the Law of the applicable jurisdiction, such day shall be omitted from the computation.

17.03 General

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Law or Regulation, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this paragraph shall be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.
- B. All representations, warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of this Agreement.

17.04 Professional Fees and Court Costs Included

- A. Whenever reference is made to "claims, costs, losses, damages and expenses," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

17.05 Nondiscrimination of Employment

- A. The CONTRACTOR shall covenant and agree not to discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, sex, age, religion, national origin or ancestry, height, weight, or marital status, or any other classification protected by law, and to require a similar covenant on the part of any Subcontractor employed in the performance of the Contract.

17.06 Post Completion Date Engineering and Inspection Costs

- A. All engineering and inspection costs incurred after the specified completion date shall be paid by CONTRACTOR to OWNER prior to final payment authorization. However, CONTRACTOR shall not be charged with any post completion date engineering and inspection costs when the delay in completion of the Work is due to the following and CONTRACTOR has promptly given written notice of such delay to OWNER or ENGINEER:
 - 1. to any preference, priority or allocation order duly issued by OWNER;
 - 2. to unforeseeable causes beyond the control and without the fault or negligence of CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of OWNER, acts of another contractor in the performance of a Contract with OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and,
 - 3. to any delays of Subcontractors or Suppliers occasioned by any of the causes specified in this Article.
- B. Charges after the specified completion date shall be made at such times and in such amounts as ENGINEER shall invoice OWNER, provided, however said charges shall be in accordance with ENGINEER's current rate schedule at the time the costs are incurred. Engineering and inspection costs so incurred shall be deducted from CONTRACTOR's progress payments.

17.07 Waiver of Consequential Damages

- A. CONTRACTOR and OWNER waive Claims against each other for consequential damages arising out of or relating to this Contract or the Work. This mutual waiver includes but is not limited to:
 - 1. damages incurred by OWNER for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
 - 2. damages incurred by CONTRACTOR for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit in connection with any other project or anticipated project.
- B. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination or default. Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. CONTRACTOR also waives any Claim for consequential damages against ENGINEER where such Claims arise out of or relate in any way to the Project or the Contract Documents.

17.08 No Waiver

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.09 Controlling Law

- A. This Contract is to be governed by the Law of the state in which the Project is located.

17.10 Headings

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

End of Section

Supplementary Conditions

These Supplementary Conditions amend or supplement the General Conditions as indicated below. All provisions which are not amended or supplemented remain in full force and effect. The terms used in these Supplementary Conditions have the meanings assigned to them in the General Conditions.

SC – 1.01 Defined Terms

Delete the definition for “Substantial Completion” in paragraph 1.01 of the General Conditions, and insert the following in its place:

Substantial Completion - The Work has progressed to the point where, in the opinion of the OWNER as evidenced by his definitive Certificate of Substantial Completion, it is sufficiently complete in accordance with the Contract Documents such that all concrete sidewalks, driveways, curb and gutter, and pavement have been removed and replaced, and only minor items of restoration remain for final completion.

The terms “Substantially Complete” and “Substantially Completed” as applied to any Work refer to Substantial Completion thereof.

SC – 5.03.D. Additional Insured

Add the following language at the end of paragraph 5.03.D. of the General Conditions:

The name insured on the OWNER's and CONTRACTOR's Protective Policy shall be: City of Dearborn Heights

SC - 5.04. Insurance Limits of Liability

The required limits of liability for insurance coverages requested in paragraphs 5.03 of the General Conditions shall be not less than the following:

SC-5.04.A. Worker's Compensation

Coverage A - Compensation	Statutory
Coverage B - Employer's Liability	
Each Accident	\$ 100,000
Disease - Policy Limit	\$ 100,000
Disease - Each Employee	\$ 100,000

SC-5.04.B. Comprehensive General Liability* - Coverage Shall be Occurrence Form

General Aggregate	\$2.0M / 5.0M **
Products - Com/Ops Aggregate	\$1,000,000
Personal and Advertising Injury	\$ 500,000
Each Occurrence	\$ 500,000
Fire Damage (any one fire)	\$ 50,000
Medical Expense (any one person)	\$ 5,000

SC-5.04.C. Comprehensive Automobile Liability - Coverage Shall
Include Owned, Nonowned, and Hired Autos

Bodily Injury - Per person	\$ 500,000
Bodily Injury - Per Accident	\$1,000,000
Property Damage	\$2.0M / 5.0M **
-or-	
Combined Single Limit	\$2.0M / 5.0M **

SC-5.04.D. OWNER's Protective Liability - Coverage Shall
be Occurrence Form

Policy to be written with City of Dearborn Heights as the insured.

General Aggregate	\$1,000,000
Each Occurrence	\$ 1,000,000

SC-5.04.E. Umbrella or Excess Liability

** For Contracts of \$250,000 or more the CONTRACTOR shall procure and maintain during the life of the Contract, Insurance in the single limit of at least \$5,000,000. For Contracts less than \$250,000 the CONTRACTOR shall procure and maintain during the life of the Contract, Insurance in the single limit of at least \$2,000,000.

CONTRACTOR is granted the option of arranging coverage under a single policy for the full limits required or by a combination of underlying policies with the balance provided by an Excess Liability or Umbrella Liability policy, with the Each Occurrence and the Aggregate limits equal to the total limits requested.

SC-5.06

Delete the second paragraph of paragraph 5.06, Evidence of Coverage, of the General Conditions and insert the following in its place:

Prior to the commencement of the work the CONTRACTOR shall furnish to the OWNER five complete copies of an insurance binder in force for the OWNER's Protective Liability Policy. Within six weeks of the issuance of the binder the CONTRACTOR will deliver to the ENGINEER three complete "originally signed" copies of the OWNER's Protective Liability Policy.

*Certificates shall show that X, C, and U coverage is included.

SC-17.05 Non-Discrimination in Employment

Delete Article 17.05 of the General Conditions and insert the following in its place:

17.05 Employment Law and Title VI Plan Compliance

(a) Employment Law Compliance. Contractor shall, where applicable, employ others within the regulations of all Federal, State and Local laws and ordinances and regulations relating to minimum wages, social security, unemployment insurance, worker's compensation, and other employment laws. Pursuant to the Elliott-Larsen Civil Rights Act, Public Act 453 of

1976, as amended, and the Persons with Disabilities Civil Rights Act, Public Act 220 of 1976, as amended, Contractor shall not discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or a disability unrelated to the individual's ability to perform the duties of a particular job or position. As stated in the preceding sentence, Contractor shall require a similar covenant on the part of any Subcontractor employed in the performance of the Contract. To the extent required by law, Contractor shall post in conspicuous places, available to employees and applicants for employment, notices provided by the appropriate governmental agency(ies) setting forth the fact that Contractor is an "Equal Opportunity Employer", appropriate non-discrimination provisions, and appropriate notices regarding employment rights.

(b) Title VI Plan Compliance. Appendix A is attached hereto and is included as part of the City of Dearborn Heights' obligation to the Michigan Department of Transportation to require Appendix A. Contractor agrees that Appendix A is a material part of the Contract and is incorporated therein by reference. Contractor has the duties and obligations of "Contractor" or "contractor" as set forth in Appendix A. Notwithstanding what is otherwise stated in this paragraph (b), this paragraph (b) only applies and Appendix A is incorporated into the Contract and made a material part of it strictly to the extent that this subsection (b) and Appendix A are actually applicable to the undertakings set forth in the Contract under applicable law.

(c) Non-Compliance. In the event of any breach of any of the non-discrimination covenants set forth in paragraph (a) above and/or the Title VI Plan covenants set forth in paragraph (b) above, the City of Dearborn Heights shall have the right to terminate the Contract, a breach of said covenants in either of these provisions being deemed a material breach of the Contract.

End of Section

APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor shall comply with the Regulations relative to non-discrimination in Federally-assisted programs of the Department of Transportation, Title 49, code of Federal Regulations, Part 21 as they may be amended from time to time (hereafter referred to as the "Regulations") which are incorporated herein by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulation, including employment practices when the contractor covers a program set forth in Appendix B of the Regulations.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the City of Dearborn Heights to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the State highway department, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.
5. **Sanctions for Non-compliance:** In the event of the contractor's non-compliance with the non-discrimination provisions of this contract, the City of Dearborn Heights shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
 - (a) Withholding of payments to the contractor under the contract until the contractor complies, and/or
 - (b) Cancellation, termination, or suspension of the contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the City of Dearborn Heights may direct as a means of enforcing such provision including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the City of Dearborn Heights to enter into such litigation to protect the interests of the City and, in addition, the contractor may request the State highway department to enter into such litigation to protect the interests of the State and/or the United States to enter into such litigation to protect the interest of the United States.

Section 01 1100 Summary of Work

Part 1 General

1.01 Work Covered by Contract Documents

This Project includes Sidewalk and pavement repairs throughout the City of Dearborn Heights. Some of the pavement repairs are due to water main breaks, some are for rehabilitation of existing pavement. All concrete pavement shall have 6-inch Aggregate Base. Major streets will be 8-inch concrete pavement, and local streets will be 7-inch concrete pavement. Excavation, removal and disposal of excess material necessary for construction of the aggregate base course and pavement shall be included in the cost of the aggregate base course and pavement pay items. Integral curb, to match existing curb, is included in the cost of the concrete pavement. The Subgrade shall be compacted to 90% of its maximum unit weight before constructing the concrete sidewalk, driveway or pavement. The Cost is to be included in the respective units of Work. Place epoxy anchored lane tie bars are 40" c/c along the edges of existing pavement. Placed lane tie bars on chairs 40" c/c in all longitudinal and transverse joints. Omit lane tie bars in expansion joints. Expansion joints shall match the existing expansion joints. This Work shall be incidental to the concrete pavement. After removal of forms, area along all edges of the concrete sidewalk, driveways or pavement shall be filled to grade with suitable material and fine graded. Restoration will be complete by the OWNER.

1.02 Work by Others

There is no other work in the Project area, known to the OWNER, which would affect this Contract.

1.03 Right-of-Way Jurisdiction/Permits

Any Work in the Wayne County or MDOT right of way will be performed under the City of Dearborn Height's annual maintenance permits. The CONTRACTOR shall abide by all rules, regulations and requirements of the agency having jurisdiction.

1.04 Coordination

It shall be the responsibility of the CONTRACTOR to coordinate his operations and those of his subcontractors in such a manner so as to avoid interference and delays in the areas of common construction activities.

1.05 CONTRACTOR's Use of Premises

The CONTRACTOR shall maintain his construction operations within the presently existing road rights-of-way and easements throughout the Project area. In the event that the CONTRACTOR deems it necessary or advisable to operate beyond the limits of the existing rights-of-way or easements, he shall be responsible for making special written agreements with the property owners and shall furnish such copies of agreement to the OWNER.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 01 2200 Unit Prices

Part 1 General

1.01 Scope

This Section describes the method of measurement and basis of payment for all items of Work included in the Contract and specified in the Proposal. The CONTRACTOR shall provide all labor, material, tools, equipment and services required to complete the Work specified herein and indicated on the Plans.

THE OWNER WILL MAKE NO ALLOWANCES FOR ITEMS NOT INCLUDED IN THE PROPOSAL.

1.02 Items of the Proposal

Item 1 and 10

Aggregate base course, of the type and thickness specified on the Plans, will be paid for at the Contract Unit Price per ton unit basis. Price paid shall be payment in full for all labor, material, and equipment required for furnishing, placing and compacting the aggregate base course; and shall include, but is not limited to, all excavation, construction and protection of existing improvements; also furnishing, placing, and compacting backfill and subbase; compacting and fine grading subgrade; barricading; and for all items necessary to complete the job, whether specifically mentioned or implied.

Measurement for aggregate base course will be in tons, with the installed tonnage determined by certified delivery tickets submitted to the ENGINEER or his duly authorized representative. The delivery tickets shall indicate the scale weight of the material, including chemical additives and moisture content. For material having a moisture content in excess of six (6) percent, the excess over six (6) percent will be deducted from the scale weight of the material. Material placed to conform to the cross section and width specified on the Plans or as determined by the ENGINEER will be paid for at the tonnage basis. If the width of the base course is increased to accommodate the CONTRACTOR in placing forms, etc., the additional material installed beyond the width specified on the Plans or as determined by the ENGINEER, will be at the CONTRACTOR's expense.

Item 2 and 11

Removal and replacement of the concrete curb and gutter will be paid for at the Contract Unit Price per linear foot. Price paid shall be payment in full for all labor, material, and equipment necessary for the removal and replacement of the concrete curb and gutter, and shall include, but is not limited to, all saw cutting, excavation, protection of existing improvements; also compacting and fine grading subgrade; furnishing, placing, and compacting backfill and subbase; construction of expansion joints; also providing and installing hook bolt assemblies; also forming, placing, jointing, finishing and curing the concrete; providing protection against rain and cold weather; backfilling; barricading; restoration; and for all items necessary to complete the job, whether specifically mentioned or implied. Measurement for removal and replacement of the concrete curb and gutter section will be in linear feet, field measured in place.

Item 3, 4, 12, and 13

Removal and replacement of concrete pavement, of the type and thickness specified, will be paid for at the Contract Unit Price per square yard. Price paid shall be payment in full for all labor, material, and equipment required for removal of existing pavement and replacing with concrete

pavement as shown on the plans or specified, and shall include, but is not limited to, all saw cutting, excavation, removal and disposal of existing pavement and unsuitable material; also furnishing, placing and compacting backfill; also furnishing and installing hook bolt assemblies, tie bar assemblies, and reinforcing steel; also forming, placing, jointing, finishing and curing the concrete; providing protection against rain and cold weather; protection of existing improvements; barricading; restoration; and all other items necessary to complete the job, whether specifically mentioned or implied. Measurement for removal and replacement of concrete pavement will be by square yard field measured in place.

Item 5, 6, 7, 14, 15, and 16

Removal and replacement of sidewalks, sidewalk ramps and driveway approaches, with the thickness specified, will be paid for at the Contract Unit Price per square foot. Price paid shall be payment in full for all labor, material, and equipment necessary for the removal and replacement of the sidewalk, sidewalk ramps, and driveway approaches; and shall include, but is not limited to, all saw cutting, excavation, protection of existing improvements and removal and disposal of unsuitable material; also compacting and fine grading subgrade; furnishing, placing, and compacting backfill and subbase; construction of expansion joints; also forming, placing, jointing, finishing and curing the concrete; construction of detectable warning; providing protection against rain and cold weather; backfilling; barricading; restoration; and all other items necessary to complete the job, whether specifically mentioned or implied. Measurement for removal and replacement of the sidewalk, sidewalk ramps and driveway approaches will be in square feet, field measured in place. Sidewalk ramps will be measured from back of curb to the key flag or to the end of the monolithic rolled curb whichever is less.

Item 8 and 17

Adjusting structures will be paid for at the Contract Unit Price per each. Price paid shall be payment in full for all labor, material, and equipment required to either raise the frame and cover on an otherwise sound structure not more than 12 inches; or lower them not more than six (6) inches; and shall include, but is not limited to, all excavation, construction, bricks, blocks, precast adjustment rings, masonry plaster coat, sand backfill, installation of frame and cover, cleanout of structure, and all items necessary to complete the job, whether specifically mentioned or implied. Adjusting structures will be measured on a per each unit basis for each structure adjusted.

Item 9 and 18

Reconstruct structure will be paid for at the Contract Unit Price on a vertical foot unit basis. Price paid shall be payment in full for all labor, material, and equipment required to either raise the frame and cover in excess of 12 inches, lower them in excess of six (6) inches, or to rebuild portions of the existing structure which need to be reconstructed due to deterioration; and shall include, but is not limited to, all excavation, construction, bricks, blocks, adjustment rings, joints, masonry plaster coat, sand backfill, installation of frame and cover, cleanout of structure, and all items necessary to complete the job, whether specifically mentioned or implied. Measurement for reconstruction of structures will be in vertical feet, measured from the new elevation of the masonry below the casting down to the point where the structure has been reconstructed. A structure which has been paid for as reconstruct structure will not be paid for as adjust structure.

Item 19 and 20

Storm sewers and culverts, of the type and diameter specified on the Plans, in open cut trench will be paid for at the Contract Unit Price per linear foot. Price paid shall be payment in full for all labor, material, and equipment necessary for storm sewer pipe and culvert pipe in open cut trench and shall include but is not limited to, all excavation, sheeting, shoring, bracing, and dewatering, construction, protection of existing improvements, sand backfill, sand, stone or concrete pipe bedding, placing and removing of stoppers and bulkheads, final inspection which includes cleaning, stubs in drainage structures, connection to drainage structures and sewers, end sections,

barricading, restoration, cleanup and all other items necessary to complete the job, whether specifically mentioned or implied.

Measurement for storm sewers and culverts in open cut trench, will be in place, by length in linear feet, from center to center of end standard manholes, standard catch basins, standard inlets, headwalls, or other standard drainage structures, with no deduction in length for intermediate standard structures. However, where tee manholes or where special bid items, as indicated in Plans and Specifications, having a basis of payment of lump sum, are involved, the measurement will be from the end of the tee manhole or from the end of the special bid item nearest the adjoining drainage structure and the adjoining drainage structure.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 33 4100

Storm Utility Drainage Piping

Part 1 General

1.01 Scope

This Section includes storm sewer Work indicated on the Plans complete with pipes, joints, structures, pipe bedding, final inspection and appurtenances.

1.02 Related Work Specified Elsewhere

1. Unit Prices: Section 01 2200
2. Mortaring and Grouting: Section 04 0511
3. Dewatering: Section 31 2319
4. Structural Excavation and Backfill: Section 31 2316
5. Trenching and Backfilling: Section 31 2333
6. Tunneling and Mining: Section 31 7000

1.03 Reference Standards

Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:

ANSI- American National Standard Institute

ASTM- ASTM International

AASHTO- American Association of State Highway Transportation Officials

MDOT- Michigan Department of Transportation, Standard Specifications for Construction, latest edition

NCPI- National Clay Pipe Institute

1.04 Source Quality Control

Laboratory test not less than one (1) percent, with a minimum of three (3) pieces each size, material and class of gravity pipe required in the Work.

1.05 Submittals

Submit a complete field report of the location of all wye openings and sump pump discharge leads to the ENGINEER at the end of each sewer section of the Project or on the last day of each week, whichever occurs first.

Submit two (2) copies of the laboratory test reports required per Article 1.04 of this Section to the ENGINEER.

Complete Shop Drawings for all manhole tees shall be submitted to the ENGINEER.

Submit shop drawings and design information for all precast concrete box sections.

1.06 Storage of Materials

Piping material shall not be stacked higher than four (4) feet (1.2 m) or as recommended by the manufacturer, whichever is lowest. Suitable racks, chairs, and other supports shall be provided to protect preformed pipe mating surfaces from damage. Store bottom tiers off the ground, alternate tiers and chock tier ends.

Jointing and sealing materials used in the storm sewer system shall be protected from sunlight and stored in as cool and clean a place as practicable until ready for application.

1.07 Handling of Material

Load and unload materials using suitable approved equipment. Material shall not be dropped, bumped or allowed to impact against itself. Damaged material shall be rejected by the ENGINEER.

Lifting devices shall be suited to the Work and shall protect surfaces from damage.

Part 2 Products

2.01 Materials

It is the intent of the Articles in Part 2 of this specification section is to specify in detail the various types of sewer pipe, joints, manholes, etc. which have been indicated throughout the Plans and Specifications. These Articles shall not be construed as allowing any alternate type of material to that which is indicated on the Plans or elsewhere in the Specifications.

2.02 Clay Pipe

Clay pipe shall conform to ASTM C700, extra strength vitrified clay pipe.

Premium joints shall be compression type joints conforming to ASTM C425.

When not specified, joints shall be made with cold applied pipe joint sealer. See Article 2.07 for requirements for cold applied pipe joint sealer.

2.03 Nonreinforced Concrete Pipe Systems

Pipe shall conform to ASTM C14 Class III nonreinforced concrete sewer pipe.

When not specified, pipe joints shall be made with cold applied pipe joint sealer. See Article 2.07 for requirements for joints.

2.04 Reinforced Concrete Pipe

Reinforced concrete pipe shall conform to ASTM C76. Twelve (12) inch thru 30-inch (300 mm thru 750 mm) diameter pipe shall be Class II thru V, Wall B or Wall C, circular reinforced. Thirty-six (36) inch through 108-inch (900 mm thru 2700 mm) diameter pipe shall be Class I through V, Wall B or Wall C, circular reinforced or elliptical reinforced.

When elliptical reinforcement is used, the following method of indexing the steel and the pipe barrel shall be used.

A dummy lift pin form shall be set in the outer pipe wall form projecting into the pipe wall a minimum of 1-3/4 inches (45 mm) and a maximum of 2-1/4 inches (55 mm). An additional spacer chair shall be welded to the elliptical steel cage at the proper location so as to engage the dummy lift pin form during the pipe casting operation.

It is the intent of the spacer chair and dummy lift pin arrangement to provide a means of assuring the final position of the elliptical steel cage within the barrel of the pipe and, further, for providing a means of indexing the pipe in the field to assume proper placement of the pipe.

Prior to shipment of the elliptically reinforced pipe, they shall be striped along the inside top with a minimum 1-inch (25 mm) wide indelible marker so that final inspection of the pipe orientation can be made following completion of the installation.

For circular pipe 114 inches (2850 mm) or larger in diameter, the design information in accordance with Section 6 of ASTM C76, shall be submitted to the ENGINEER for approval, prior to fabrication.

The design of all pipes shall meet the d-load requirements for the class of pipe indicated on the Plans.

When not specified, pipe joints shall be made with cold applied pipe joint sealer. See Article 2.07 for requirements for joints.

2.05 Reinforced Concrete Elliptical Pipe

Reinforced concrete elliptical pipe shall conform to ASTM C507.

When not specified, pipe joints shall be made with cold applied pipe joint sealer. See Article 2.07 for requirements for joints.

2.06 Precast Concrete Box Section

Precast concrete box sections shall meet the requirements of ASTM C1433. Unless specified otherwise, CONTRACTOR shall use the same design conditions as exist at the time of construction or as planned for future development.

2.07 Joints for Concrete or Clay Pipe

A. Sealed Joints

When not specified, pipe joints shall be made with cold applied pipe joint sealer. Cold-applied pipe joint sealer shall conform to MDOT Section 909.09. The bituminous material shall be of such consistency that it may be spread on the joints with a trowel when the temperature of the air is between 20 degrees F and 100 degrees F (-10°C and 40°C).

The bituminous material shall adhere to the pipe so as to make a watertight seal and shall not flow, crack or become brittle when exposed to the atmosphere.

B. Premium Joints

Premium joints for circular pipe shall conform to ASTM C443 limited as follows: Section 5.1 of C443, "Physical Requirements for Gaskets," shall be replaced with Section 6.9 of C361, "Rubber Gaskets." Also, Section 5 of C443 shall be limited to a modified grooved tongue to receive a rubber gasket.

Premium joints for elliptical pipe shall conform to ASTM C877, external sealing bands for non-circular concrete pipe. The width of the sealing bands shall be at least equal to twice the depth of the groove. For modified bell tongue and groove pipe, use the next larger gasket. The length of the sealing bands shall be equal to the outside circumference of the pipe at its largest diameter plus an amount equal to the width of the gasket to be used.

Only lubricant, as supplied by the pipe manufacturer, shall be used on the groove and on the tongue in making up joints, and the joints shall be coupled in accordance with the pipe manufacturer's requirement.

The inside annular space of all concrete pipe 36-inch (900 mm) diameter (or equivalent) and larger shall have the inside annular space filled with cement mortar and troweled flush. Mortar shall consist of 1-part Portland cement and two (2) parts of plaster sand. Mortar for inside joints shall be mixed with only enough water for "dry packing."

2.08 Corrugated Metal Pipe

A. Galvanized Corrugated Metal Pipe

Corrugated galvanized steel pipe with circular cross section and corrugated galvanized steel pipe with pipe-arch shape shall conform to the requirements of AASHTO M36, and as specified in MDOT Section 909.05. Helical corrugated pipe shall have a minimum of two (2) circumferential corrugations rerolled on each end of each section of pipe.

B. Polymeric Coated Corrugated Galvanized Steel Pipe

Polymeric coated corrugated galvanized steel pipe with circular cross section and polymeric coated corrugated galvanized steel pipe with pipe-arch shape shall conform to the requirements of AASHTO M245, and as specified in MDOT Section 909.05. Helical corrugated pipe shall have a minimum of two (2) circumferential corrugations rerolled on each end of each section of pipe.

C. Aluminized Type 2 Corrugated Metal Pipe

Type 2 aluminized corrugated steel pipe with circular cross section and corrugated steel pipe with pipe-arch shape shall conform to the requirements of AASHTO M36, AASHTO M274, Type 2 and as specified in MDOT Section 909.05. Helical corrugated pipe shall have a minimum of two (2) circumferential corrugations rerolled on each end of each section.

D. Corrugated Aluminum Alloy Pipe

Corrugated aluminum alloy pipe with circular cross section and corrugated aluminum alloy pipe with arch-pipe shape shall conform to the requirements of AASHTO M196 and MDOT Section 909.05.

E. Joints for Corrugated Metal Pipe

The joints for corrugated metal pipe shall be made by use of coupling bands. The coupling bands shall be of the same material as specified for the pipe and shall prevent infiltration of the side fill material. Coupling bands shall be corrugated to match the corrugations of the pipe to be jointed, and shall include two (2) "O" ring neoprene gaskets for each joint. Dimple bands shall not be used. All joints shall be wrapped with a 3 foot (1 m) wide geotextile filter fabric centered on the joint.

When called for in the Contract Documents, joints shall have bell and spigot coupling system and rubber gasketed joint.

2.09 Dual Wall Corrugated PVC Pipe – Smooth Interior

Pipe shall be a single extrusion of PVC with smooth interior and corrugated outer walls. Corrugated outer profile shall be annular and seamless. Pipe and fittings shall be in accordance with ASTM F949. Joints shall be bell and spigot

type with a elastomeric gasket meeting the requirements of ASTM F477 and be suitable for storm sewer service.

Wyes or tees shall be a molded wye or tee fitting per ASTM F949, with gasketed joints on each end suitable for directly inserting in the mainline pipe. Branch connection fitting shall be a gasketed joint suitable for the house lead pipe specified. Saddle connections are not allowed.

Acceptable manufacturers of Dual wall corrugated pipe include Contech A2000, Uponor ETI Ultra-Corr or ENGINEER approved equal.

2.10 Corrugated Polyethylene Pipe

A. Smooth-Lined Corrugated Polyethylene Pipe

Smooth lined corrugated polyethylene pipe shall meet the requirements of MDOT section 909.06 and AASHTO M252, Type S for sizes 4" to 10" diameter, and AASHTO M294 Type S for 12" to 48" diameter.

Fittings shall conform to the corresponding pipe specification and be constructed of the same material classification as the pipe. Fittings shall be welded on the interior and exterior at all junctions.

Joints shall be bell & spigot type with rubber gaskets on both sides of the joint conforming to MDOT section 909.03 and ASTM F477. Split collar couplers are not allowed. Joints shall be watertight meeting the performance requirements of ASTM D3212.

B. Corrugated Plastic Edge Drain / Underdrains.

Corrugated plastic tubing for edge drains or underdrains shall meet the requirements of AASHTO M252 for polyethylene tubing. Pipe shall be wrapped in a Geotextile Pipe Wrap per MDOT Section 910.03.A.

2.11 Smooth Plastic Pipe

Smooth plastic pipe for underdrains shall be polyvinyl chloride PVC meeting the requirements of AASHTO M278. Pipe shall be wrapped in a Geotextile Pipe Wrap per MDOT Section 910.03.A.

2.12 Structural Plates for Field Assembly of Pipe, Pipe-Arches, and Arches

The plates, bolts and nuts to be used in field assembled circular pipe, pipe-arches and arches shall meet all applicable requirements of AASHTO M167 and as specified in MDOT Section 909.

2.13 End Sections

The precast concrete end section shall conform to ASTM C76, Class II and as specified in MDOT Section 909.04. The joint for connection to pipe shall be by means of a standard tongue and groove with cold-applied pipe joint sealer. See Article 2.07 of this Section for requirements for the cold-applied pipe joint sealer.

Metal end sections shall conform to MDOT 909.05. See Article 2.08 for requirements for joints.

2.14 Storm Structures

Materials for storm sewer structures shall conform to the requirements indicated on the Plans and as specified below.

A. Concrete Brick

Concrete brick shall be ASTM C55, Grade S-II, solid units of nominal 3-inch (75 mm) thickness.

B. Concrete Block

Block shall conform to ASTM C139, manufactured of Portland cement conforming to ASTM C150, Type II. Blocks shall be solid curved blocks with the inside and outside surfaces parallel and curved to the required radii. The blocks shall have a groove or other approved type of joint at the ends. Blocks intended for use in the cones or tops of manholes shall have such shape as may be required to form the structure as indicated on the Plans.

C. Precast Concrete

Precast concrete manhole, flat top slabs, risers, cone, bases, grade rings, transition sections and bottom sections shall conform to ASTM C478, and shall be circular with circular reinforcement. For depths greater than 32-feet, the manhole shall be designed for the earth loading at the design depth of bury with a factor of safety of 1.5. Base slab shall be

minimum eight (8) inches (200 mm) thick for depths up to 25 feet (7.5 m) and minimum 12 inches (300 mm) thick for depths greater than 25 feet (7.5 m).

Transition sections, reducers and flat top slabs shall be designed for the earth loading at the design depth of bury with a factor of safety of 1.5.

Precast concrete manhole tee units shall conform to ASTM C76, Class IV and shall be circular with circular reinforcement. Shop Drawings shall be provided for all manhole tees. The joints on the precast manhole tee shall be the same as the joints on the storm sewer section.

D. Manhole Steps

Cast iron manhole steps shall conform to ASTM A48, Class 30, gray iron with a minimum cross section dimension of 1-inch (25 mm) in any direction.

Steel reinforced plastic steps shall be of suitably approved co-polymer polypropylene conforming to ASTM D4101, PP0344B33534Z02 with 1/2 inch (12 mm) minimum diameter deformed reinforcing bar conforming to ASTM A615, Grade 60.

Manhole steps shall be of the type and size indicated on the Plans and shall comply with applicable occupational safety and health standards. Manhole steps shall be installed at locations indicated on the Plans.

E. Frames and Covers

Frames and covers for manholes, catch basins, and inlets shall conform to ASTM A48, Class 30, gray iron and shall be of the types and sizes as indicated on the Plans. The castings shall be neatly made and free from cracks, holes and other defects. Surfaces of casting shall be ground to assure proper fit and to prevent rocking.

2.15 Concrete

In accordance with MDOT Section 701, use Grade S2; 3,500 psi (24 MPa) strength; Type IA cement; 6.0 sacks cement per cubic yard (335 kg/m³); 6A coarse aggregate; 2NS fine aggregate; 6.5% ± 1.5%

air content; 3-inch (75 mm) maximum slump; no admixtures without the ENGINEER's approval.

2.16 Concrete Reinforcement

In accordance with MDOT Section 905, use ASTM A615, Grade 60 for bars and ASTM A185 for welded wire fabric.

Part 3 Execution

3.01 Verification of Excavation and Bedding

Prior to the installation of any storm sewer piping, structures, or materials, examine all trenches and other excavations for the proper grades, lines, levels and clearances required to receive the new Work. Ascertain that all excavation bottoms, compacted subgrades and pipe bedding are adequate to receive the storm sewer materials to be installed. Correct all defects and deficiencies before proceeding with the Work.

3.02 Existing Storm Sewers and Drains

Expose the existing storm sewer and structures to which the new Work is to be connected and notify the ENGINEER of same. The ENGINEER will verify the vertical and horizontal locations of the existing system and shall inform the CONTRACTOR as to the necessary adjustments required to align the new storm sewer Work with the existing system.

3.03 Preparation

The outside surface of the spigot end and the inside surface of the bell end of the pipe shall be cleaned and free of any foreign materials, other than the sealant recommended by the manufacturer, prior to installation.

All pipe, frames, covers, accessories, and appurtenances shall be examined carefully for damage and other defects immediately prior to installation. Defective or damaged material shall be rejected and removed from the Project by the CONTRACTOR.

3.04 Installation - General

Each section of pipe, when placed to grade and line, shall have firm bearing on the trench bedding throughout its length.

Cutting of pipe shall be done with approved tools and by approved methods suitable for the pipe material. Pipe cutting methods that produce a smooth, square-cut end without damage to the pipe and that minimize air-borne particles, shall be employed. Pipe cutting shall be performed using the recommendations of the manufacturer of the type of the pipe materials being cut and according to the best trade practices. When cutting pipe, care shall be taken to prevent damage to the interior and exterior surfaces. Damage to either shall be cause for rejection of a complete section of pipe.

During the preparation of the pipe bedding and until the trench has been satisfactorily backfilled, the trench shall be kept free of water. A dewatering system, in accordance with Section 31 2319, Dewatering, shall be provided and maintained by the CONTRACTOR. The dewatering system shall remain in operation until the trench is backfilled.

Backfill shall be as indicated on the Plans and as specified in Section 31 2333, Trenching and Backfilling.

3.05 Pipe Laying

Installation of pipe shall conform to ASTM C12, and as recommended by the pipe manufacturer. The pipe shall be protected during handling against impact shocks and free fall. Hooks shall not be permitted to come in contact with premolded joint surfaces.

Pipes having premolded joint rings or attached couplings shall be handled so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material. Care shall be taken to avoid dragging any pipe on the ground or allowing it to be damaged by contact with gravel, crushed stone, or other hard objects.

All pipe shall be laid to the line and grade called for on the Plans. Each pipe as laid, shall be checked by the CONTRACTOR with line and grade pole or laser system to insure that this result is obtained. When employing a laser system, the CONTRACTOR shall have an independent and alternate means of checking the line and grade.

The finished work shall be straight and shall be sighted through between manholes.

Construction shall begin at the outlet end and proceed upgrade with spigot ends pointing in direction of flow. Bell holes shall be excavated so that the full length of the barrel will bear uniformly on the bedding material.

Lubricants, primers or adhesives as recommended by the pipe or joint manufacturer shall be used immediately prior to jointing.

The pipe shall be centered in the bells or grooves and pushed tight together to form a smooth and continuous invert. After laying of pipe, care shall be taken so as not to disturb its line and grade. Any pipe found off grade or out of line shall be re-laid properly by the CONTRACTOR.

Mechanical means shall be used for pulling home all pipe where manual means will not result in pushing and holding the pipe home. Mechanical means shall consist of a cable placed inside of the pipe with a suitable winch, jack, or come along for pulling the pipe home and holding the pipe in position.

Circular concrete pipe with elliptical reinforcement shall be installed with the lift holes to the top of the pipe. The manufacturer's marks designating the top and bottom of the pipe shall not be more than five degrees from the vertical plane through the longitudinal axis of the pipe. After the pipe is installed, the lift holes shall be sealed with suitable concrete plugs.

Type HE elliptical pipe shall be installed with the longer axis placed horizontally within a tolerance of $\pm$ five degrees.

Type VE elliptical pipe shall be installed with the longer axis placed vertically within a tolerance of $\pm$ five degrees.

3.06 Pipe Bedding

After the bottom of trench has been excavated the pipe bedding material will be installed in accordance with Section 31 2333, Trenching and Backfilling. The pipe shall then be installed strictly in accordance with the manufacturer's recommendations. After the pipe is laid, the bedding shall be continued above the pipe as

specified in Section 31 2333, Trenching and Backfilling. Particular care shall be taken to assure filling and tamping all spaces under, around and above the top of the pipe.

A continuous and uniform bedding as specified in Section 31 2333, Trenching and Backfilling, shall be provided in the trench for all buried pipe.

3.07 Underdrains

The pipe shall be laid in close conformity with the lines or grades shown on the Plans or established by the ENGINEER. The upgrade ends of all underdrains shall be closed with suitable plugs to prevent entry of soil or other foreign material.

Perforated pipe shall be laid with the perforations down.

Underdrains shall be bedded in MDOT open graded drainage course material. The bedding shall have a minimum thickness beneath the pipe of four (4) inches (100 mm), a minimum width of six (6) inches (150 mm) on each side of the pipe and extend to a level not less than 12 inches (300 mm) above the top of the pipe.

The bedding shall be placed equally on both sides of the underdrain at the same time. Staking or other methods to restrain the pipe may be necessary during the backfilling operation to maintain the line and grade of the underdrain.

Rodent screens and outlet endings are required for all underdrains which terminate in a ditch or swale.

3.08 Storm Structures

Construct storm sewer manholes, catch basins, inlets and other structures to the grades, lines and levels indicated on the Plans and as specified. Structures shall be complete with concrete bases, reinforcing, frames, covers, adjustment bricks, etc., as shown and as required for a complete installation. Storm sewer structures shall conform to the type of material and dimensions indicated on the Plans.

Cast-in-place structures shall be constructed in accordance with Section 03 3000, Cast-In-Place Concrete.

A. Block Structures

Construct concrete block structures in the locations and according to the details on the Plans. The first course of concrete blocks shall be placed on the prepared base or footings in a full bed of mortar. Mortar joints shall be full and close in all courses. Courses shall be level throughout. Stagger joints in adjoining courses by one-half the length of the block as nearly as practicable. Joints shall be uniform in thickness throughout the structures. Strike all joints and properly point to provide true, smooth surfaces.

B. Precast Concrete Structures

Construct precast concrete structures as detailed on the Plans. Provide mortar joints struck smooth. Provide three (3) to five (5) courses of 8-inch (200 mm) brick or concrete grade rings at top of structure for future adjustment of castings.

A cement mortar plaster coat shall be applied to the exterior surfaces of the brick and block sections of all storm structures as indicated on the Plans. Plaster coat shall be 1/2 inch (10 mm) thick.

Provide and install all frames and covers to the elevations indicated on the Plans. Castings shall be set in a full bed of cement mortar 1/2 inch (10 mm) thick, minimum. Mortar joints shall be struck smooth.

Steps shall be installed at the plant by the manufacturer of precast units. Field install steps for brick, block, or cast in place structures of the types and in the locations indicated on the Plans.

Pipe up to 42 inches (1050 mm) in diameter, shall be connected to storm structures using a grouted joint, as indicated on the Plans. The pipe shall be properly supported, so that any settlement will not disturb the connection.

For pipe, 48 inches (1200 mm) in diameter or larger, the pipe shall be installed as an integral part of the manhole which shall be constructed of 3,500 psi (24 MPa) concrete and reinforcing, as indicated on the Plans.

Manhole tees, as indicated on the Plans, may be used for pipe 42 inches (1050 mm) in diameter or larger. Connection to manhole tees shall be made

using tees and pipe having the same type of joint. The pipe and tee shall be properly supported with concrete as indicated on the Plans.

Sump shall be provided, as indicated on the Plans, in all catch basins and storm manholes having outlets of 18 inches (450 mm) in diameter or less.

Flow channels shall be constructed in all structures not requiring a sump and shall be constructed as indicated on the Plans.

3.09 Field Quality Control

After all the pipe and structures have been laid, constructed and backfilled, the system shall be final inspected. The sewer system shall be ready for the final inspection within two (2) weeks after the completion of each 2,000-foot (600 m) section of sewer installed.

The final inspection shall consist of a visible and audible check of the sewers and structures to ascertain that the steps have been placed, all lift holes jointed, the channeling of the manhole bottoms completed, all visible or audible leaks stopped, all pipe has been placed straight and true to the proper slopes and elevations, the required brick courses for adjustment, the frame and cover properly installed, the required end section installed, all trenches and structures backfilled in a workmanlike manner and that the system has been thoroughly cleaned.

The final inspection shall be considered complete when all the repairs have been made.

3.10 Deflection Test for Plastic Pipe

Plastic pipe shall be tested for deflection, but no sooner than 30 days following the backfilling of the pipe. Maximum allowable deflection (reduction in vertical inside diameter) shall be five (5) percent. Locations with excessive deflection shall be excavated and repaired by re-bedding and/or replacement of the pipe. Optional devices for testing include a deflectometer, calibrated television or photography, or a properly sized "go, no-go" mandrel or sewer ball. Mandrel shall have a minimum of nine (9) legs.

3.11 Remove Storm Sewer

Excavate and remove the existing storm sewer where indicated on the plans. Bulkhead the

opening in storm sewers or structures where the existing storm sewer has been removed. Where removal of existing storm sewer is occurring in essentially the same location as a new sewer or structure, the removal of the existing sewer is incidental to the project.

3.12 Remove Culverts

Excavate and remove culverts where indicated on the plans. Backfill the completed work as specified under "Backfilling Trenches" in Section 31 2333, Trenching and Backfilling.

3.13 Remove Structure

Excavate and remove structures where indicated on the plans. Bulkhead the ends of any sewers remaining in place. Backfill the completed work as specified under "Backfilling Trenches" in Section 31 2333, Trenching and Backfilling. Removal of existing storm structures is incidental to the project if a new structure or sewer is being constructed in essentially the same location.

3.14 Remove and Replace Storm Sewer

Remove and replace storm sewer shall consist of the complete removal and disposal of the existing sewer and replacement with the size and type of sewer as called for on the plans or specified. All materials and installation shall be in accordance with the requirements of this section and Section 31 2333, Trenching and Backfilling, as applicable.

3.15 Remove and Replace Storm Structure

Remove and replace storm structure shall consist of the complete removal and disposal of the existing structure and replacement with the size and type of structure as called for on the plans or specified. All materials and installation shall be in accordance with the requirements of this section and Section 31 2333, Trenching and Backfilling, as applicable.

End of Section

MCA Tech Bulletin

Preventing Scaling of Concrete with Portland Limestone Cement

In recent years the construction industry has experienced an increase in the acceptance and adoption of new cement types to reduce the environmental impact of building materials. In Michigan, the first wave arrived in 2022 with the transition from Type I Cement (ASTM C150) to Type IL Cement or Portland Limestone Cement (PLC) (ASTM C595), which is a blended cement with 5% to 15% limestone. This transition warrants revisiting the discussion on concrete scaling and how to prevent concrete scaling.

Scaling, as defined by the American Concrete Institute (ACI) Committee 116, is the “local flaking or peeling away of the near-surface portion of hardened concrete or mortar.” This may also be called mortar flaking when it occurs just over the aggregates near the surface. Scaling is primarily a physical action created by hydraulic pressures or stresses from repeated freeze-thaw cycles within the concrete. The expansive forces caused by the formation of ice are exacerbated with deicing chemicals, which increase both the saturation of the concrete and the number of freeze-thaw cycles. The distress mechanisms of scaling are complex on both a microscopic and macroscopic level.

The State of Michigan is in a “severe exposure” climate where exterior concrete is subjected to i) continuous moisture, ii) cycles of freezing and thawing, and iii) the use of deicing chemicals. Therefore, exterior concrete must be proportioned with durable ingredients designed for this type of climate, with an entrained air-void system, and such concrete must be placed using proper placement, finishing, and curing and protection to resist hydraulic pressures (stresses) that can cause scaling.

Severity of Scaling

ACI 116R classifies scaling as:

- Light (loss of surface mortar without exposure of coarse aggregate)
- Medium (loss of surface 0.2 to 0.4 in. in depth and exposure of coarse aggregate)
- Severe (loss of surface 0.2 to 0.4 in. in depth with some loss of mortar surrounding aggregate particles 0.4 to 0.8 in. in depth)
- Very Severe (loss of coarse aggregate particles as well as surface mortar, generally to a depth greater than 0.8 in.)

Causes

The most common causes of scaling are related to one or a combination of the following factors:

- **Curing.** Lack of, or inadequate, curing and protection after placing concrete may compromise the surface of newly placed concrete. Do not let the concrete surface dry out after placement. Cement reacts with the water in the mix. Once the water is gone, the chemical reaction stops and the concrete stops gaining strength. A surface that dries out before it reaches strength will be weak. Curing compounds and/or secured plastic sheeting can be used to keep the surface from drying during the first few days, allowing it to gain full strength. Curing is always critical, but it is more critical on a comfortable feeling, low humidity days than on hot humid days.
- **Finishing.** Improper finishing operations that work or trap water at the surface, resulting in a high water-cementitious ratio and low strength, creating a low-durability surface layer may cause scaling. Delayed or extended finishing will also allow early drying of the exposed concrete surface, prior to curing application, which can result in a weak surface.
- **Air-Entrainment.** The use of non-air-entrained concrete or too little entrained air, resulting in a non-durable concrete mix may cause scaling. A poor air-void system may also be created at the surface via over-manipulation of the plastic concrete during finishing operations.

- **Water-Cement Ratio.** Using concrete with low strength or excessively high water-cementitious ratio will allow for deeper penetration of water and deicing chemicals that can cause scaling.



Examples of scaling (left, light severity, sometimes called mortar flaking; and right, medium severity)

- **Freeze-Thaw Cycles.** Exposure of new concrete to freeze-thaw cycles before it has been adequately cured, and not allowed to air dry may cause scaling of concrete.
- **Deicers.** Exposure to aggressive/corrosive salts and fertilizers may cause scaling. Intentional application or indirect exposure (from vehicle traffic) to deicing chemicals at this early age greatly increases the likelihood of scaling. Never use calcium or magnesium-based deicers on concrete. Sodium chloride (table salt, rock salt, or safe salt) may be used in moderation to melt the ice. Instead, consider using sand for traction over snow and ice.
- **Supplemental Cementitious Materials (SCMs).** Misunderstanding the use of SCMs may lead to scaling. Properly designed, finished, and cured mixes containing SCMs have the same resistance to scaling as 100% Portland limestone cement mixes. SCMs generally improve strength, durability, and water tightness. However, they also extend the concrete set time. Understanding set time and when to perform the varying finishing operations is crucial to the overall durability of a mix containing SCMs.

Preventing / Minimizing Scaling

It is important to note that all concrete surfaces will wear and scale to some extent over their lifetime. The use of preventative measures to mitigate the potential for scaling when placing concrete is critical to achieving a quality concrete project that will stand the test of time. Please see below for a list of best practices to prevent and minimize the potential of scaling.

1. **Concrete Mix Design.** Use a *“severe exposure” concrete mix* including:
 - **Cement.** For residential and commercial flatwork concrete mixes should include:
 - Minimum 4,000 psi compressive strength (consistent with the requirements of ACI 332, Code for Residential Concrete).
 - When slag cement is utilized in flatwork, the concrete mix should contain a minimum cementitious content of 564 lb/yd³.
 - **Aggregates.** Use durable and well-graded aggregates and ensure that stockpiles are kept moistened at or above the saturated surface dry (SSD) condition at the time of batching.
 - **W/C ratio.** Low water-cementitious ratio of 0.45 or less.
 - **Air Entrainment.** 5% to 8% entrained air for 3/4 to 1-inch top size aggregates.
 - **Slump.** Slump can be increased to 5-7 inches using a Mid-Range or High Range Water Reducer, which will also increase the workability of the concrete.
 - **Accelerator.** Using a non-chloride accelerator will help in the consistency of the setting of the concrete during cold weather placement.
 - **Retarder.** When the conditions are prime for rapid evaporation of bleed water on the surface that can contribute to plastic shrinkage cracking, an evaporation retarder should be used.
 - **Fibers.** Mono filament and fibrillated fiber can be used to help with the consistency of bleed and plastic shrinkage cracking.
1. **Placement and Finishing Practices.** Utilize proper placement and finishing practices. The best practice for exterior concrete consists of i) placing and consolidating the concrete in the forms, ii) then striking off the surface to final grade, and iii) smoothing/flattening with a float to fill in any holes in the surface.

As the concrete surface starts to stiffen or set up, a final texture is achieved with a burlap drag, light broom, or a patterned stamp. The water in fresh concrete gives the surface a glossy sheen. During the finishing process this sheen dissipates as the surface water evaporates. A curing membrane shall be applied as soon as the surface sheen starts to disappear. During the finishing process it is acceptable to lightly mist the surface (if needed) to replace water that has evaporated, but it is not acceptable for the finishers to mix water into the surface with their finishing tools – this practice leads to a weak concrete surface with a high chance of scaling.
2. **Curing.** Curing is the maintenance of moisture and temperature directly following finishing so that properties such as strength and durability develop, especially at the surface. Curing requirements also include protection from either excessive hot or cold temperatures.

Apply white curing compound as soon as the finishing and texturing process has been completed. The white curing compound provides a waxy coating on the concrete surface, is the easiest to use, and the white color ensures complete coverage is achieved. Please note that ambient conditions may at times require less or more curing time.
3. **Sealers.** Apply a commercially available, 100% silane or siloxane, penetrating concrete sealer per the manufacturer’s recommendations. The concrete should be reasonably dry prior to the sealer application, to

properly absorb the sealer. Ensure joints have been cleaned and sealed at the same time. Using a joint sealant is a best practice to ensure that ingress of water and incompressible material does not fill the joints.

4. **Deicers.** Minimize application of or exposure to deicers until after one year. Concrete placed late in the season, such as in October or November, may not have sufficient drying time (>40 days) before deicer application. Instead, consider using sand for traction over snow and ice.

Repair or Treatment

Although the appearance of a scaled surface may not be aesthetically pleasing, it is generally a cosmetic issue that does not compromise the structural integrity of the concrete and therefore may not require repair or replacement. For larger areas exhibiting pronounced scaling and surface loss, scarifying, grinding, or shot blasting will typically remove the scaled surface. However, the difference in appearance of ground vs. non-ground surfaces will be noticeable due to aggregate exposure in the ground areas.

shot blasting

grinding

scarifying



Example of a diamond-ground street

Additionally, a common treatment for lightly to moderately scaled exterior concrete surfaces is the application of a sealer to help create a moisture barrier, thus preventing water from penetrating into the concrete. This can be accomplished with a light power washing of the surface to remove all loose material and debris. After a short drying period, the surface is treated with a high-quality penetrating sealer product such as a silane sealer. These products are designed to penetrate

into the pores of concrete and react with alkaline materials and moisture to form a barrier that limits water and deicer penetration. Application rates will vary based on the specific product.



Application of a penetrating sealer to concrete

References

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- American Concrete Institute, ACI 308R Guide to Curing Concrete
- American Concrete Institute, ACI 332 Residential Code Requirements for Structural Concrete
- National Ready Mixed Concrete Association, Concrete in Practice (CIP) 2, Scaling Concrete Surfaces, (www.nrmca.org)
- International Code Council, 2012 International Building Code
- Federal Highway Administration, FHWA SD2002-01-X, TPF-5(042)-X and SD2002-01-G, TPF-5(042)-G
- Federal Highway Administration, FHWA Portland Limestone Cement Publication No.: FHWA-HRT-23-104
- Ohio Concrete, Technical Tip—A Case for Sealing Concrete Surfaces, 2006
- 2013 Ohio Concrete, Industry Recommendation for Exterior Concrete Flatwork
- Portland Cement Association, 2007 Engineering Bulletin 221—Specifiers Guide to Durable Concrete, Rachel J. Detwiler and Peter C. Taylor
- Portland Cement Association, 2005 Design and Control of Concrete Mixtures 16th Edition, 2016
- Portland Cement Association, 2024 State-of-the-Art Report on Use of Limestone in Cements at Levels up to 15%
- International Concrete Repair Institute, Inc. ICRI Webinar – April 16, 2024, Tips on Successful Transition to Working with Portland-Limestone Cement Mixes

Disclaimer: The information contained herein is provided for use by personnel who are competent to evaluate the significance and limitations of the information provided and who will accept total responsibility for the application of this information. Others should obtain assistance from a qualified professional before proceeding. The opinions expressed herein reflect the opinion and judgement of the Michigan Concrete Association (MCA) as of the date of this bulletin and are subject to change. The information has been obtained from sources MCA considers to be reliable, but cannot guarantee that it is comprehensive or completely accurate.

Published July 2024

FW: My opinion regarding Audia Concrete Construction, Inc

From Ali M. Dib <ADib@dearbornheightsmi.gov>

Date Mon 10/14/2024 10:01 AM

To Mariana Hernandez <mhernandez@dearbornheightsmi.gov>

Ali M. Dib P.E City Engineer



City of Dearborn Heights

6045 Fenton, Dearborn Heights MI 48127

(313) 791-3490 ☎ (313) 680-7821

 www.dearbornheightsmi.gov

From: Mathew M. Paul <MPaul@dearbornheightsmi.gov>

Sent: Wednesday, October 2, 2024 2:12 PM

To: Ali M. Dib <ADib@dearbornheightsmi.gov>

Subject: My opinion regarding Audia Concrete Construction, Inc

Hi Mr. Ali Dib,

When going through the bid submitted by Audia Concrete Construction, Inc for 2024-26 Street and Sidewalk Repair project, unlike other bidders the pricing of 1 cent given by this company for services like earth excavation, subgrade undercutting and base coarse aggregate 21AA is kind of concerning. Also, item 15 ADA Concrete ramp and concrete testing and compressive strength came with conditions. In addition to this they are giving a hint for price increase for 2025 and 2026. I feel like these are some red flags and not sure this company can be recommended.

Sincerely,

Mathew Paul

Buyer

City of Dearborn Heights.

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Audia Concrete Construction, Inc
P.O. Box 72
Milford, Michigan, 48381

Proposal

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Re: 2024-2026 Street and Sidewalk Repair

Gentlemen:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the City of Dearborn Heights in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents, (consisting of Project Manual) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM
NO.

DATE OF
RELEASE

SIGNATURE

1

8-12-24

Ronetta Audia

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PROPOSAL (Continued)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will achieve Substantial Completed and Final Completion within the time limits as outlined in the Agreement.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Proposals may not be withdrawn for a period of 60 days after bid opening.

The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

☐ Certified Check
☐ Cashier's Check
☐ Money Order
☒ Bid Bond

b) Legal Status of Bidder.

Corporation

PROPOSAL (Continued)

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENACE AND CONTROL	LSUM	1	125,000.00	one hundred twenty-five thousand	125,000.00
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000	91.00	Ninety-one Dollars	910,000.00
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000	94.00	Ninety-four Dollars	470,000.00
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000	94.00	Ninety-four Dollars	376,000.00
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000	97.00	Ninety-seven Dollars	194,000.00
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000	8.00	Eight Dollars	8,000.00
7	EARTH EXCAVATION	CYD	10,000	.01	one cent	100.00
8	SUBGRADE UNDERCUTTING	CYD	6,000	.01	one cent	60.00
9	BASE COARSE AGGREGATE 21AA	CYD	10,000	.01	one cent	100.00
10	ADJUSTING STRUCTURE	EACH	100	400.00	Four hundred	40,000.00
11	RECONSTRUCT STRUCTURE	VFT	500	50.00	Fifty Dollars	25,000.00
12	NEW FRAME AND COVER	EACH	500	350.00	Three hundred fifty	175,000.00
13	EDGE DRAIN, 6 INCH	LFT	1,800	15.00	Fifteen Dollars	27,000.00
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000	8.00	Eight Dollars	16,000.00
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000	11.00	Eleven Dollars	110,000.00
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500	70.00	Seventy Dollars	35,000.00
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500	80.00	Eighty Dollars	40,000.00
18	JOINTS SEALING	LFT	20,000	1.50	one Dollar fifty cents	30,000.00
19	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800	100.00	one hundred Dollars	80,000.00
					PROJECT TOTAL	2,661,260.00

* ADA tile not included (tile \$750 ea)

* Minimum 4 per visit 00 4243 - 2

* pricing may increase for 2025 & 2026

PROPOSAL (Continued)

Bidder's Name Audia Concrete Const, Inc
By Ronette Audin

Address P.O. Box 72
Milford, MI 48381

Phone No. 248-676-9570

Fax. No. 248-676-9520

email raudia@audiaconstructioninc.com

AIA Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

Audia Concrete Construction, Inc.

PO Box 72

Millford, MI 48381

SURETY:

(Name, legal status and principal place of business)

Travelers Casualty and Surety Company of America

1441 W Long Lake Rd, Suite 300

Troy, MI 48098

OWNER:

(Name, legal status and address)

City Of Dearborn Heights

6045 Fenton

Dearborn Heights, MI 48127

BOND AMOUNT: Five Percent of Accompanying Bid ----- (5%)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

PROJECT:

(Name, location or address, and Project number, if any)

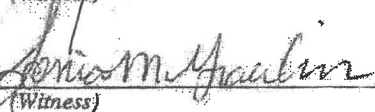
2024-2026 Street Pavement Program

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 10th day of July, 2024.


(Witness)

(Witness)

Audia Concrete Construction, Inc.

(Principal)

(Seal)



(Title)

Travelers Casualty and Surety Company of America

(Surety)

(Seal)

(Title) Susan L. Small, Attorney-in-Fact

Init.

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Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint Susan L. Small of FARMINGTON HILLS, Michigan, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 21st day of April, 2021.



State of Connecticut

City of Hartford ss.

By: _____

Robert L. Raney
Robert L. Raney, Senior Vice President

On this the 21st day of April, 2021, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2026



Anna P. Nowik
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 10th day of July, 2024.



Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

Proposal

G.V Cement Contractng Company
20000 Dix-Toledo
Brownstown, Michigan, 48183

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Re: 2024-2026 Street and Sidewalk Repair

Gentlemen:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the City of Dearborn Heights in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents, (consisting of Project Manual) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM
NO.

DATE OF
RELEASE

SIGNATURE

1

8-13-24

V.J. Vir

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PROPOSAL (Continued)

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENANCE AND CONTROL	LSUM	1	10,000.00	ten thousand	10,000.00
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000	75.00	Seventy-five	750,000.00
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000	80.00	eighty	400,000.00
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000	79.00	Seventy-nine	316,000.00
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000	84.00	eighty-four	168,000.00
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000	12.00	twelve	12,000.00
7	EARTH EXCAVATION	CYD	10,000	35.00	thirty-five	350,000.00
8	SUBGRADE UNDERCUTTING	CYD	6,000	35.00	thirty-five	210,000.00
9	BASE COARSE AGGREGATE 21AA	CYD	10,000	35.00	thirty-five	350,000.00
10	ADJUSTING STRUCTURE	EACH	100	600.00	Six hundred	60,000.00
11	RECONSTRUCT STRUCTURE	VFT	500	600.00	Six hundred	300,000.00
12	NEW FRAME AND COVER	EACH	500	600.00	Six hundred	300,000.00
13	EDGE DRAIN, 6 INCH	LFT	1,800	15.00	fifteen	27,000.00
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000	12.00	twelve	24,000.00
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000	18.00	eighteen	180,000.00
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500	95.00	ninety-five	47,500.00
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500	150.00	one hundred fifty	75,000.00
18	JOINT'S SEALING	LFT	20,000	1.10	one & 10/cents	22,000.00
19	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800	50.00	fifty	40,000.00
					PROJECT TOTAL	3,641,500.00

PROPOSAL (Continued)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will achieve Substantial Completed and Final Completion within the time limits as outlined in the Agreement.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Proposals may not be withdrawn for a period of 60 days after bid opening.

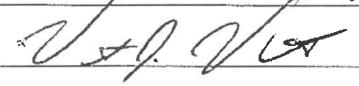
The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

- ☐ Certified Check
- ☐ Cashier's Check
- ☐ Money Order
- ☒ Bid Bond

b) Legal Status of Bidder.

PROPOSAL (Continued)

Bidder's Name G.V. Kement Contracting Co.
By 

Address 20000 Dix-Tolado
Brownstown MI 48183

Phone No. 734. 479. 2180

Fax. No. 734. 479. 0022

email office@gkement.com

Selective Insurance Company of America
40 Wantage Avenue
Branchville, New Jersey 07890
973-948-3000

Bond No. **B 1319305**

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That G V Cement Contracting Co.
20000 Dix-Toledo Brownstown, MI 48183 (hereinafter called the Principal)
as Principal, and the SELECTIVE INSURANCE COMPANY OF AMERICA, a corporation created and existing under
the laws of the State of New Jersey, with its principal office in Branchville, New Jersey (hereinafter called the Surety),
as Surety, are held and firmly bound unto City of Dearborn Heights
6045 Fenton Dearborn Heights, MI 48127 (hereinafter called the Obligor)
in the full and just sum of 5 % Percent of Total Bid Amount Dollars
(\$ 5 %) good and lawful money of the United States of America, to the payments of which sum of
money well and truly to be made, the said Principal and Surety bind themselves, their and each of their heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 7th day of August, 2024 A.D.

THE CONDITION OF THIS OBLIGATION IS SUCH, That, if the Obligor shall make any award within 60 days to
the Principal for

2024-2026 street and sidewalk repair

according to the terms of the proposal or bid made by the Principal therefor, and the Principal shall duly make and
enter into a contract with the Obligor in accordance with the terms of said proposal or bid and award and shall give
bond for the faithful performance thereof with Surety or Sureties approved by the Obligor; or if the Principal shall,
in case of failure so to do, pay to the Obligor the damages which the Obligor may suffer by reason of such failure, not
exceeding the penalty of this bond, then this obligation shall be null and void; otherwise it shall be and remain in full
force and effect.

When this Bond has been furnished to comply with a statutory, regulatory or other legal requirement in the location where
the construction is to be performed, any provision in this Bond conflicting with said statutory, regulatory or legal
requirement shall be deemed deleted from this form and provisions conforming to such statutory, regulatory or other
legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory
bond and not as a common-law bond.

In Testimony Whereof, the Principal and Surety have caused these presents to be duly signed and sealed.

G V Cement Contracting Co.

WITNESS: _____, PRINCIPAL

(If individual or firm)

By: [Signature] (SEAL)

ATTEST:

[Signature: Maria Vitali]
(If Corporation)

SELECTIVE INSURANCE COMPANY OF AMERICA, SURETY

By: Cynthia A. Curto
Cynthia A Curto, Attorney-in-fact

B-201 (6/20)



SELECTIVE
BE UNIQUELY INSUREDSM

Selective Insurance Company of America
40 Wantage Avenue
Branchville, New Jersey 07890
973-948-3000

Bond No. B 1319305

POWER OF ATTORNEY

SELECTIVE INSURANCE COMPANY OF AMERICA, a New Jersey corporation having its principal office at 40 Wantage Avenue, in Branchville, State of New Jersey ("SICA"), pursuant to Article VII, Section 1 of its By-Laws, which state in pertinent part:

The Chairman of the Board, President, Chief Executive Officer, any Executive Vice President, any Senior Vice President or any Corporate Secretary may, from time to time, appoint attorneys in fact, and agents to act for and on behalf of the Corporation and they may give such appointee such authority, as his/her certificate of authority may prescribe, to sign with the Corporation's name and seal with the Corporation's seal, bonds, recognizances, contracts of indemnity and other writings obligatory in the nature of a bond, recognizance or conditional undertaking, and any of said Officers may, at any time, remove any such appointee and revoke the power and authority given him/her.

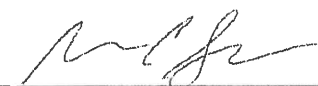
does hereby appoint **Cynthia A Curto**

, its true and lawful attorney(s)-in-fact, full authority to execute on SICA's behalf fidelity and surety bonds or undertakings and other documents of a similar character issued by SICA in the course of its business, and to bind SICA thereby as fully as if such instruments had been duly executed by SICA's regularly elected officers at its principal office, in amounts or penalties not exceeding the sum of: **\$10,000,000.00**

Signed this 7th day of August, 2024

SELECTIVE INSURANCE COMPANY OF AMERICA

By:


Brian C. Sarisky

Its SVP, Strategic Business Units, Commercial Lines



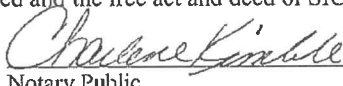
STATE OF NEW JERSEY :

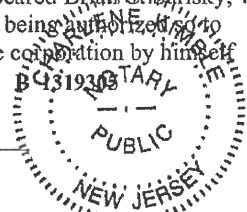
:ss. Branchville

COUNTY OF SUSSEX :

On this 7th day of August, 2024 before me, the undersigned officer, personally appeared Brian C. Sarisky, who acknowledged himself to be the Sr. Vice President of SICA, and that he, as such Sr. Vice President, being authorized to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Sr. Vice President and that the same was his free act and deed and the free act and deed of SICA.

Charlene Kimble
NOTARY PUBLIC
STATE OF NEW JERSEY
ID # N/A
MY COMMISSION EXPIRES 6/2/26


Notary Public



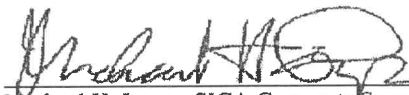
The power of attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of SICA at a meeting duly called and held on the 6th of February 1987, to wit:

"RESOLVED, the Board of Directors of Selective Insurance Company of America authorizes and approves the use of a facsimile corporate seal, facsimile signatures of corporate officers and notarial acknowledgements thereof on powers of attorney for the execution of bonds, recognizances, contracts of indemnity and other writing obligatory in the nature of a bond, recognizance or conditional undertaking."

CERTIFICATION

I do hereby certify as SICA's Corporate Secretary that the foregoing extract of SICA's By-Laws and Resolution is in full force and effect and this Power of Attorney issued pursuant to and in accordance with the By-Laws is valid.

Signed this 7th day of August, 2024.


Michael H. Lanza, SICA Corporate Secretary



Important Notice: If the bond number embedded within the Notary Seal does not match the number in the upper right-hand corner of this Power of Attorney, contact us at 973-948-3000.

B91 (4-14)

BIDDER: GREAT LAKES CONTRACTING SOLUTIONS, LLC
2300 Edinburgh Rd
Waterford, MI 48328
(313) 962-0400
TOM WALL – ESTIMATOR (248) 838-8699
TOM@GREATLAKESCONT.COM

SUBMITTED TO: CITY OF DEARBORN HEIGHTS

VIA EMAIL: comptroller@dearbornheightsmi.gov

BID: 2024 - 2026 STREET PAVEMENT PROGRAM

DUE: WEDNESDAY, AUGUST 14, 2024@ 3:00 PM

Proposal

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Re: 2024-2026 Street and Sidewalk Repair

Gentlemen:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the City of Dearborn Heights in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents, (consisting of Project Manual) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM

NO. #1

DATE OF
RELEASE
8/12/24

SIGNATURE
Jim Wall

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PROPOSAL (Continued)

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENACE AND CONTROL	LSUM	1	55,000. ⁰⁰	Fifty Five Thousand	55,000. ⁰⁰
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000	76.85	Seventy Six dollars and Eighty Five cents	768,500. ⁰⁰
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000	82.50	Eighty Two dollars and Fifty cents	412,500. ⁰⁰
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000	79.50	Seventy Nine dollars and Fifty cents	318,000. ⁰⁰
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000	84.50	Eighty Four dollars and Fifty cents	169,000. ⁰⁰
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000	10.65	Ten dollar and sixty five cents	10,650. ⁰⁰
7	EARTH EXCAVATION	CYD	10,000	30.00	Thirty dollars	300,000. ⁰⁰
8	SUBGRADE UNDERCUTTING	CYD	6,000	55.00	Fifty Five dollars	330,000. ⁰⁰
9	BASE COARSE AGGREGATE 21AA	CYD	10,000	39.50	Thirty Nine dollars and Fifty cents	395,000. ⁰⁰
10	ADJUSTING STRUCTURE	EACH	100	695.00	Six Hundred ninety five dollars	69,500. ⁰⁰
11	RECONSTRUCT STRUCTURE	VFT	500	260. ⁰⁰	Two Hundred Sixty dollars	130,000. ⁰⁰
12	NEW FRAME AND COVER	EACH	500	700. ⁰⁰	Seven hundred dollars	350,000. ⁰⁰
13	EDGE DRAIN, 6 INCH	LFT	1,800	15.00	Fifteen dollars	27,000. ⁰⁰
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000	8.75	Eight dollars and Seventy Five cents	17,500. ⁰⁰
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000	15.00	Fifteen dollars	150,000. ⁰⁰
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500	137.00	One hundred Thirty Seven dollars	68,500. ⁰⁰
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500	166.00	One Hundred Sixty Six dollars	83,000. ⁰⁰
18	JOINTS SEALING	LFT	20,000	2.00	Two dollars	40,000. ⁰⁰
19	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800	80.00	Eighty Dollars	64,000. ⁰⁰
					PROJECT TOTAL	3,758,150. ⁰⁰

PROPOSAL (Continued)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will achieve Substantial Completed and Final Completion within the time limits as outlined in the Agreement.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Proposals may not be withdrawn for a period of 60 days after bid opening.

The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

- ☐ Certified Check
- ☐ Cashier's Check
- ☐ Money Order
- ☒ Bid Bond

b) Legal Status of Bidder.

✓ attached

PROPOSAL (Continued)

**GREAT LAKES CONTRACTING
SOLUTIONS, LLC**

Bidder's Name

By



**Great Lakes Contracting
Solutions, LLC
Philip A. Sakalian, Member**

Address

2300 Edinburgh
Waterford, MI 48328

Phone No.

313-962-0400

Fax. No.

313-962-0404

email

tom@greatlakescont.com
Tom Wall - Project Estimator
(248) 838-8699

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

FILING ENDORSEMENT

This is to Certify that the CERTIFICATE OF RENEWAL OF ASSUMED NAME

for

FIORE ENTERPRISES LLC

ID Number: 801536634

to transact business under the assumed name of
GREAT LAKES CONTRACTING SOLUTIONS, LLC

received by electronic transmission on October 12, 2023 ***, is hereby endorsed.***

Filed on October 12, 2023 ***, by the Administrator.***

The document is effective on the date filed, unless a subsequent effective date within 90 days after received date is stated in the document.

Expiration Date: December 31, 2028



In testimony whereof, I have hereunto set my hand and affixed the Seal of the Department, in the City of Lansing, this 12th day of October, 2023.

Linda Clegg

***Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau***



AIA

Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

**GREAT LAKES CONTRACTING
SOLUTIONS, LLC**
2300 Edinburgh
Waterford, MI 48328

SURETY:

*(Name, legal status and principal
place of business)*

RLI Insurance Company
9025 North Lindbergh Dr.
Peoria, IL 61615

This document has important legal
consequences. Consultation with
an attorney is encouraged with
respect to its completion or
modification.

Any singular reference to
Contractor, Surety, Owner or
other party shall be considered
plural where applicable.

OWNER:

(Name, legal status and address)

Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

BOND AMOUNT: FIVE PERCENT OF BID AMOUNT (5%)

PROJECT: 2024 - 2026 Street Pavement Program

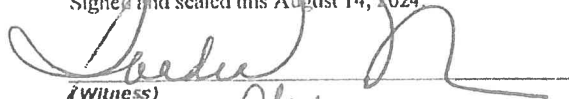
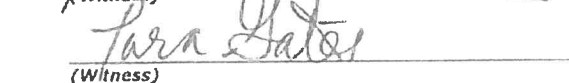
(Name, location or address, and Project number, if any)

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

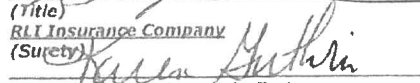
Signed and sealed this August 14, 2024.


(Witness)

(Witness)

GREAT LAKES CONTRACTING SOLUTIONS, LLC
(Principal)

(Title)

RLI Insurance Company
(Surety)


Karen Guthrie, Attorney-in-Fact



CAUTION: You should sign the original AIA Contract Document on which this text appears in RED. An original assures that changes will not be obscured.

POWER OF ATTORNEY

RLI Insurance Company Contractors Bonding and Insurance Company

9025 N. Lindbergh Dr. Peoria, IL 61615
Phone: 800-645-2402

Know All Men by These Presents:

That this Power of Attorney is not valid or in effect unless attached to the bond which it authorizes executed, but may be detached by the approving officer if desired.

That RLI Insurance Company and/or Contractors Bonding and Insurance Company, each an Illinois corporation, (separately and together, the "Company") do hereby make, constitute and appoint:

Angelo G. Zervos, Gus E. Zervos, Donald W. Burden, Michael G. Zervos, Stephen M. Zervos, Courtney Saunders, Stephanie A. Dinco,
Karen Guthrie, jointly or severally

in the City of Southfield, State of Michigan its true and lawful Agent(s) and Attorney(s) in Fact, with full power and authority hereby conferred, to sign, execute, acknowledge and deliver for and on its behalf as Surety, in general, any and all bonds and undertakings in an amount not to exceed Twenty Five Million Dollars (\$25,000,000.00) for any single obligation.

The acknowledgment and execution of such bond by the said Attorney in Fact shall be as binding upon the Company as if such bond had been executed and acknowledged by the regularly elected officers of the Company.

RLI Insurance Company and/or Contractors Bonding and Insurance Company, as applicable, have each further certified that the following is a true and exact copy of a Resolution adopted by the Board of Directors of each such corporation, and is now in force, to-wit:

"All bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or Agents who shall have authority to issue bonds, policies or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

IN WITNESS WHEREOF, the RLI Insurance Company and/or Contractors Bonding and Insurance Company, as applicable, have caused these presents to be executed by its respective Sr. Vice President with its corporate seal affixed this 4th day of

March



State of Illinois

County of Peoria

SS

RLI Insurance Company
Contractors Bonding and Insurance Company

By:

Eric Raudins

Sr. Vice President

CERTIFICATE

On this 4th day of March, 2024, before me, a Notary Public, personally appeared Eric Raudins, who being by me duly sworn, acknowledged that he signed the above Power of Attorney as the aforesaid officer of the RLI Insurance Company and/or Contractors Bonding and Insurance Company and acknowledged said instrument to be the voluntary act and deed of said corporation.

By:

Jill A. Scott

Notary Public



JILL A SCOTT
Notary Public
State of Ohio
My Comm. Expires
September 22, 2025

I, the undersigned officer of RLI Insurance Company and/or Contractors Bonding and Insurance Company, do hereby certify that the attached Power of Attorney is in full force and effect and is irrevocable; and furthermore, that the Resolution of the Company as set forth in the Power of Attorney, is now in force. In testimony whereof, I have hereunto set my hand and the seal of the RLI Insurance Company and/or Contractors Bonding and Insurance Company this 14th day of August, 2024.

RLI Insurance Company
Contractors Bonding and Insurance Company

By:

Jeffrey D. Dick

Corporate Secretary

Proposal

J.B Contractors
2933 MILITARY ST
DETROIT, Michigan, 48209

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Re: 2024-2026 Street and Sidewalk Repair

Gentlemen:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the City of Dearborn Heights in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents, (consisting of Project Manual) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM
NO. 1

DATE OF
RELEASE
8-12-24

SIGNATURE

Bina Abbott

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PROPOSAL (Continued)

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENANCE AND CONTROL	LSUM	1	200,000.00	Two hundred Thousand	200,000.00
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000	83.00	Eighty Three	830,000.00
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000	98.00	ninety eight	490,000.00
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000	87.00	Eighty Seven	348,000.00
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000	102.00	One hundred Two	204,000.00
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000	8.15	Eight and 15/100	8,150.00
7	EARTH EXCAVATION	CYD	10,000	25.70	Twenty five 70/100	257,000.00
8	SUBGRADE UNDERCUTTING	CYD	6,000	78.00	Seventy eight	468,000.00
9	BASE COARSE AGGREGATE 21AA	CYD	10,000	52.30	Fifty Two 30/100	523,000.00
10	ADJUSTING STRUCTURE	EACH	100	250.00	Two hundred fifty	25,000.00
11	RECONSTRUCT STRUCTURE	VFT	500	300.00	Three hundred	150,000.00
12	NEW FRAME AND COVER	EACH	500	700.00	Seven hundred	350,000.00
13	EDGE DRAIN, 6 INCH	LFT	1,800	20.00	Twenty	36,000.00
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000	8.85	Eight and 85/100	17,700.00
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000	15.00	fifteen	150,000.00
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500	120.00	One hundred Twenty	60,000.00
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500	125.00	One hundred Twenty five	62,500.00
18	JOINTS SEALING	LFT	20,000	1.40	One and 40/100	28,000.00
19	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800	45.00	Forty five	36,000.00
					PROJECT TOTAL	4,243,350.00

PROPOSAL (Continued)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will achieve Substantial Completed and Final Completion within the time limits as outlined in the Agreement.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Proposals may not be withdrawn for a period of 60 days after bid opening.

The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

- ☐ Certified Check
- ☐ Cashier's Check
- ☐ Money Order
- ☒ Bid Bond

b) Legal Status of Bidder.

PROPOSAL (Continued)

Bidder's Name JB Contractors Inc.

By Bruce Abbott

Address 2933 Military
Detroit MI 48209

Phone No. 313 995-8301

Fax. No. 313 344-7455

email jbcontractors@outlook.com

Bond No.: B 1319461

Selective Insurance Company of America
40 Wantage Avenue
Branchville, New Jersey 07890
973-948-3000

**AIA Document A310
BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we
JB Contractors Inc

2933 Military Detroit, MI 48209

as Principal, hereinafter called the Principal, and Selective Insurance Company of America

(Here insert full name and address or legal title of contractor)

a corporation duly organized under the laws of the State of New Jersey
as Surety, hereinafter called the Surety, are held and firmly bound unto
City of Dearbon Heights

6045 Fenton Dearborn Heights, MI 48127

as Oblgee, hereinafter called the Oblgee, in the sum of

(Here insert full name and address or legal title of owner)

5% Percent of the Total Bid

(\$ **5 % Percent**)

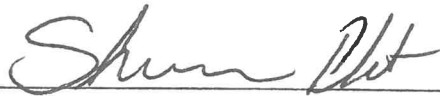
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for
2024-2026 Street & Sidewalk Repair

(Here insert full name and address and description of project)

NOW, THEREFORE, if the Oblgee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Oblgee in
accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good
and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the
prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall
pay to the Oblgee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for
which the Oblgee may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null
and void, otherwise to remain in full force and effect.

Signed and Sealed this **14th** day of **August** **2024**

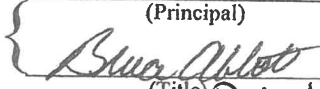


(Witness)

JB Contractors Inc

(Principal)

(Seal)

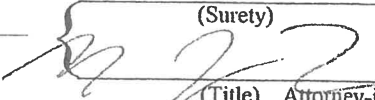

(Title) **Project Manager**

SELECTIVE INSURANCE COMPANY OF AMERICA

(Surety)



(Witness)


(Title) **Attorney-in-Fact**
Michael G. Zervos



"Printed in cooperation with the American Institute of Architects (AIA) by the Selective Insurance Company of America. The
language in this document conforms exactly to the language used in AIA Document A310, February 1970 edition."

**AIA DOCUMENT A310-BID BOND-AIA ® • FEBRUARY 1970 ED • THE AMERICAN
INSTITUTE OF ARCHITECTS, 1735 N.Y. AVE., N.W., WASHINGTON, D.C. 20006**

B-203 (12/92)

SELECTIVE
BE UNIQUELY INSUREDSM

Selective Insurance Company of America
40 Wantage Avenue
Branchville, New Jersey 07890
973-948-3000

Bond No. B 1319461

POWER OF ATTORNEY

SELECTIVE INSURANCE COMPANY OF AMERICA, a New Jersey corporation having its principal office at 40 Wantage Avenue, in Branchville, State of New Jersey ("SICA"), pursuant to Article VII, Section 1 of its By-Laws, which state in pertinent part:

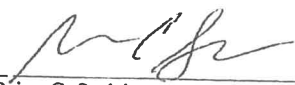
The Chairman of the Board, President, Chief Executive Officer, any Executive Vice President, any Senior Vice President or any Corporate Secretary may, from time to time, appoint attorneys in fact, and agents to act for and on behalf of the Corporation and they may give such appointee such authority, as his/her certificate of authority may prescribe, to sign with the Corporation's name and seal with the Corporation's seal, bonds, recognizances, contracts of indemnity and other writings obligatory in the nature of a bond, recognizance or conditional undertaking, and any of said Officers may, at any time, remove any such appointee and revoke the power and authority given him/her.

does hereby appoint **Michael G. Zervos**

, its true and lawful attorney(s)-in-fact, full authority to execute on SICA's behalf fidelity and surety bonds or undertakings and other documents of a similar character issued by SICA in the course of its business, and to bind SICA thereby as fully as if such instruments had been duly executed by SICA's regularly elected officers at its principal office, in amounts or penalties not exceeding the sum of: \$10,000,000.00

Signed this 14th day of August, 2024

SELECTIVE INSURANCE COMPANY OF AMERICA

By: 

Brian C. Sarisky

Its SVP, Strategic Business Units, Commercial Lines



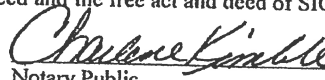
STATE OF NEW JERSEY :

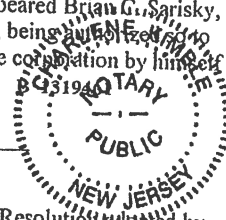
:ss. Branchville

COUNTY OF SUSSEX :

On this 14th day of August, 2024 before me, the undersigned officer, personally appeared **Brian C. Sarisky**, who acknowledged himself to be the Sr. Vice President of SICA, and that he, as such Sr. Vice President, being duly sworn to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the Corporation by himself as Sr. Vice President and that the same was his free act and deed and the free act and deed of SICA.

Charlene Kimble
NOTARY PUBLIC
STATE OF NEW JERSEY
ID # N/A
MY COMMISSION EXPIRES 6/2/26


Notary Public



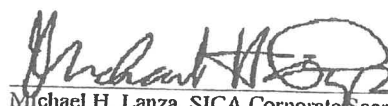
The power of attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of SICA at a meeting duly called and held on the 6th of February 1987, to wit:

"RESOLVED, the Board of Directors of Selective Insurance Company of America authorizes and approves the use of a facsimile corporate seal, facsimile signatures of corporate officers and notarial acknowledgements thereof on powers of attorney for the execution of bonds, recognizances, contracts of indemnity and other writing obligatory in the nature of a bond, recognizance or conditional undertaking."

CERTIFICATION

I do hereby certify as SICA's Corporate Secretary that the foregoing extract of SICA's By-Laws and Resolutions is true and correct in form and effect and this Power of Attorney issued pursuant to and in accordance with the By-Laws is valid.

Signed this 14th day of August, 2024.


Michael H. Lanza, SICA Corporate Secretary



Important Notice: If the bond number embedded within the Notary Seal does not match the number in the upper

B91 (4-14)

Proposal

Rotondo Construction Inc
20771 Randall St
Farmington Hills, MI 48336

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Re: 2024-2026 Street and Sidewalk Repair

Gentlemen:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the City of Dearborn Heights in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents, (consisting of Project Manual) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM NO.	DATE OF RELEASE	SIGNATURE
<u>1</u>	<u>8/12/24</u>	<u>Man Rotondo</u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PROPOSAL (Continued)

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENACE AND CONTROL	LSUM	1	\$ 30,000.00	Thirty thousand dollars	\$ 30,000.00
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000	\$ 80.00	Eighty dollars	\$ 800,000.00
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000	\$ 84.00	Eighty-four dollars	\$ 420,000.00
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000	\$ 83.00	Eighty-three dollars	\$ 332,000.00
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000	\$ 87.00	Eighty-seven dollars	\$ 174,000.00
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000	\$ 12.00	Twelve dollars	\$ 12,000.00
7	EARTH EXCAVATION	CYD	10,000	\$ 30.00	Thirty dollars	\$ 300,000.00
8	SUBGRADE UNDERCUTTING	CYD	6,000	\$ 30.00	Thirty dollars	\$ 180,000.00
9	BASE COARSE AGGREGATE 21AA	CYD	10,000	\$ 20.00	Twenty dollars	\$ 200,000.00
10	ADJUSTING STRUCTURE	EACH	100	\$ 300.00	Three hundred dollars	\$ 30,000.00
11	RECONSTRUCT STRUCTURE	VFT	500	\$ 250.00	Two hundred and fifty dollars	\$ 125,000.00
12	NEW FRAME AND COVER	EACH	500	\$ 750.00	Seven hundred and fifty dollars	\$ 375,000.00
13	EDGE DRAIN, 6 INCH	LFT	1,800	\$ 20.00	Twenty dollars	\$ 36,000.00
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000	\$ 9.00	Nine dollars	\$ 18,000.00
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000	\$ 14.00	Fourteen dollars	\$ 140,000.00
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500	\$ 160.00	One hundred and sixty dollars	\$ 80,000.00
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500	\$ 185.00	One hundred and eighty-five dollars	\$ 92,500.00
18	JOINTS SEALING	LFT	20,000	\$ 3.00	Three dollars	\$ 60,000.00
19	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800	\$ 500.00	Five hundred dollars	\$ 400,000.00
					PROJECT TOTAL	\$ 3,804,500.00

CHANGE ORDER WILL BE REQUIRED FOR SANITARY MANHOLES IF THEY ARE REQUIRED TO BE ENCAPSILATED/WAPPED (NOT SPECIFIED ON PLANS) - M.R.

PROPOSAL (Continued)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will achieve Substantial Completed and Final Completion within the time limits as outlined in the Agreement.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Proposals may not be withdrawn for a period of 60 days after bid opening.

The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

- ☐ Certified Check
- ☐ Cashier's Check
- ☐ Money Order
- ☒ Bid Bond

b) Legal Status of Bidder.

PROPOSAL (Continued)

Bidder's Name ROTONDO CONSTRUCTION INC.

By Marc Rotondo
MARC ROTONDO

Address 20771 RANDALL ST.
FARMINGTON HILLS, MI
48336

Phone No. 248-474-0707

Fax. No. 248-474-9305

email MARC@ROTONDOCO.COM

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we

Rotondo Construction Corporation
20771 Randall Street, Farmington Hills, MI 48336

as Principal, hereinafter called Principal, and

Westfield Insurance Company
P.O. Box 5001, Westfield Center, OH 44251-5001

a corporation duly organized under the laws of the State of **Ohio**
as Surety, hereinafter called Surety, are held and firmly bound unto

City of Dearborn Heights
6045 Fenton Street, Dearborn Heights, MI 48127

as Obligee, hereinafter called Obligee, in the sum of **Five Percent of Accompanying Bid**

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. **Dollars (5% of Bid)**

WHEREAS, the Principal has submitted a bid for _____ (Here insert full name, address and description of project)

2024-2026 Street Pavement Program

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this 14th day of August, 2024.

Rotondo Construction Corporation

Maria Kaput
(Witness)

{ _____ (Principal) (Seal)
_____ (Title)

Jessica R. Peltt
(Witness)

{ **Westfield Insurance Company**
_____ (Surety) (Seal)
_____ (Title)
Nick Ashburn, Attorney in Fact

THIS POWER OF ATTORNEY SUPERCEDES ANY PREVIOUS POWER BEARING THIS SAME POWER # AND ISSUED PRIOR TO 03/10/17, FOR ANY PERSON OR PERSONS NAMED BELOW.

General
Power
of Attorney

POWER NO. 2140302 11

Westfield Insurance Co.
Westfield National Insurance Co.
Ohio Farmers Insurance Co.
Westfield Center, Ohio

CERTIFIED COPY

Know All Men by These Presents, That WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, corporations, hereinafter referred to individually as a "Company" and collectively as "Companies," duly organized and existing under the laws of the State of Ohio, and having its principal office in Westfield Center, Medina County, Ohio, do by these presents make, constitute and appoint
PAUL M. HURLEY, ROBERT D. HEUER, MICHAEL D. LECHNER, HOLLY NICHOLS, NICK ASHBURN, MARK MADDEN, JOINTLY OR SEVERALLY

of TROY and State of MI its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings, or other instruments or contracts of suretyship.

LIMITATION: THIS POWER OF ATTORNEY CANNOT BE USED TO EXECUTE NOTE GUARANTEE, MORTGAGE DEFICIENCY, MORTGAGE GUARANTEE, OR BANK DEPOSITORY BONDS.

and to bind any of the Companies thereby as fully and to the same extent as if such bonds were signed by the President, sealed with the corporate seal of the applicable Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises. Said appointment is made under and by authority of the following resolution adopted by the Board of Directors of each of the WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY:

"Be It Resolved, that the President, any Senior Executive, any Secretary or any Fidelity & Surety Operations Executive or other Executive shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

The Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements of indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed by the President and sealed and attested by the Corporate Secretary."

"Be it Further Resolved, that the signature of any such designated person and the seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signatures or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached." (Each adopted at a meeting held on February 8, 2000).

In Witness Whereof, WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY have caused these presents to be signed by their National Surety Leader and Senior Executive and their corporate seals to be hereto affixed this 10th day of MARCH A.D., 2017 .

Corporate
Seals
Affixed



WESTFIELD INSURANCE COMPANY
WESTFIELD NATIONAL INSURANCE COMPANY
OHIO FARMERS INSURANCE COMPANY

By:
Dennis P. Baus, National Surety Leader and
Senior Executive

State of Ohio
County of Medina ss.:

On this 10th day of MARCH A.D., 2017 , before me personally came Dennis P. Baus to me known, who, being by me duly sworn, did depose and say, that he resides in Wooster, Ohio; that he is National Surety Leader and Senior Executive of WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, the companies described in and which executed the above instrument; that he knows the seals of said Companies; that the seals affixed to said instrument are such corporate seals; that they were so affixed by order of the Boards of Directors of said Companies; and that he signed his name thereto by like order.

Notarial
Seal
Affixed



David A. Kotnik, Attorney at Law, Notary Public
My Commission Does Not Expire (Sec. 147.03 Ohio Revised Code)

State of Ohio
County of Medina ss.:

I, Frank A. Carrino, Secretary of WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; and furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Westfield Center, Ohio, this 14th day of August A.D., 2024 .



Frank A. Carrino, Secretary

BPOAC2 (combined) (06-02)

Q962903

GRETCHEN WHITMER
Governor

Michigan Department of Licensing and Regulatory Affairs
Bureau of Construction Codes
Company Builder License

ROTONDO CONSTRUCTION INC
20771 RANDALL ST
FARMINGTON HILLS, MI 48336

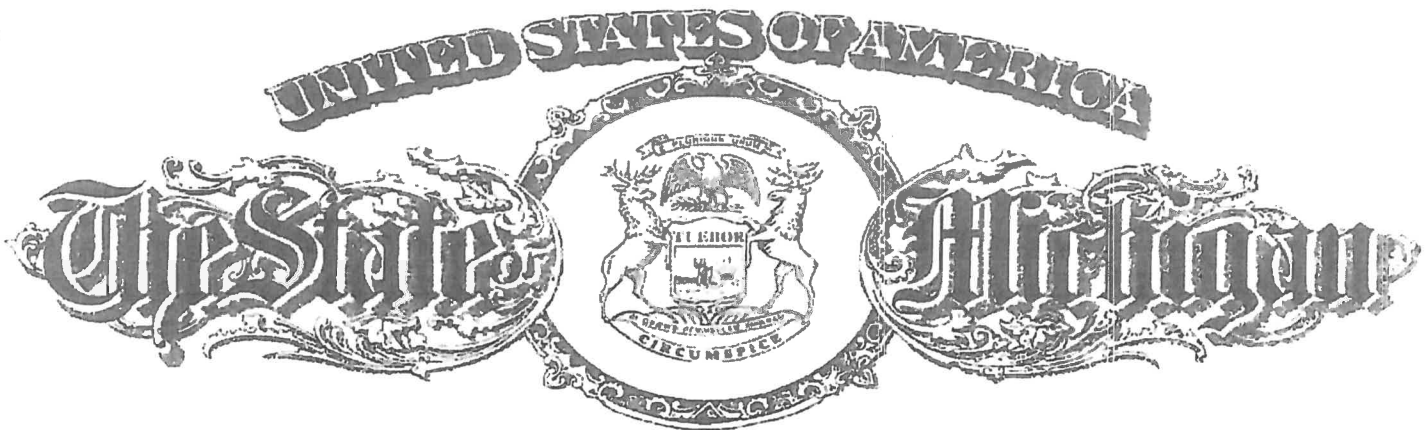
Qualifying Officer:
MARC A ROTONDO
Qualifying Officer #
242400333

MUST BE DISPLAYED IN A CONSPICUOUS PLACE

License No.
262400401

Expiration Date:
05/31/2027

This document is duly
issued under the laws of the
State of Michigan



This is to Certify That

ROTONDO CONSTRUCTION, INC.

*was validly incorporated on December 6 , 1994 as a Michigan DOMESTIC PROFIT CORPORATION,
and said corporation is validly in existence under the laws of this state.*

*This certificate is issued pursuant to the provisions of 1972 PA 284 to attest to the fact that the corporation
is in good standing in Michigan as of this date and is duly authorized to transact business and for no other
purpose.*

*This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit
given it in every court and office within the United States.*



Sent by electronic transmission

Certificate Number: 23010345602

*In testimony whereof, I have hereunto set my hand,
in the City of Lansing, this 18th day of January , 2023.*

Linda Clegg, Director

Corporations, Securities & Commercial Licensing Bureau

Verify this certificate at: URL to eCertificate Verification Search <http://www.michigan.gov/corpverifycertificate>.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/26/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER		CONTACT	
Guy Hurley, LLC		NAME: Holli LaRose	
989 E. South Boulevard		PHONE (A/C, No. Ext): (248) 519-1430	
Suite 200		FAX (A/C, No): (248) 519-1401	
Rochester Hills MI 48307		E-MAIL ADDRESS: hlarose@ghbh.com	
		INSURER(S) AFFORDING COVERAGE	
INSURED		INSURER A: Secura Insurance Companies	
Rotondo Construction Corp Inc.		INSURER B: Accident Fund Company	
38807 Ann Arbor Rd., St. 2,		INSURER C:	
Livonia MI 48150		INSURER D:	
		INSURER E:	
		INSURER F:	

COVERAGES

CERTIFICATE NUMBER: 23-24 Livonia Master

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY						
	CLAIMS-MADE ☒ OCCUR			CP3118995	11/1/2023	11/1/2024	EACH OCCURRENCE \$ 1,000,000
							DAMAGE TO RENTED PREMISES (Per occurrence) \$ 100,000
							MED EXP (Any one person) \$ 10,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY \$ 1,000,000
	POLICY ☒ PRO-JECT ☐ LOC						GENERAL AGGREGATE \$ 2,000,000
	OTHER:						PRODUCTS - COMP/OP AGG \$ 2,000,000
							\$
A	☒ AUTOMOBILE LIABILITY						
	ANY AUTO			A3118996	11/1/2023	11/1/2024	COMBINED SINGLE LIMIT (Per accident) \$ 1,000,000
	ALL OWNED AUTOS						BODILY INJURY (Per person) \$
	☒ HIRED AUTOS						BODILY INJURY (Per accident) \$
							PROPERTY DAMAGE (Per accident) \$
							\$
A	☒ UMBRELLA LIAB						
	EXCESS LIAB			CU3118998	11/1/2023	11/1/2024	EACH OCCURRENCE \$ 2,000,000
	DEFD RETENTION \$						AGGREGATE \$ 2,000,000
							\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			100068842	11/1/2023	11/1/2024	☒ PER STATUTE ☐ OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)						E.L. FACT ACCIDENT \$ 500,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$ 500,000
							E.L. DISEASE - POLICY LIMIT \$ 500,000
A	Inland Marine			CP3118995	11/1/2023	11/1/2024	Losses/Revised \$30,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**manual cert 1304A (0315)
see laserfiche

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

R McGregor/HLAROS

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Santos Cement Inc
860 Southfield Road
Lincoln Park, MI 48146

Proposal

City of Dearborn Heights
6045 Fenton Avenue
Dearborn Heights, MI 48127

Re: 2024-2026 Street and Sidewalk Repair

Gentlemen:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the City of Dearborn Heights in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents, (consisting of Project Manual) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM NO.	DATE OF RELEASE	SIGNATURE
#1	8/12/24	

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PROPOSAL (Continued)

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENACE AND CONTROL	LSUM	1	\$40,000.00	Forty thousand dollars	\$40,000.00
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000	\$98.55	Ninety eight dollars and fifty five cents	\$985,500.00
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000	\$102.54	One hundred two dollars and fifty four cents	\$512,700.00
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000	\$86.35	Eighty six dollars and thirty five cents	\$345,400.00
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000	\$88.61	Eighty eight dollars and sixty one cents	\$177,220.00
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000	\$12.50	Twelve dollars and fifty cents	\$12,500.00
7	EARTH EXCAVATION	CYD	10,000	\$20.00	Twenty dollars	\$200,000.00
8	SUBGRADE UNDERCUTTING	CYD	6,000	\$25.00	Twenty five dollars	\$150,000.00
9	BASE COARSE AGGREGATE 21AA	CYD	10,000	\$18.00	Eighteen dollars	\$180,000.00
10	ADJUSTING STRUCTURE	EACH	100	\$350.00	Three hundred fifty dollars	\$35,000.00
11	RECONSTRUCT STRUCTURE	VFT	500	\$125.00	One hundred twenty five dollars	\$62,500.00
12	NEW FRAME AND COVER	EACH	500	\$845.00	Eight hundred forty five dollars	\$422,500.00
13	EDGE DRAIN, 6 INCH	LFT	1,800	\$10.00	Ten dollars	\$18,000.00
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000	\$7.50	Seven dollars and fifty cents	\$15,000.00
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000	\$12.50	Twelve dollars and fifty cents	\$125,000.00
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500	\$55.00	Fifty five dollars	\$27,500.00
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500	\$70.00	Seventy dollars	\$35,000.00
18	RESTORATION	LSUM	1	\$32,500.00	Thirty two thousand five hundred dollars	\$32,500.00
19	JOINTS SEALING	LFT	20000	\$1.40	One dollar and forty cents	\$28,000.00
20	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800	\$225.00	Two hundred twenty five dollars	\$180,000.00
					PROJECT TOTAL	\$3,584,320.00

PROPOSAL (Continued)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will achieve Substantial Completed and Final Completion within the time limits as outlined in the Agreement.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Proposals may not be withdrawn for a period of 60 days after bid opening.

The following documents are attached to and made a condition of this Proposal:

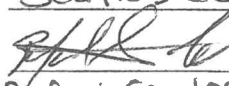
a) Required Bid security in the form checked below:

☐ Certified Check
☐ Cashier's Check
☐ Money Order
☒ Bid Bond

b) Legal Status of Bidder.

Corporation

PROPOSAL (Continued)

Bidder's Name Santos Cement I Inc.
By 
Rafael Santos Jr, President

Address 860 Southfield
Lincoln Park, MI
48146

Phone No. 3135513113

Fax. No. 3137917049

email Santoscement@aol.com

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (Name and Address):

Santos Cement 1, Inc.
860 Southfield Road Lincoln Park, MI 48186

SURETY (Name, and Address of Principal Place of Business):

Selective Insurance Company of America
40 Wantage Avenue
Branchville, NJ 07890

OWNER (Name and Address):

City of Dearborn Heights
6045 Fenton Dearborn Heights, MI 48127

Bid Due Date: August 14, 2024

Description (Project Name— Include Location):

2024-2026 Street pavement program dearborn heights, mi

BOND

Bond Number: B 1319471

Date: August 13, 2024

Penal sum 5% Percent of the Total Bid

\$ 5%

(Words)

(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Santos Cement 1, Inc.

(Seal)

Selective Insurance Company of America

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:


Signature

By:


Signature (Attach Power of Attorney)

Rafael Santos Jr.

Print Name

Jenny Clay Attorney-In-Fact

Print Name

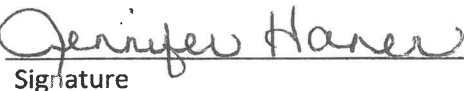
President

Title

Jenny Clay Attorney-In-Fact

Title

Attest:


Signature

Attest:


Signature

Title Finance Manager

Title

Note: Addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

POWER OF ATTORNEY

SELECTIVE INSURANCE COMPANY OF AMERICA, a New Jersey corporation having its principal office at 40 Wantage Avenue, in Branchville, State of New Jersey ("SICA"), pursuant to Article VII, Section 1 of its By-Laws, which state in pertinent part:

The Chairman of the Board, President, Chief Executive Officer, any Executive Vice President, any Senior Vice President or any Corporate Secretary may, from time to time, appoint attorneys in fact, and agents to act for and on behalf of the Corporation and they may give such appointee such authority, as his/her certificate of authority may prescribe, to sign with the Corporation's name and seal with the Corporation's seal, bonds, recognizances, contracts of indemnity and other writings obligatory in the nature of a bond, recognizance or conditional undertaking, and any of said Officers may, at any time, remove any such appointee and revoke the power and authority given him/her.

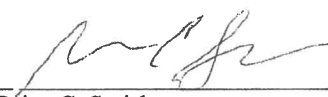
does hereby appoint **Jenny Clay**

, its true and lawful attorney(s)-in-fact, full authority to execute on SICA's behalf fidelity and surety bonds or undertakings and other documents of a similar character issued by SICA in the course of its business, and to bind SICA thereby as fully as if such instruments had been duly executed by SICA's regularly elected officers at its principal office, in amounts or penalties not exceeding the sum of: **\$4,000,000.00**

Signed this 12th day of August, 2024

SELECTIVE INSURANCE COMPANY OF AMERICA

By:


Brian C. Sarisky

Its SVP, Strategic Business Units, Commercial Lines



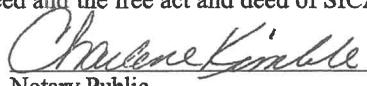
STATE OF NEW JERSEY :

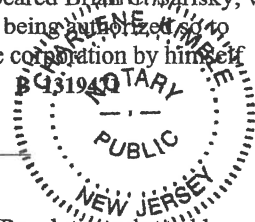
:ss. Branchville

COUNTY OF SUSSEX :

On this 12th day of August, 2024 before me, the undersigned officer, personally appeared Brian C. Sarisky, who acknowledged himself to be the Sr. Vice President of SICA, and that he, as such Sr. Vice President, being authorized to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Sr. Vice President and that the same was his free act and deed and the free act and deed of SICA.

Charlene Kimble
NOTARY PUBLIC
STATE OF NEW JERSEY
ID # N/A
MY COMMISSION EXPIRES 6/2/26


Notary Public



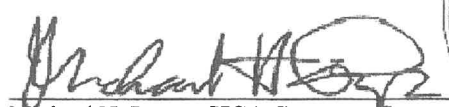
The power of attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of SICA at a meeting duly called and held on the 6th of February 1987, to wit:

"RESOLVED, the Board of Directors of Selective Insurance Company of America authorizes and approves the use of a facsimile corporate seal, facsimile signatures of corporate officers and notarial acknowledgements thereof on powers of attorney for the execution of bonds, recognizances, contracts of indemnity and other writing obligatory in the nature of a bond, recognizance or conditional undertaking."

CERTIFICATION

I do hereby certify as SICA's Corporate Secretary that the foregoing extract of SICA's By-Laws and Resolution is in full force and effect and this Power of Attorney issued pursuant to and in accordance with the By-Laws is valid.

Signed this 12th day of August, 2024.


Michael H. Lanza, SICA Corporate Secretary



Important Notice: If the bond number embedded within the Notary Seal does not match the number in the upper right-hand corner of this Power of Attorney, contact us at 973-948-3000.

B91 (4-14)

SELECTIVE INSURANCE®

Selective Insurance Company of America
40 Wantage Avenue
Branchville, New Jersey 07890
973-948-3000

BondNo.B 1319471

STATEMENT OF FINANCIAL CONDITION

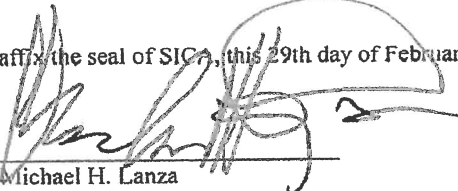
I hereby certify that the following information is contained in the Annual Statement of Selective Insurance Company of America ("SICA") to the New Jersey Department of Banking and Insurance as of December 31, 2023:

<u>ADMITTED ASSETS (in thousands)</u>		<u>LIABILITIES AND SURPLUS (in thousands)</u>	
Bonds	\$2,315,162	Reserve for losses and loss expenses	\$1,501,493
Preferred stocks at convention value	15,909	Reserve for unearned premiums	680,747
Common stocks at convention values	72,576	Provision for unauthorized reinsurance	2,119
Subsidiary common stock at convention values	0	Commissions payable and contingent commissions	44,147
Short-term investments	94,895	Other accrued expenses	31,829
Mortgage loans on real estate (including collateral loans)	104,955	Other liabilities	<u>516,212</u>
Other invested assets	249,031	Total liabilities	2,776,547
Interest and dividends due or accrued	21,066		
Premiums receivable	628,147	Surplus as regards policyholders	<u>938,765</u>
Other admitted assets	<u>213,571</u>		
Total admitted assets	3,715,312	Total liabilities and surplus as regards policyholders	3,715,312

I further certify that the following is a true and exact excerpt from Article VII, Section 1 of the By-Laws of SICA, which is still valid and existing.

The Chairman of the Board, President, Chief Executive Officer, any Executive Vice President, any Senior Vice President or any Corporate Secretary may, from time to time, appoint attorneys in fact, and agents to act for and on behalf of the Corporation and they may give such appointee such authority, as his/her certificate of authority may prescribe, to sign with the Corporation's name and seal with the Corporation's seal, bonds, recognizances, contracts of indemnity and other writings obligatory in the nature of a bond, recognizance or conditional undertaking, and any of said Officers may, at any time, remove any such appointee and revoke the power and authority given him/her.

IN WITNESS WHEREOF, I hereunto subscribe my name and affix the seal of SICA, this 29th day of February, 2024.

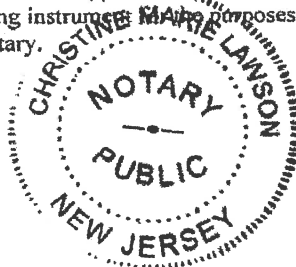

Michael H. Lanza
SICA Corporate Secretary

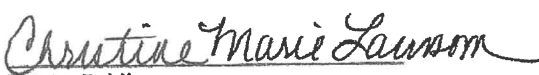
STATE OF NEW JERSEY :

:ss. Branchville

COUNTY OF SUSSEX :

On this 20 day of FEB 2024, before me, the undersigned officer, personally appeared Michael H. Lanza, who acknowledged himself to be the Corporate Secretary of SICA, and that he, as such Corporate Secretary, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Corporate Secretary.




Christine Marie Lawson
Notary Public
My Commission Expires:

CHRISTINE MARIE LAWSON
NOTARY PUBLIC
STATE OF NEW JERSEY
MY COMMISSION EXPIRES APRIL 15, 2024

A and G Construction

Line #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE IN FIGURES	UNIT PRICE IN WORDS	LINE TOTAL
1	TRAFFIC MAINTENANCE AND CONTROL	LSUM	1	19,000.00	Nineteen thousand	19,000.00
2	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	10,000	70.00	Seventy dollars	700,000.00
3	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH INTEGRAL CURB (4,000 psi)	SYD	5,000	74.00	Seventy four dollars	370,000.00
4	REMOVE REPLACE 7" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	4,000	73.00	Seventy three dollars	292,000.00
5	REMOVE REPLACE 8" CONCRETE PAVEMENT WITH 7 SACK CONCRETE MIX	SYD	2,000	77.00	Seventy seven dollars	154,000.00
6	REMOVE AND REPLACE 6" CONCRETE DRIVEWAY APPROACH AND SIDEWALK	SFT	1,000	8.00	Eight dollars	8,000.00
7	EARTH EXCAVATION	CYD	10,000	19.00	Nineteen dollars	190,000.00
8	SUBGRADE UNDERCUTTING	CYD	6,000	5.00	Five dollars	30,000.00
9	BASE COARSE AGGREGATE 21AA	CYD	10,000	20.00	Twenty dollars	200,000.00
10	ADJUSTING STRUCTURE	EACH	100	100.00	One hundred dollars	10,000.00
11	RECONSTRUCT STRUCTURE	VFT	500	100.00	One hundred dollars	50,000.00
12	NEW FRAME AND COVER	EACH	500	100.00	One hundred dollars	50,000.00
13	EDGE DRAIN, 6 INCH	LFT	1,800	12.00	twelve dollars	21,600.00
14	REMOVE AND REPLACE 4 INCH CONCRETE SIDEWALK	SFT	2,000	8.00	eight dollars	16,000.00
15	ADA CONCRETE RAMP, 7 INCH	SFT	10,000	12.00	twelve dollars	120,000.00
16	REMOVE AND REPLACE 12 INCH RCP STORM PIPE	LFT	500	90.00	Ninety dollars	45,000.00
17	REMOVE AND REPLACE 18 INCH RCP STORM PIPE	LFT	500	100.00	One hundred dollars	50,000.00
18	JOINTS SEALING	LFT	20,000	0.95	Ninety five cents	19,000.00
19	CONCRETE TESTING AND COMPRESSIVE STRENGTH	CYLINDER	800	49.00	forty nine dollars	39,200.00
					PROJECT TOTAL	2,383,800.00

PROPOSAL (Continued)

00 4243 - 2

A & G Construction & Remodeling LLC
1938 Campbell Street, 2nd Floor
Detroit, Mi 48209



AIA Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

**A and G Construction and
Remodeling, LLC
1938 Campbell Street, 2nd Floor
Detroit, MI 48209**

OWNER:

(Name, legal status and address)

**City of Dearborn Heights
6045 Fenton**

Dearborn Heights, MI 48127

BOND AMOUNT: Five Percent (5%) of Amount Bid

SURETY:

(Name, legal status and principal place
of business)

**Merchants National Bonding Inc.
P.O.Box 14498
Des Moines, IA 50306-3498**

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

PROJECT:

(Name, location or address, and Project number, if any)

2024-2026 Street Pavement Program

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this **11th** day of **July, 2024**

A and G Construction and Remodeling, LLC

(Principal)

(Seal)

(Witness)

Owner

(Title)

Merchants National Bonding Inc.

(Surety)

(Seal)

(Witness)

(Title)

Susan L. Small, Attorney-in-Fact

Init.

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**MERCHANTS
BONDING COMPANY™**

POWER OF ATTORNEY

Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations of the State of Iowa, d/b/a Merchants National Indemnity Company (in California only) (herein collectively called the "Companies") do hereby make, constitute and appoint, individually,

Alan P Chandler; Ian J Donald; Jeffrey A Chandler; John L Budde; Krista L Pocket; M Brandon; Patrick E Williams; Susan L Small; T J Griffin; Terence J Griffin; Wendy L Hingson

their true and lawful Attorney(s)-in-Fact, to sign its name as surety(ies) and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

This Power-of-Attorney is granted and is signed and sealed by facsimile under and by authority of the following By-Laws adopted by the Board of Directors of Merchants Bonding Company (Mutual) on April 23, 2011 and amended August 14, 2015 and adopted by the Board of Directors of Merchants National Bonding, Inc., on October 16, 2015.

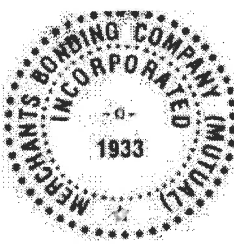
"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof."

"The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and authority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.

In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner-Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 14th day of February, 2024.



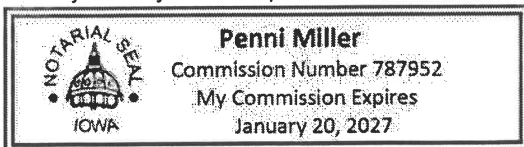
**MERCHANTS BONDING COMPANY (MUTUAL)
MERCHANTS NATIONAL BONDING, INC.
d/b/a MERCHANTS NATIONAL INDEMNITY COMPANY**

By

Larry Taylor
President

STATE OF IOWA
COUNTY OF DALLAS ss.

On this 14th day of February 2024, before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC.; and that the seals affixed to the foregoing instrument are the Corporate Seals of the Companies; and that the said instrument was signed and sealed in behalf of the Companies by authority of their respective Boards of Directors.

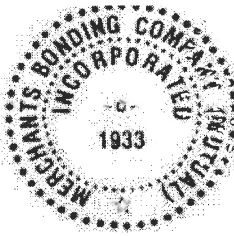
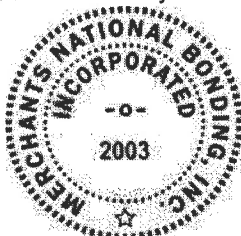


(Expiration of notary's commission does not invalidate this instrument)

[Signature]
Notary Public

I, William Warner, Jr., Secretary of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 11th day of July, 2024.



William Warner Jr.
Secretary

Approved for the Agenda of:	APPROVED
10/22/2024	Motion No. 24-473

7.B.



Department of Public Works

TO: Honorable Mayor Bill Bazzi
Honorable City Council Members

FROM: John Danci, Director

DATE: October 15, 2024

RE: DPW Director Danci - Bid Award - Police Department Boiler Repair/Replacement

The Public Works Department is requesting approval from City Council to:

Contract with Allied Building services for the replacement of the Police Department boiler. The scope of work is outlined in the attached documents. We've determined they are the lowest qualified proposal regarding this project.

This purchase will be paid out of the Building Maintenance Capital Outlay GL#101-265-981.000.

A Budget amendment is necessary to fund the GL in the amount of \$54,100. Please reduce the Police Department Rep & Maint Equip GL 101-300-932.000 in the amount of \$54,100.and increase the Building Maintenance Capital Outlay GL#101-265-981.000.

I respectfully ask that the council authorize the Mayor and the Clerk to sign the required paperwork to execute the contract.

Furthermore, authorize the Mayor and Comptroller or Clerk to sign the necessary warrants, and the Treasurer to issue payments from GL#101-265-981.000

Additionally,

Thank you.

Attachments:

1. Police Boiler Action Item_10_22_24

①

QUOTE SQ-00073689

Quote Valid Until 11/14/2024



ALLIED BUILDING SERVICE

1801 Howard Street Detroit MI 48216
313-230-0800 www.teamallied.com

Date: October 4, 2024

Attn: Chris Dishon (CC INVOICES)

CUSTOMER

Dearborn Heights
6045 Fenton
Dearborn Heights MI 48127

LOCATION OF WORK

Police Department / Justice Center - Dearborn Hgts
25637 Michigan Ave
Dearborn Hts. MI 48125

SCOPE OF WORK

Subject: Install (2) new Hot water tanks @ Police Department / Justice Center - Dearborn Heights

Allied will isolate and drain existing Lochinvar HWT tanks in basement.

Remove tanks off site.

Furnish and Install (2) new American ASME 85 gallon water heaters, 365,000 BTU atmospheric commercial gas water heater.

Model ABCG3-85T360-8N

80% Thermal efficiency

Tank has permaglas ultra coat glass lining.

Provide all new copper pipes after shut offs. (Pro-press fittings)

Provide all new flue pipe venting for new tanks.

Provide new pipe insulation after work / piping is complete.

Reconnect electrical to new tanks.

Existing pumps to remain.

Re pipe gas lines to both tanks.

Provide Permits and Inspection.

Provide 3-Year limited tank warranty / 1 year limited parts warranty

Provide start up and operation check.

Total \$ 54,100.00

Notes:

Lead time on HWT 7-10 days

Existing hot water expansion tank to remain.

Allied would like to start on Friday and finish scope on Saturday to reduce hot water down time.

TERMS ()

Price is firm / fixed

A firm fixed price is a fixed price agreed upon by both parties for the scope of work outlined in the proposal.

Pricing is subject to change with a change in scope of work, delays out of control of the contractor or other such items that change the fundamental direction, scope and ability to complete such work.

Regular Straight Time Wages

Regular and Overtime wages DO NOT include any Prevailing Wage, Davis Bacon or Service Contract Act wages.
If required, pricing will increase.

Quote Valid Until 11/14/2024

If you should have any questions, please feel free to call or email me.

Sincerely,

Keith Hunt
keith@teamallied.com
313-230-0800

TO ACCEPT THIS PROPOSAL, please sign, date and return it, or you can forward an updated purchase order or work order.

CUSTOMER APPROVAL: _____ Printed Name: _____ Date: _____

Thermal Mechanical Service, LLC

MECHANICAL SYSTEMS • DESIGN • INSTALLATION • SERVICE



MEP CONSTRUCTION PROPOSAL

TO: Mo Abdallah - GDI

EMAIL: mo.abdallah@gdi.com

DATE: October 2nd, 2024

PROJECT: Police Department Water Heater Replacement – Dearborn Heights, MI

SCOPE: We propose to furnish all labor, material, tools and supervision to complete the following scope of work. This pricing was generated from site visit and scope of work provided by GDI

Proposed Work Performance Outline:

- Mechanical, plumbing and electrical cut and cap. Drop and demolition Included
- Furnish and install two (2) atmospheric commercial gas domestic hot water boilers on existing housekeeping pad
 - Bock Water Heaters, M/N 66W-370SD-NA
 - 370,000 BTU input
 - 65 gallon capacity
 - Glass-lined storage tank
 - ASME construction
- Furnish and install all required domestic city water, hot water supply and return piping to boilers, re-use existing piping to the extent required for demolition to accommodate new boiler installation. Re-use existing hot water return circulation pump
- Furnish and install all required relief valve and drain piping
- Furnish and install all required exhaust vent for new domestic water boilers, tie into existing main run, reducing fittings as required
- Furnish and install natural gas piping from branch line to new boilers
- Furnish and install as required new conduit and wiring from existing power source to boilers
- All required hoisting/ rigging of equipment
- Plumbing insulation
- Test and balance
- Check, test and start of above referenced equipment
- Taxes and permits

Total Price Installed.....\$78,000.00
(Seventy Eight Thousand Dollars)

P.O. BOX 2137 • BIRMINGHAM, MI 49012 • PHONE (248) 703-8264

Exclusions:

- Overtime, premium labor or shift work
- Bonds
- Concrete equipment pads
- Concrete patching, cutting, sealing or repair
- Fire suppression or fire system integration
- Commissioning of HVAC system, hiring on Cx agent
- Abatement
- Structural steel/ supports for HVAC equipment
- Roof patching, cutting, sealing or repair
- Architectural patching, cutting, sealing or repair
- Ceiling removal and replacement
- Painting
- Full time non-working safety personnel
- Dumpsters/ wash room/ restrooms
- Clean up of un-identifiable debris
- Equipment for negative air pressure, temporary heating or cooling

All work will be of the highest quality and will meet national and local codes. Work quoted is based on normal working hours (Mon. – Fri. 8:00 a.m. to 4:30 p.m.). Thermal Mechanical Service is not responsible for unseen and/or unknown conditions. This pricing will remain in effect for thirty (30) days from the date above.

Our payment terms are:

- 50% down at proposal execution
- 40% at substantial completion
- 10% at final inspection

Please call with any questions or clarifications in regards to this information. I would like to thank you for your interest in Thermal Mechanical Service.

Sincerely,

Thermal Mechanical Service, LLC.

Brandon Wettlaufer

Brandon Wettlaufer



October 2, 2024

Proposal Number: SG-10/2/24-001

City of Dearborn Heights Police Department
25637 Michigan Ave,
Dearborn Heights

RE: Replace (2) New 65 Gallon, 370,000 Input BTU Water Heaters.

Per your request, we are pleased to submit for your review a quotation to provide all material and labor to complete the following:

Scope:

1. Demo- Drain boiler loop down to a safe level to perform demolition of necessary hot water piping.
2. Demo all necessary gas piping, venting and electrical.
3. Remove and dispose of existing boilers.
4. Install- Set new boilers on existing pad.
5. Furnish and install new hot water piping and make up water piping.
6. Furnish and install new gas piping and venting.
7. Furnish and install new condensate trap to drain.
8. Leak check and insulate new piping.
9. Utilize existing power source to provide power to the new Hot Water Heaters.
10. Perform test, check and startup on units by Factory technician if necessary.

Notes:

- Existing domestic hot water tanks and pumps to remain.
- Ainsworth will secure State and City boiler and Mechanical permits.
- Ainsworth will provide anticipated schedule.
- Ainsworth will provide all necessary Reports and documents: startup reports, balance reports, permit approvals, any state boiler stickers, installation, operation and maintenance manuals.
- Equipment lead time- 7 weeks.

Total cost for proposal: \$95,754.37

All work will be of high quality and meet national and local codes. Work quoted is based on premium working hours. Ainsworth, Inc. is not responsible for unseen and/or unknown conditions. Pricing will remain in effect for thirty (30) days from date above. Our payment terms are NET 30 days.

Feel free to call with any questions or concerns.

Ainsworth Inc.
1515 E. Kirby St.
Detroit, MI 48211
www.ainsworth.com

◆ DEPENDABLE
◆ ECO-FRIENDLY
◆ TRUSTWORTHY



Best Regards,

Salathiel Goodson | *Service Manager*

Ainsworth Inc.

1515 E. Kirby Street, Detroit MI 48211

T1: 248-505-3412 | T2: 248-669-1010

Ainsworth Inc.
1515 E. Kirby St.
Detroit, MI 48211
www.ainsworth.com

➡ **DEPENDABLE**
➡ **ECO-FRIENDLY**
➡ **TRUSTWORTHY**

Scope of Work

1. **New Equipment**
 - **Furnish and install two (2) High BTU Atmospheric Commercial Gas Water Heaters, including the following specifications, features and benefits:**
 - Manufactured by Bock Water Heaters, Model 66W-370SD-NA
 - 370,000 Input BTU's
 - 65 Gallon Capacity
 - 80% thermal efficiency
 - Glass-lined storage tank
 - ASME Construction
 - Manufacturer's limited warranty
 - 3-Year limited tank/Heat Exchanger Warranty
 - Lead time is approximately 7-8 weeks
2. **Mobilization Scope:**
 - Procure and receive new equipment
 - Secure State and City boiler and mechanical permits
 - Provide anticipated construction schedule for owner review
3. **Demo Scope:**
 - Drain boiler loop down to a level where we can perform select demolition of the heating hot water piping.
 - Perform selective demo of heating hot water piping loop inside the mechanical room to accommodate new boiler.
 - Perform selective demo of gas piping, power wiring, and control wiring to accommodate new boiler (if applicable).
 - Remove and dispose of existing boiler
 - Existing domestic hot water tank to remain
 - Existing pumps to remain
4. **Piping Installation Scope:**
 - Set new boilers on existing pad
 - Furnish and install new gas piping to connect existing natural gas to new boiler.
 - Furnish and install makeup water, drain, and relief piping for new boilers.
 - Furnish and install condensate trap to existing drain.
 - Perform leak check of new piping.
 - After successful leak check, insulate new piping to match existing.
5. **Electrical Power Wiring Installation Scope:**
 - Utilize existing power source to power (2) new boilers
6. **Startup and Commissioning**
 - Perform startup boilers to be performed by factory technician
7. **General:**
 - Provide closeout documents, including:
 - Startup reports
 - Balance reports
 - Permit approval and state boiler sticker on boiler
 - Installation, operation, and maintenance manuals.

Improving Comfort + Efficiency + Reliability

- Provide (1) year labor on new material and equipment we furnish and install.
- Michigan sales/use tax
- Work quoted to be performed on straight time.

Exclusions

- Asbestos abatement work on associated piping, roofing layers or other surfaces is not Included.
- Any repair work or modifications to existing equipment, including but not limited to the other HVAC systems, pumps, small exhaust fans, etc. is not Included.
- Pre-construction heating hot water flow measurements.
- Adding chemical treatment to heating hot water loop
- Responsibility of existing heating hot water piping loop integrity outside of the mechanical room.

Price to Replace 2 DHW Heaters.....\$108,655.61

Project Payment Terms

50% Mobilization/Deposit

20% Engineering/Material (Prior to delivering material)

30% Monthly Progress Billing (Installation/Commissioning)

This proposal and alternates listed below are hereby accepted and Johnson Controls is authorized to proceed with work; subject, however to credit approval by Johnson Controls, Inc., Milwaukee, Wisconsin.

This proposal is valid until:

City of Dearborn Heights

Johnson Controls, Inc.

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

PO: _____



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Page 4

Approved for the Agenda of:	APPROVED
10/22/2024	Motion No. 24-474

7.C.



Mayor's Office

TO: Honorable Mayor Bill Bazzi

Honorable City Council Members

FROM: Hassane Jamal, Director

DATE: October 16, 2024

RE: Parks & Recreation Director Sower & CEDD Director Jamal - Bid Award - Van Houten Park Parking Lot Replacement

Honorable council chair and members,
I'm requesting your approval for the following:

"Motion to approve awarding the HUD/CDBG/CDBG-CV/Wayne County Parks Millage funded – Van Houten Park Improvement/Parking lot Project - to the lowest qualified bidder DiPonio Contracting LLC in the amount of \$451,974.00, according to the attached bid documents in compliance with the city charter/code of ordinances and to CFR 200/federal procurement rules and regulations.

Further, approve the contract agreement (pre-approved by the CEDD Assistant Corporation Counsel) as attached and authorize the mayor and the clerk to sign it. Additionally, authorize the CEDD -Director to approve related contractual payments applications and necessary or unforeseen change orders and cost of city staff/contract administration/supervision in an amount not to exceed \$21,324.91 and authorize the mayor plus the comptroller or the clerk to issue and sign the necessary warrants for a total amount not to exceed \$473,298.91

Also, authorize the comptroller to amend the following General Ledger accounts to fund the Van Houten Improvement/Parking Lot Project as follow:

From account 103-960-917.023 balance \$10,026.54 for \$10,026.54 to account 103-960-938.24

From account 103-960-918.023 balance \$10,681.73 for \$10,681.73 to account 103-960-938.24

From account 103-960-963.023 balance \$5208.64 for \$5208.64 to account 103-960-938.24

From account 103-960-907.219 balance \$64,382.00 for \$64,382.00 to account 103-960-938.24

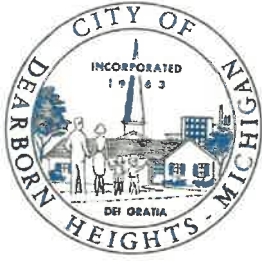
Total of \$90,298.91 as stated above to account 103-969-938.24 with balance of \$350,000.00 from CDBG FY 2024 and \$33,000.00 from the city General Fund totaling \$473,298.91

Furthermore, authorize the treasurer to pay them from the unrestricted general fund pool bank account to be reimbursed from the US treasury later accordingly.

Thank you,
Hassane Jamal

Attachments:

1. 10-22-2024 Agenda-Council Resolution-Bid Award- Budget Amendment-Van Houten Park-Parking Lot (1)
2. Bid Specifications (1)
3. Bid Package-Van Houten Parking Lot Replacement



Bill Bazzi
Mayor

Hassane Jamal
Director
Community and Economic Development

10/16/2024

Honorable council chair and members,

I'm requesting your approval for the following:

"Motion to approve awarding the HUD/CDBG/CDBG-CV/Wayne County Parks Millage funded – Van Houten Park Improvement/Parking lot Project - to the lowest qualified bidder DiPonio Contracting LLC in the amount of \$451,974.00, according to the attached bid documents in compliance with the city charter/code of ordinances and to CFR 200/federal procurement rules and regulations.

Further, approve the contract agreement (pre-approved by the CEDD Assistant Corporation Counsel) as attached and authorize the mayor and the clerk to sign it

Additionally authorize the CEDD -Director to approve related contractual payments applications and necessary or unforeseen change orders and cost of city staff/contract administration/supervision in an amount not to exceed \$ 21,324.91 and authorize the mayor plus the comptroller or the clerk to issue and sign the necessary warrants for a total amount not to exceed \$473,298.91

Also, authorize the comptroller to amend the following General Ledger accounts to fund the Van Houten Improvement/Parking Lot Project as follow:

*From account 103-960-917.023 balance \$010,026.54 for \$010,026.54 to account 103-960-938.24
From account 103-960-918.023 balance \$010,681.73 for \$010,681.73 to account 103-960-938.24
From account 103-960-963.023 balance \$005208.64 for \$005208.64 to account 103-960-938.24
From account 103-960-907.219 balance \$064,382.00 for \$064,382.00 to account 103-960-938.24
Total of \$090,298.91 as stated above to account 103-969-938.24 with balance of \$350,000.00 from CDBG FY 2024 and \$33,000.00 from Wayne County Park Millage Grant multiple FY's totaling \$473,298.91*

Furthermore, authorize the treasurer to pay them from the unrestricted general fund pool bank account to be reimbursed from the US treasury later accordingly.

Thank you,
Hassane Jamal

Attachments:

- 1- Van Houten Park Improvement/Parking Lot Project/Bid Package Documents.
- 2- Bid results and Contract agreement.

Community and Economic Development Department • 26155 Richardson,
Dearborn Heights, MI 48127 • (313) 791-3500

CITY OF DEARBORN HEIGHTS



Name of Bid: Van Houten Park Improvement Project- Parking Lot Replacement

Bid Date 10/15/2024

Bidder	Bid Deposit	Bid Amount	Notes
Premier Group Associates 2221 Bellevue Street Detroit, MI 48207	5% Bid Bond	\$478,369.10	
DiPonio Contracting LLC 51251 Simone Industrial Drive Shelby Township, Michigan, 48316	5% Bid Bond	\$451,974.00	
True North Asphalt 1241 E 11 Mile Madison Heights, Michigan, 48071	5% Bid Bond	\$459,600.00	
			Opened By- Mathew Paul Witnesses 1. Hassan Bazzi 2. Patricia Mahon 6/24/24 3:00 p.m.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT PROJECT
CONTRACT AGREEMENT**

ATTENTION: THIS PROJECT IS FUNDED PARTIALLY/FULLY BY FEDERAL FUNDS FROM THE COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) PROGRAM ADMINISTERED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT. THIS PROJECT IS SUBJECT TO ALL APPLICABLE HUD RULES AND REGULATIONS INCLUDING FEDERAL DAVIS-BACON WAGE RULES AND ALL APPLICABLE CITY REGULATIONS.

ARTICLE I - PARTIES OF AGREEMENT: REGULATIONS

This agreement ("Agreement") is entered into the date executed below, between the City of Dearborn Heights hereinafter referred to as "City", and DiPonio Contracting LLC, hereafter referred to as "Contractor", with its principal offices located at 51251 Simone Industrial Drive, Shelby Township, MI 48316.

This Agreement formalizes the understanding between the City and Contractor DiPonio Contracting LLC, stemming from the City's VAN HOUTEN PARK IMPROVEMENT PROJECT/PARKING LOT REPLACEMENT.

ARTICLE II - WORK TO BE PERFORMED (Scope of Work):

Except as otherwise provided herein, Contractor shall furnish all labor, material, tools, equipment, supervision and services necessary to properly execute and complete the Project. The Project shall be performed by Contractor in good and workman like manner strictly in accordance with the City's request for bids, the City's bid conditions and obligations and the Contractor's bid, all of which are incorporated by reference. The Project will commence within ten (10) days upon execution of the Agreement and shall be completed no later than 60 days from this agreement execution, extensions are allowable and approved by the project manager based on case-by-case situations, otherwise, the Contractor will be subject to liquidated damages.

ARTICLE III- TERMS INCORPORATED BY REFERENCE

This Agreement incorporates the City's Advertisement for Bids, and all documents contained therein, and the Contractor's bid as submitted by reference ("Contract Documents"). Contractor shall be bound by the terms of the Agreement between City and Contractor and all documents incorporated therein.

ARTICLE IV - COMPENSATION:

The contractor agrees that the total quoted price amount \$451,974.00 as set forth in its Contract Documents, namely the bid itemizations/specifications shall be price used to compensate Contractor per unit.

ARTICLE V - PAYMENTS:

- A) INVOICES - The Contractor will be paid on a regular basis, no later than thirty (30) days after receipt of proper invoices, certifications, and progress reports.
- B) PAYMENT/BOND - Payments will be made on a reimbursement basis for services and work actually and satisfactorily performed to the reasonable discretion of the City ("Final Acceptance"), subject to payment of the final invoice being withheld pending final completion and acceptance of the work.
- C) FINAL PAYMENT - A final payment consisting of the unpaid balance of the Contractor's Compensation shall be made within ten (10) days after both of the following occur: (a) full completion of the work by contractor, (b) Final Acceptance of the work by the City.

ARTICLE VI - SPECIAL REQUIREMENTS:

SCHEDULE - Time is the essence of this Agreement and the Project shall be performed in accordance with the City's Request for Bids and the City's Bid Conditions and Obligations for this Program. Contractor agrees to commence the Project under this Agreement after a pre-construction/pre-installation meeting has been held and to punctually and diligently perform all parts of the Project.

If the Contractor is behind in the Project hereunder, fails or refuses to supply sufficient workmen, or to deliver materials or equipment on schedule, and delays progress of the Project; or if the different parts thereof are not commenced, performed, finished and delivered on time, City shall have the right to direct the Contractor to furnish additional labor and expedite deliveries of material and equipment at contractor's cost and expense. If such additional labor is not available, City has the right to require Contractor at the Contractor's cost, to work overtime or additional shifts (and/or weekends and holidays) to such an extent as will be sufficient to speed up and complete the Project in accordance with a progress schedule.

If City incurs any cost associated with the Contractor's delay with respect to the completion dates identified in Article II, the Contractor is to reimburse City for all costs associated with Contractor's delay including any liquidated damages assessed against City

ARTICLE VII - CHANGES:

- A) Definitions- Change Order: A written order signed and issued by the City, namely the Director/Project Manager and his authorized representative to sign and issue the original Agreement, directing the City to make changes to Article II (Scope of Work) of this Agreement.
- Contract Modification: Any written alteration in specifications, delivery point, rate of delivery, period of performance, price, quantity, or other provision of the Agreement must be accomplished by mutual action of the parties to the Agreement.
- B) The city may request changes to the Scope of Work/Services to be furnished or performed by the Contractor under the Agreement, as well as changes in the time of performance of the Agreement. All such changes shall be authorized by with Change Order or Contract Modification, as those terms are defined in this Agreement.
- C) Contractor acknowledges that any change in the Agreement price represents full compensation for all costs associated with the change request, including delay costs, impacts, acceleration, disruption, consequential damages and any other costs of any nature.
- D) No action, conduct, omission, prior failure or course of dealing by the City shall act to waive, modify, change or alter the requirement that Contract Modifications must be in writing and signed by the Owner and the Contractor. The Contractor further acknowledges that Change Orders and Contract Modifications are the exclusive method for effecting any change to the Agreement.

ARTICLE VIII - SUBLETTING - ASSIGNMENT:

No part of this Agreement, nor any interest or monies due therein, may be assigned, sublet or transferred without the City's written consent and/or approval of the assignment. Contractor is liable to City for all acts and omissions of its subcontractors, assignees or transferees.

ARTICLE IX - TERMINATION:

City shall have the right to terminate this Agreement with or without cause, for the convenience of City. In the event of termination for the City's convenience, compensation to Contractor shall be made on the same basis as that provided for in the Agreement between City and Contractor or Contract Documents, or in the absence of applicable provisions, then based on the percentage of the work completed as of the date of termination. In no event shall the Contractor be entitled to anticipated profits.

ARTICLE X - INDEMNITY AND RESPONSIBILITY:

Contractor specifically obligates itself to the City in the following respects (and this agreement is made upon such express condition) to wit.

- A) To indemnify City, including its elected officials, employees, volunteers, and representatives against and save them harmless from any and all claims, suits, liability, expense, including attorney's fees or damage for alleged or actual infringement or violation of any patent or patent right arising in connection with this Agreement and anything done thereunder.
- B) To protect, hold free and harmless defend and indemnify City including its elected officials, employees, volunteers, and representatives from all liability, penalties, costs, losses, damages, expenses, causes of action, claims or judgments, including attorney's fees resulting from injury or death sustained by any person (including Contractor's employees) or damage to property of any kind, which injury, death or damage arises out of or is in any way connected with the performance of work under this contract, except that said agreement shall not be applicable to injury, death or damage to property arising from the sole negligence or willful misconduct of Owner, its elected officials, employees, volunteers, and representatives who are directly responsible to the Contractor. This indemnification agreement shall extend to all claims of this Agreement asserted after termination, for whatever reason.
- C) To warrant and guarantee the work and materials covered by this Agreement and agrees to make good at its expense, any defect in materials or workmanship, including the restoration of work of other subcontractors that has been affected. To indemnify City for any loss that may be caused by breach of said warranty and guarantee.
- D) To obtain and pay for all permits, licenses and official inspections made necessary by its work and to comply with all laws, ordinances and regulations bearing on its work and the conduct thereof.
- E) To be fully and exclusively responsible for, and to pay when due, any and all applicable contribution allowances of other payments or deductions, however termed, required by union labor agreements or required by law now or hereafter in force.

Contractor shall indemnify City against, and save it harmless from any and all loss, damages, costs, expenses and attorney's fees suffered or incurred on account of any breach of the aforesaid obligations and covenants, and any other provisions or covenant of this Agreement.

At any time before final settlement of adjudication of any loss, damage, liability, claim, demand, suit or cause of action for which Contractor in this Agreement agrees to indemnify and save harmless the City.

ARTICLE XI - CLEAN-UP:

Contractor shall clean up and remove all rubbish and debris caused by its operations and employees. Otherwise, after a (48) Hour written Notice, City shall proceed with this work and charge Contractor for all costs plus a 10% mark-up for overhead and profit.

ARTICLE XII- SAFETY:

Contractor shall carry on its work in a safe manner, in accordance with the regulations of the latest revised edition of the Manual of Accident Prevention in Construction of the Associated General Contractors of America, Inc., for the protection of persons and property at the site, and Contractor agrees to abide by all applicable Federal, State and Local laws, ordinances, regulations, standards and rules having reference to safety. Contractor agrees to be solely responsible for the protection and safety of its workmen, for the final selection of safety methods, means and safeguards, for the daily inspection of the work area, and for the instruction of its workmen on safety, including attending and/or conducting safety meetings at least once a week.

ARTICLE XIII - EQUAL EMPLOYMENT OPPORTUNITY:

A) During the performance of this Agreement, the Contractor, for itself, its members, officers, directors, and employees in interest agrees as follows:

Non-discrimination: The Contractor with regard to the Services to be performed under this Agreement shall not discriminate on grounds prohibited by federal, state or local constitution, law, statute or ordinance in:

1. The selection and retention of subcontractors or the procurement of materials and leases of equipment.
2. The Contractor agrees that it will not discriminate against any person, employee, consultant or applicant for employment with respect to his/her hire tenure, terms, conditions, or privileges or employment or hire of employees, consultants or applicants for employment.

B) Solicitations for Subcontractors: In all solicitations made by the Contractor for work to be performed under a subcontract, each potential subcontractor shall be notified by the Contractor of the Contractor's obligations under this Agreement, and the regulations relative to non-discrimination.

C) Sanctions for Noncompliance: In the event of noncompliance with the non-discrimination provisions of this Agreement and the City's Non-Discrimination Clause, the City shall impose such sanctions as it may determine to be appropriate, including, but not limited to:

1. Withholding of payments to the Contractor under this Agreement until the Contractor complies; and/or
2. cancellation, termination or suspension of this Agreement, in whole or in part; and/or
3. The imposition of liquidated damages (not a penalty) in the amount of \$500.00 per day, for each day that the Contractor shall fail to comply with said requirements, as determined by the Comptroller, in consultation with the Community and Economic Development Director.

ARTICLE XIV - DEFAULT:

A) If the Contractor:

1. fails to supply complete labor, materials, equipment and supervision in sufficient time and quantity to meet the City's progress schedule (as outlined in Article II of this Agreement) as it may be modified;
2. causes stoppage or delay of, or interference with the project;
3. fails to promptly pay its subcontractors (if applicable), laborers, suppliers, material, men and/or employees for work on the project;
4. fails to pay worker's compensation or other employee benefits, withholding or any other taxes;
5. fails to comply with the safety provisions of this Agreement or with any safety order, regulation or requirement of any governing authority having jurisdiction over this project;

6. fails in the performance or observance of any of the provisions of this contract; or

7.

- a) files a voluntary petition in bankruptcy or is adjudicated insolvent;
- b) obtains an order for relief under Section 301 of the Bankruptcy Code;
- c) files any petition or fails to contest any petition filed seeking any reorganization or similar relief under any laws relating to bankruptcy, insolvency or other relief of debtors;
- d) or seeks or consents to or is acquiescent in the appointment of any trustee, receiver or liquidator of any of its assets or property;
- e) makes an assignment for the benefit of creditors; or
- f) makes an admission, in writing, of its inability to pay its debts as they became due;

B) Then City, after giving the Contractor written or oral (subsequently confirmed in writing) notice of such default and forty-eight (48) hours within which to cure such default, shall have the right to exercise any one or more of the following remedies:

- 1) Require that Contractor utilize, at its own expense, additional labor, overtime labor (including Saturday and Sunday work) and additional shifts as necessary to overcome the consequences of any delay attributable to Contractor's default.
 - a) After giving Contractor an additional forty-eight (48) hours written (or oral, subsequently confirmed in writing) notice, terminate this Contract, without thereby waiving or releasing any rights or remedies against Contractor or its sureties, and, by itself or through others, take possession of the work, and all materials, equipment, facilities, tools, scaffolds and appliances of Contractor relating to the work, for the purposes of costs and other damages under the contract and for the breach thereof; and
 - b) Recover from Contractor all costs incurred by City to complete the work plus a 10% mark-up for overhead and profit, and further recover from Contractor all losses, damages, penalties and fines, whether actual or liquidated, direct or consequential, and all reasonable attorneys' fees suffered or incurred by City by reason of, or as a result of, Contractor's default.

ARTICLE XV- INSURANCE:

Before Contractor does any work at, or prepares to deliver material to the City, the Contractor shall provide a Certificate of Insurance, issued by a financially responsible insurance company licensed to write insurance in the State of Michigan, evidencing coverage in amounts not less than required by specifications or as follows:

- A) Workers' Compensation: to the extent and at least the minimum amount required by the laws of the state in which work is to be performed.
- B) Commercial General, Professional and Automobile Liability (if applicable): in the amount of One Million Dollars (\$1,000,000.00) for any one occurrence, and Two Million Dollars (\$2,000,000.00) aggregate. The coverage shall apply to all work and activities performed by Contractor with respect to the Scope of Work/Services for the Project. In addition, Contractor shall provide a statement from its insurer(s) noting that the work and activities to be performed by the Contractor with respect to the project, is not excluded from coverage.
- C) No payments will be made to the Contractor until current certificates of insurance have been received and approved. Insurance companies, named insured and policy forms shall be subject to the City's approval. In the event the coverage evidenced by any such Certificate is canceled or reduced, Contractor shall procure and furnish to City before the effective date of such cancellation, new Certificates conforming to the above requirements. Until evidence of conformity is received, services and related payments will be suspended.
- D) Hold Harmless Agreement: Contractor shall assume liability and indemnify City from and against any liability and all loss, costs, damages, expenses, including attorney fees, on account of claims per personal injury, including death, sustained by any person or persons whatsoever, including employees of Contractor, and for injury to or destruction of property of a person or organization, including loss of use thereof, arising out of the performance of the work under this agreement, excepting only such matters caused solely and exclusively by the fault or negligence of the City.

If applicable, the subcontractor shall have its own insurance company naming Contractor and the City as Additional Insured with the following clause added: "The insurance afforded to the Additional Insured is Primary Insurance. If the additional insured has other

insurance which is applicable to the loss on an excess or contingent basis, the amount of the company's liability under this policy shall not be reduced by the existence of such other insurance."

Each of the above required Certificates shall provide that the coverage therein afforded shall not be canceled or reduced except by written notice to City given at least thirty (30) days prior to the effective date of such cancellation or reduction.

ARTICLE XVI- TAXES AND CONTRIBUTIONS:

The Contractor hereby accepts and assumes exclusive liability for and shall indemnify, protect and save harmless the City from and against the payment of:

- A) All contributions, taxes or premiums (including interest and penalties thereon) which may be payable under the Unemployment Insurance Law of any State, the Federal Social Security Act, Federal, State, County and/or Municipal Tax Withholding Act, Federal, State, County and/or Municipal Tax Withholding Laws, or any other law, measured upon the payroll of or required to be withheld from employees, by whomsoever employed or engaged in the work to be performed and furnished under this Agreement.
- B) All sales, use, personal property and other taxes (including interest and penalties thereon) required by any Federal, State, County, Municipal or other law to be paid or collected by the Contractor or any of its vendors or any other person or persons or agents acting for, through or under it or any of them, by reason of the performance of the work or the acquisition, ownership, furnishing or use of any materials, equipment, supplies, labor, services or other items for or in connection with the work.
- C) All pension, welfare, vacation, annuity and other union benefit contributions payable, under or in connection with respect, to all persons; by whomsoever employed or engaged in the work to be performed and furnished under this Agreement.

ARTICLE XVII – MISCELLANEOUS:

- A) Failure of a party to insist on the strict performance of this Agreement shall not constitute waiver of any breach of the Agreement.
- B) The Contractor agrees that it is not, and will not become, in arrears to the City upon any contract, debt, or obligation to the City, including real property and personal property taxes.
- C) The singular shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders.
- D) If any provision of this Agreement or the application thereof to any person or circumstances shall, to any extent, be judicially determined to be invalid or unenforceable, the remainder of this Agreement, or the application of such provisions to person or circumstances other than those to which it is invalid or unenforceable, shall not be affected thereby, and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.
- E) Insolvency Proceedings: Contractor is not involved in any proceeding by or against it in any court under the Bankruptcy Code or any other insolvency or debtor's relief act, whether state or federal, or for the appointment of a trustee, receiver, liquidator, assignee, or other similar official of Contractor or Contractor's property.
- F) Status of Contractor. Contractor is a Michigan corporation which is duly organized, validly existing, and in good standing under the laws of the State of Michigan; and, further, is properly authorized, according to its Articles of Incorporation, Bylaws, and duly adopted Resolution, to enter into and carry out the transactions contemplated by this Agreement.

ARTICLE XVIII - GENERAL:

Except as otherwise provided in Article III, this Agreement contains all of the agreements of the parties hereto with respect to any matter covered or mentioned in this Agreement, and no other agreement or understanding shall be effective for any purpose. No provision of this Agreement may be amended or added to except by an agreement in writing signed by the parties hereto.

The Contractor represents and agrees that it has carefully examined and understands this Agreement and the other Contract Documents as provided in Article III, has investigated the nature, locality and site of the work, and that it enters into this Agreement on the basis of its own examination, investigation and evaluation of all such matters and not in reliance upon any opinions or representations of the City, or of any of their respective officers, agents, servants or employees.

No waiver by the City of any provision of this Agreement shall be deemed to be waived of any other provisions hereof or of any subsequent breach by Contractor of the same or any other provision.

ARTICLE XVIII – PROJECT LABOR AND MATERIAL WARRANTEE:

- 24 months warrantee**
- A) The contractor agrees to provide unconditional **24 months warrantee** on labor and materials of its work, or the work performed by the contractor's employees or subcontractors hired by the contractor to perform work on this contract, if the damages or the repair is due to failure caused by workmanship or non-performing/failed materials.
 - B) The contractor agreed to provide a performance bond for the duration up to the completion of this said project according to the bid specifications, conditions and obligations.
 - C) The contractor agreed to provide labor and materials bond to cover the project.
 - D) The contractor agreed to provide a warranty/maintenance bond for 24 months starting on the date project is completed/passed all required inspections/certifications/satisfaction/acceptance/signed off/Davis Bacon documentations and fully paid for according to the bid specifications, conditions and obligations.

ARTICLE XX - CERTIFICATIONS:

- A) The individual signing certifies that he/she is authorized to contract on behalf of the Contractor and to make these certifications.
- B) The individual signing certifies that the Contractor is not involved in any agreement to pay money or other consideration for the execution of this agreement, other than to an employee of the Contractor.
- C) The individual signing certifies that the Contractor meets the independence standards of the Government Auditing Standards issued by the Comptroller General of the United States.
- D) The individual signing certifies that he/she is aware that all individuals to be assigned to the audit have met the GAO Continuing Education Requirement of 80 hours of continuing education every two years; and that 24 hours of this education have been in subjects directly related to the auditing of government grants.
- E) The individual signing certifies that he/she has read and understands the GAO requirement of an external quality control review at least once every three years.
- F) The individual signing certifies that the Contractor, and any individuals to be assigned to the audit, do not have a record of substandard audit work and have not been debarred or suspended from doing work with any Federal, state or local government. (If the Contractor or any individual assigned to the audit has been found in violation of any state or AICPA professional standards, this information must be disclosed.)
- G) The individual signing certifies that the Contractor does carry professional malpractice insurance or is otherwise adequately self-insured.
- H) The individual signing certifies that the contractor does not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin, disability, or any other basis prohibited by law. The contractor shall take affirmative action to ensure that employees are treated during their employment, without regard to race, color, religion, sex, age, national origin, disability, or any other basis prohibited by law. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or forms of compensation; and selection for training, including apprenticeship. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability or any other basis prohibited by law.

ARTICLE XXI – "Appendix II to Part 200 - Contract Provisions for Non-Federal Entity Contracts Under Federal Awards":

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

- A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by [41 U.S.C. 1908](#), must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

- B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be affected and the basis for settlement.
- C) Equal Employment Opportunity. Except as otherwise provided under [41 CFR Part 60](#), all contracts that meet the definition of “federally assisted construction contract” in [41 CFR Part 60-1.3](#) must include the equal opportunity clause provided under [41 CFR 60-1.4\(b\)](#), in accordance with Executive Order 11246, “Equal Employment Opportunity” ([30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp.](#), p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at [41 CFR part 60](#), “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”
- D) Davis-Bacon Act, as amended ([40 U.S.C. 3141-3148](#)). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act ([40 U.S.C. 3141-3144](#), and [3146-3148](#)) as supplemented by Department of Labor regulations ([29 CFR Part 5](#), “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act ([40 U.S.C. 3145](#)), as supplemented by Department of Labor regulations ([29 CFR Part 3](#), “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.
- E) Contract Work Hours and Safety Standards Act ([40 U.S.C. 3701-3708](#)). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with [40 U.S.C. 3702](#) and [3704](#), as supplemented by Department of Labor regulations ([29 CFR Part 5](#)). Under [40 U.S.C. 3702](#) of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of [40 U.S.C. 3704](#) are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
- F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of “funding agreement” under [37 CFR § 401.2 \(a\)](#) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of [37 CFR Part 401](#), “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.
- G) Clean Air Act ([42 U.S.C. 7401-7671q](#).) and the Federal Water Pollution Control Act ([33 U.S.C. 1251-1387](#)), as amended - Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act ([42 U.S.C. 7401-7671q](#)) and the Federal Water Pollution Control Act as amended ([33 U.S.C. 1251-1387](#)). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
- H) Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see [2 CFR 180.220](#)) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at [2 CFR 180](#) that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.
- I) Byrd Anti-Lobbying Amendment ([31 U.S.C. 1352](#)) - Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant

or any other award covered by [31 U.S.C. 1352](#). Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

J) See [§ 200.323](#).

K) See [§ 200.216](#).

L) See [§ 200.322](#).

[[78 FR 78608](#), Dec. 26, 2013, as amended at [79 FR 75888](#), Dec. 19, 2014; [85 FR 49577](#), Aug. 13, 2020]

ARTICLE XXII – NON-COLLUSION AFFIDAVIT:

- 1) The person who is signing this contract agreement is authorized legally to represent **DiPonio Contracting LLC** as the lowest qualified bidder.
- 2) The person who signing this contract agreement is fully informed concerning the preparation and contents of the attached bid and of all pertinent circumstances with respect to it.
- 3) The person who signing this contract agreement affirm the attached bid is genuine and not a collusive or sham bid.
- 4) The person who signing this contract agreement affirm that neither the person or entity submitting the attached bid, nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest (including the undersigned), has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other person or entity submitting a bid, or with any person affiliated with such a person or entity, to submit a collusive or sham Quote in connection with the contract for which the attached bid has been submitted, or to refrain from submitting a bid in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other person or entity submitting a bid, or with any person affiliated with such a person or entity, to fix the price or prices in the attached bid or of any other bidder, or, to fix any overhead, profit, or cost element of the bid price of any other bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Dearborn Heights or any person interested in the proposed contract.
- 5) The price, prices, and/or other terms quoted in the attached bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or parties in interest.

John C. Maltese, President

Name and Title of Person Signing

Sworn to and signed in my presence by: _____ on _____, 2024.

_____, Notary Public

Wayne County, Michigan

Acting in Wayne County, Michigan

My Commission Expires: _____

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers or agents as of the date executed below.

CITY OF DEARBORN HEIGHTS ("City")

By:

Name: Bill Bazzi

Title: Mayor

Dated:

Signature:

By:

Name: Lynne Senia

Title: Clerk

Dated:

Signature:

DiPonio Contracting LLC Contractor

By:

Name: John C Malteese

Title: President

Dated:

Signature:

Federal Tax ID #

Amendment #1

This amendment is a correction to the time currently published on the city website from 11:59 PM to be 3:00 PM as stated in the bid on 10/15/2024 @ 3:00 PM and as published correctly on Bid Net website.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

ADVERTISEMENT FOR BID

This bid is a “sealed construction bid” and the bid contract will be awarded to the lowest “total cost” qualified bidder according to CFR 200 federal procurement rules and regulations.

This project is funded fully by federal funds from the HUD/Community Development Block Grant (CDBG) program administered by the U.S. Department of Housing and Urban Development.

This project is subject to all applicable HUD rules and regulations including federal Davis-Bacon prevailing wages, BABA and Section 3, and all applicable city ordinances.

This bid is processed according to title 2-CFR 200 guidelines

Women, minorities, veterans, small business owners, and section 3 contractors are encouraged to participate and respond to this bid request.

THIS BID PACKAGE IS PUBLISHED ON OCTOBER 4TH, 2024, AND CAN BE OBTAINED AS INDICATED BELOW:

Sealed bids must be received by the Comptroller's Office, City of Dearborn Heights, 6045 Fenton, Dearborn Heights, on or before October 15, 2024, by 3:00 PM – by responding on Bidnet or by hand delivery. At which time, as indicated (October 15, 2024, by 3:00 PM) all bids will be publicly opened and read aloud.

This bid evaluation and award is based on the lowest cost qualified bidder according to the qualifications required in this published bid package in compliance with the federal procurement rules and regulations.

Bid package can be obtained online by registering (free registration) on Bidnet. Go to www.govbids.com. Select the Michigan MITN System.

Bid package can be obtained in person, free of charge from the City of Dearborn Heights Comptroller's Office located at 6045 Fenton, Dearborn Heights, MI 48127, Monday through Thursday from 8.00 AM-5:00PM.

Bid package can also be obtained by downloading it from the City of Dearborn Heights' website at www.dearbornheightsmi.gov.

For additional information related to the project, please email:
Parks and Recreation Director Kim Sower at ksower@dearbornheightsmi.gov

And copy:

CEDD Director Hassane Jamal at hjamal@dearbornheightsmi.gov

City Engineer Ali Dib at adib@dearbornheightsmi.gov

Bid submission questions can be directed to Mathew Paul at mpaul@dearbornheightsmi.gov

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

All emails will be documented for record and any changes in the bid package will be published by bid amendments.

Any modifications or alternatives to the bid package by the bidders will disqualify the bid.

All information/communications about this bid must be done by email.

Due to funding limitations, the City of Dearborn Heights/CEDD reserves the right to choose certain tasks only and calculate the total bid cost from the qualified bidders.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

BID INDEX

- This package includes the following documents:
- Instructions to bidders
- Bid responses forms
- Non-discrimination clause
- Reference forms
- Bid specifications/requirements/compliance
- General bid conditions and obligations
- Mandatory site visitation acknowledgement
- Contract agreement sample

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

INSTRUCTIONS TO BIDDERS

At the time of opening, any bid that does not meet the requirements will be marked as “does not meet bid specifications” and automatically disqualified.

It is agreed, if the bidder to whom the contract shall have been awarded shall refuse or neglect to execute the contract and properly secure the same within ten (10) days, the amount of the bid deposit shall be forfeited to and retained by the Owner as liquidated damages for such neglect or refusal.

Further, if the successful bidder fails to comply with the terms of the bid proposal, contract, or purchase order, the City has the option to hold the successful bidder to the terms of the proposal or forfeit the bid deposit as liquidated damages.

Bidder will identify business entity as individual, or if doing business under assumed name, indicate assumed name, partnership (Naming Partners), Corporation, Foreign or Domestic (Naming Principal Officers), and indicate capacity or person executing proposal and bid.

Revised: 11/27/79 (Council Motion 79-1003)

And also, on:

1/08/80 (Council Motion 80-15)

And also, on:

6/12/91 (Council Motion 91-299)

**THIS PROJECT IS TIME-SENSITIVE, AND THE OBJECTIVE IS TO COMPLETE AND PAY-OFF THIS PROJECT BY
NOVEMBER 31, 2024.**

WORK MUST START IMMEDIATELY BY WINNING BIDDER UPON SIGNING THE CONTRACT.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

ADDITIONAL INSTRUCTIONS TO BIDDERS

Sealed bid must be received on time (time stated in "advertisement for bids"). Proposal shall be addressed to: Comptroller, City of Dearborn Heights, 6045 Fenton, Dearborn Heights, Michigan, 48127, in a sealed envelope marked:

"VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT"

For your bid to be qualified and considered, please include the following 3 items in your sealed bid package:

1. The three (3) page "bid response form," signed and notarized (page #3).
2. The mandatory site visit acknowledgement signed by the CEDD project coordinator Mr. Hassan Bazzi.
3. Certified or cashier's check in the amount of 5% or 5% bid bond of the gross sum bid. Should the gross sum bid be \$5,000.00 or less, a certified cashier's check or bid bond will not be required to validate the bid proposal.

If you are the lowest of the qualified bidder, you will be contacted to submit the following qualification documents within ten (10) business days from date of request. Please do not submit these documents in the sealed bid. Failure to submit the following documents within the allotted time will constitute disqualification. (The bid winner will be the lowest, most qualified bidder.)

1. Non-discrimination clause.
2. Reference form (3 references from similar projects).
3. Copy of certificate of good standing (Michigan Department of Labor and Economic Growth, Bureau of Commercial Services, Corporation Division P.O. Box 30054 Lansing, Michigan 48909-7554. Phone - (517) 241-6470 for copies, certificates, or general information).
4. Copy of Articles of Incorporation (Michigan Department of Labor and Economic Growth, Bureau of Commercial Services, Corporation Division P.O. Box 30054 Lansing, Michigan 48909-7554 phone - (517) 241-6470 for copies, certificates, or general information).
5. A valid certificate of liability insurance naming the city of Dearborn Heights as a holder. All general contractors and subcontractors, on all work done under the contract, are required to carry full workman's compensation insurance and comprehensive public liability insurance coverage, protecting the owner for not less than \$1,000,000 in the event of bodily injury, including death, and \$1,000,000 in the event of property damage arising out of the work performed by the contractor.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

6. Copies of all applicable licenses (driver, state issued ID., building, electrical, plumbing, mechanical, asbestos, lead, etc.)
7. Any other supportive documentation the city may request to qualify the bidder.

If you are the bid winner, before contract signing, you must submit a work performance bond, labor and materials bond, and warranty/maintenance bond.

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

BID RESPONSE FORM PAGE #1

Notice:

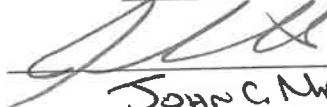
Failure to complete this form shall result in your response being deemed non-responsive and rejected without any further evaluation.

This project is funded partially/fully by federal funds from the Community Development Block Grant (CDBG) program administered by the U.S. Department of Housing and Urban Development.

This project is subject to all applicable HUD rules and regulations, including federal Davis-Bacon wage rules and regulations and all applicable city regulations.

The undersigned hereby offers and agrees to furnish the goods and/or services in compliance with the city's sealed bid, which includes all documents outlined in the bid package index.

Agree: please sign and complete bid documents

 Date: 10 / 15 / 2024
JOHN C. NALASE, PRESIDENT
Disagree: stop here, you are not qualified to bid

Four hundred fifty one thousand nine hundred \$ 451,974.00
(Total figure written) seventy four and 00/100 (Total figure)
(Total figure from itemized bid sheets) dollars

 10/15/2024DiPonio
Contracting LLC

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

TASK NAME	TASK SPECIFICATIONS	TASK COST
#1	Section 01 31 19 Project Meeting	\$0.00
#2	Section 01 33 00 Submittal Procedures	\$0.00
#3	Section 01 45 00 Quality Control	\$11,000.00
#4	Section 01 57 13 Temporary Erosion and Sediment Control	\$7,000.00
#5	Section 01 50 00 Temporary Facilities and Controls	\$10,250.00
#6	Section 01 60 00 attached Product Requirements	\$0.00
#7	Section 01 71 23.26 Construction Layout and Staking	\$6,500.00
#8	Section 01 77 00 Closeout Procedures	\$0.00
#9	Section 01 89 00 Site Construction Performance Requirements	\$0.00
#10	Section 01 11 00 Summary of Work	\$0.00
#11	Section 02 41 13 Selective Demolition	\$31,156.00

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#12	Section 03 11 00 Concrete Forming	\$0.00
#13	Section 03 15 00 Concrete Accessories	\$0.00
#14	Section 03 60 00 Grouting	\$0.00
#15	Section 04 05 11 Mortaring and Grouting	\$0.00
#16	Section 04 05 13 Masonry Mortaring	\$0.00
#17	Section 04 20 00 Unit Masonry	\$0.00
#18	Section 31 11 00 Clearing and Grubbing	\$1,000.00
#19	Section 31 22 00 Grading	\$38,000.00
#20	Section 31 23 13 Subgrade Preparation	\$40,750.00
#21	Section 31 23 33 Trenching and Backfilling	\$100.00
#22	Section 32 11 23 Aggregate Base Courses	\$50,520.00
#23	Section 32 13 13 Concrete Paving	\$1,800.00

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#24	Section 32 12 16 Bituminous Paving	\$115,778.00
#25	Section 32 13 15 Sidewalks and Driveways	\$32,300.00
#26	Section 32 17 13 Parking Bumpers	\$8,700.00
#27	Section 32 90 00 Planting	\$19,600.00
#28	Section 32 92 19 Seeding	\$9,820.00
#29	Section 03 30 00 Cast-in-Place Concrete	\$0.00
#30	Section 33 30 00 Sanitary Utility Sewerage Piping	\$2,500.00
#31	Section 33 41 00 Storm Utility Drainage Piping	\$20,300.00
#32	Section 33 46 69 Green Infrastructure Stormwater Management Systems	\$35,500.00
#33	BABA - BUILD AMERICA, BUY AMERICA ACT	\$0.00
#34	Record of Employee Interview Instructions	\$0.00
#35	Davis Bacon Record of Employee Interview	\$0.00

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#36	Wage and Hour Division Sheets	\$0.00
#37	Davis Bacon Prevailing Wages	\$0.00
#38	Section 3 Compliance	\$100.00
#39	Site plans drawings for Review, implementation, /application and References	\$0.00
#40	Mandatory Site visit will be on October, 8 2024 @ 2 P.M. Site acknowledgement form must be signed and dated by Mr. Hassan Bazzi, the city/CEDD project coordinator.	\$0.00
#41	Building and Engineering Permits	\$3,900.00
#42	Performance Bond	\$2,250.00
#43	Labor and Materials Bond	\$2,250.00
#44	24 Months Warranty-Maintenance Bond After Job Completion Date/Sign Off/Paid in Full	\$900.00
#45	Add All Individual Cost and Record Totals in the Bid Response page #1	\$451,974.00

Prepared BY CEDD Project Coordinator Hassan Bazzi

Reviewed and Approved by CEDD Construction Coordinator Ali Baydoun

Project City Engineer Ali Dib

Approved by CEDD Director Hassane Jamal

Project Owner Kim Sower

Kim Sower 10-3-24

Hassan Bazzi 10/2/2024

Ali Baydoun 5880 10/2/2024

Ali Dib 10-2-24

Hassane Jamal 10/2/2024

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

BID RESPONSE FORM PAGE #2

ADDENDA:

The undersigned has read, understands, and is fully cognizant of the information to Respondents Offer and Form of Contract, all sections thereto, together with any written addendum issued in connection with any of the above. The undersigned hereby acknowledges receipt of the following addendum(s): none. In addition, the undersigned has completely and appropriately filled out all required forms.

OBLIGATION:

The undersigned, by submission of this Offer, hereby agrees to be obligated, if selected as the Contractor, to provide the stated goods and/or services to the City, and to enter a Contract with the City, in accordance with all terms and bid documents as indicated in the bid table of content, and addenda in the Request for Response, as well as the Form of Contract, together with any written addendum as specified above.

COMPLIANCE:

The undersigned hereby accepts all administrative requirements of the Sealed Bid and will be in-compliance with such requirements. By submitting this Response Form, the Respondent represents that: 1) the Respondent is in compliance with any applicable City and HUD regulations, and 2) if awarded a contract to provide the services required in the Sealed Bid, the Respondent will comply with the requirements set forth in the Sealed Bid and (3) Respondent will sign the Construction / installation / installation Contract (attached to Bid Package for reference) if awarded the Contract. Failure to sign the Construction / installation / installation Contract within fourteen (14) days of notification of award of contract will result in a breach and Respondent will forfeit his/her bid bond.

NONCOLLUSION:

The undersigned, by submission of this Response Form, hereby declares that this Response is made without collusion with any other business making any other Response, or which otherwise would make a Response.

SUBMITTAL REQUIREMENTS:

The undersigned certifies it has attached a complete response to each of the submittal requirements of this SEALED BID. The undersigned also certifies it has read and understands all Bid Documents as outlined in the "Bid Index Page".

MANDATORY SITE VISIT:

As indicated in the Bid Specifications/ Requirements and compliance section

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
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BID RESPONSE FORM PAGE #3

No Response shall be accepted which has not been manually signed in ink in the appropriate space below:

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:

For clarification of this offer, contact:

Company Name

Name: DiPonio Contracting LLC

Address: 51251 Simone Industrial Dr.

Phone: 586-997-4150

City: Shelby Township

State: MI

Zip: 48316

Fax: 586-997-4192

Signature of Person Authorized to Sign:

Printed Name: John C. Maltese

Title: President

Federal Tax ID: 20-8039399

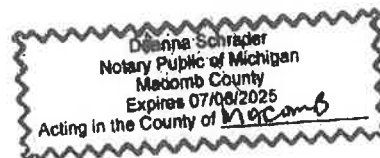
Acknowledged before me by John C. Maltese (name) as President

(title) of (Company DiPonio Contracting) this 15th (day) of October (month),
2024. (Year)

Notary Signature:

My Commission Expires:

Affix Seal



CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
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NON-DISCRIMINATION CLAUSE

NOTE: Failure to respond will cause your firm to be placed in "non-compliance" status and you will not be eligible to receive City contracts.

In connection with the performance of work under this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, national origin, age* or sex*. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, national origin, age* or sex*. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age* or sex*.

(3) The contractor or his collective bargaining representative will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or workers' representative of the contractor's commitments under this section.

(4) The contractor will comply with all published rules, regulations, directives, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended which may be in effect prior to the taking of bids for any individual state project.

(5) The contractor will furnish and file compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission, said forms may also elicit information as to the practices, policies, program, and employment statistics of each subcontractor as well as the contractor himself, and said contractor will permit access to his books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain compliance with this contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended.

(6) In the event that the Civil Rights Commission finds, after a hearing held pursuant to its rules, that a contractor has not complied with the contractual obligations under this agreement, the Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the Administrative Board of the State of Michigan, which Administrative Board may order the cancellation of the contract found to have been violated, and/or declare the contractor ineligible for future contracts with the state and its political and Civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the contractor

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
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complies with said order of the Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the contractor is declared ineligible to contract as a contracting party in future contracts. In any case before the Civil Rights Commission in which, cancellation of an existing contract is a possibility, the contracting agency shall be notified of such possible remedy and shall be given the option by the Civil Rights Commission to participate in such proceedings.

(7) The contractor will include or incorporate by reference the provisions of the foregoing paragraphs (1) through (6) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Michigan Civil Rights Commission. **And will provide in every subcontract or purchase order that said provisions will be binding upon each subcontractor or seller.

* SECTION 3a (a) ACT NO. 344, PUBLIC ACTS OF 1965, AS
AMENDED BY ACT NO. 349, PUBLIC ACTS OF 1966, READS:

"IT IS AN UNFAIR EMPLOYMENT PRACTICE:

(a) FOR ANY EMPLOYER, BECAUSE ANY INDIVIDUAL IS BETWEEN THE AGES OF 35 AND 60, OR BECAUSE OF THE SEX OF ANY INDIVIDUAL, TO REFUSE TO HIRE OR OTHERWISE TO DISCRIMINATE AGAINST HIM WITH EMPLOYMENT. ANY SUCH REFUSAL TO HIRE OR DISCRIMINATION SHALL NOT BE AN UNFAIR EMPLOYMENT PRACTICE IF BASED ON LAW, REGULATION, THE REQUIREMENTS OF ANY FEDERAL OR STATE TRAINING OR EMPLOYMENT PROGRAM OR ON A BONA FIDE OCCUPATIONAL QUALIFICATION AND EXCEPT IN SELECTING INDIVIDUALS FOR AN APPRENTICE PROGRAM OR AN ON-THE-JOB TRAINING PROGRAM INTENDED TO HAVE A DURATION OF MORE THAN 4 MONTHS."

** Except for those:

1. Subcontracts for goods or services in any amount of less than \$5,000.
2. Subcontracts entered into with parties employing less than three employees.

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

I acknowledge that I have reviewed and understand the seven (7) foregoing clauses and We (the company) will adhere to the City's non-discrimination policy.

Name of Company DiPonio Contracting LLC

Signature  Title John C. Maltese, President
Date 10/15/2024

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

MANDATORY SITE VISITATION ACKNOWLEDGEMENT

810
728-2303

I Avery Bartlett On behalf of D: Ponio Contracting
(Print name) (Print company name)

have visited the locations specified in this bid packet and made all the appropriate measurements, quotations, pictures, etc., as deemed necessary for this bid.


CDBG Rehabilitation Specialist

To schedule the mandatory walk thru for this Bid please contact:

Hassan Bazzi

Phone: 313 -791- 3504 Fax: 313 -791- 3501

Email: hbazzi@dearbornheightsmi.gov

Address: 26155 Richardson, Dearborn Heights, MI 48127

BID BOND

**Pennsylvania Insurance Company
10805 Old Mill Road Omaha, NE 68154**

KNOW ALL MEN BY THESE PRESENTS: That we **DiPonio Contracting, LLC**, called the Principal, and Pennsylvania Insurance Company, a New Mexico corporation, called the Surety, are held and firmly bound unto **City of Dearborn Heights**, called the Oblige, in the sum of **Five-Percent of Greatest Amount Bid** U.S. Dollars (**\$5% GAB**), for the payment of which we bind ourselves, and our successors and assigns, jointly and severally, as provided herein.

WHEREAS, Principal has submitted or is about to submit a bid to the Oblige on a contract for **Van Houten Park Improvement Project** ("Project").

NOW, THEREFORE, the condition of this bond is that if Oblige accepts Principal's bid, and Principal enters into a contract with Oblige in conformance with the terms of the bid and provides such bond or bonds as may be specified in the bidding or contract documents, then this obligation shall be void; otherwise Principal and Surety will pay to Oblige the difference between the amount of Principal's bid and the amount for which Oblige shall in good faith contract with another person or entity to perform the work covered by Principal's bid, but in no event shall Surety's and Principal's liability exceed the penal sum of this bond.

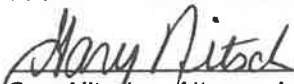
Signed this **15th** day of **October**, **2024**.

PRINCIPAL

DiPonio Contracting, LLC


, Title **John C. Matzke, President**

PENNSYLVANIA INSURANCE COMPANY


Gary Nitsche, Attorney-in-Fact

**POWER OF ATTORNEY
SIRIUSPOINT AMERICA INSURANCE COMPANY
NEW YORK**

KNOW ALL MEN BY THESE PRESENTS: That SiriusPoint America Insurance Company, a New York corporation, having its principal office in the City of New York, pursuant to the following Resolution, which was adopted by the Board of Directors of the Company, to wit:

RESOLVED, that the President, Senior Vice President, Chief Financial Officer, Secretary or Assistant Secretary is hereby authorized to execute Powers of Attorney appointing as attorneys-in-fact selected employees of certain surety companies who shall have the power for and on behalf of the Company to execute and affix the seal of the Company to surety contracts as co-surety.

Does hereby nominate, constitute and appoint:

Kenneth Nitsche, Robert James Nitsche, Robert K. Nitsche, Craig Parker, Gary Nitsche, Jennifer J. Bieble

Its true and lawful attorney-in-fact, to make, execute, seal and deliver for and on its behalf, and as its act and deed; any and all bonds, contracts, agreements of indemnity, and other undertakings in suretyship (NOT INCLUDING bonds without a fixed penalty or financial guarantee bonds) and to bind the Company thereby as fully and to the same extent as if same were signed by the duly authorized officers of the Company, provided, however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

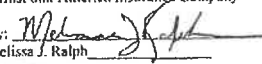
\$50,000,000 single bond limit

All acts of said attorneys-in-fact pursuant to the authorities herein given are hereby ratified and confirmed. The executive officers listed above in the Resolution may from time to time and at any time remove any such appointee and revoke the power given to him or her.

The execution of such bonds or undertakings in pursuance of these presents, within one year of the date of issue of these presents, shall be binding upon said Company, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in New York, New York, in their own proper persons.

IN WITNESS WHEREOF, SiriusPoint America Insurance Company has caused its corporate seal to be hereunto affixed, and these presents to be signed by its Secretary this 17th day of August in the year 2023.

SiriusPoint America Insurance Company

By: 

Melissa J. Ralph
Secretary

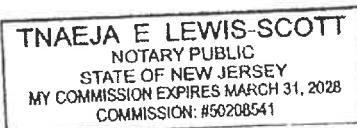
State of New Jersey)

) ss.

County of Monmouth)

On this 17th day of August 2023, before me, a Notary Public of the State of New Jersey in and for the County of Monmouth duly commissioned and qualified, came Melissa J. Ralph, Secretary, of SiriusPoint America Insurance Company, to me personally known to be the individual and officer described in, and who executed the preceding instrument, and acknowledged the execution of the same, and, being by me duly sworn, depose and saith, that she is the officer of the Company aforesaid, and that the seal affixed to the preceding instrument as the corporate seal of said Company, and the said corporate seal and her signature as officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal.



State of New Jersey
County of Monmouth


Notary Public
My Commission expires
March 31, 2028

I, Melissa J. Ralph, Secretary, of SiriusPoint America Insurance Company, a New York corporation, do hereby certify that the above and foregoing is a full, true correct copy of Power of Attorney, is still in force and effect and has not been revoked.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Company this 15 day of October, 2024




Melissa J. Ralph
Secretary

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

BID RESPONSE FORM PAGE #1

Notice:

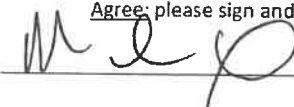
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This project is funded partially/fully by federal funds from the Community Development Block Grant (CDBG) program administered by the U.S. Department of Housing and Urban Development.

This project is subject to all applicable HUD rules and regulations, including federal Davis-Bacon wage rules and regulations and all applicable city regulations.

The undersigned hereby offers and agrees to furnish the goods and/or services in compliance with the city's sealed bid, which includes all documents outlined in the bid package index.

Agree: please sign and complete bid documents

 Date: 10/15/24

Disagree: stop here, you are not qualified to bid

Four Hundred Fifty-Nine Thousand Six Hundred Dollars \$459,600.⁰⁰/₁₀₀

(Total figure written)

(Total figure)

(Total figure from itemized bid sheets)

True north
asphalt

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

TASK NAME	TASK SPECIFICATIONS	TASK COST
#1	Section 01 31 19 Project Meeting	Ø
#2	Section 01 33 00 Submittal Procedures	\$ 1,000
#3	Section 01 45 00 Quality Control	\$ 3,500
#4	Section 01 57 13 Temporary Erosion and Sediment Control	\$ 5,000
#5	Section 01 50 00 Temporary Facilities and Controls	\$ 5,000
#6	Section 01 60 00 attached Product Requirements	\$ 5,000
#7	Section 01 71 23.26 Construction Layout and Staking	\$ 3,500
#8	Section 01 77 00 Closeout Procedures	\$ 3,500
#9	Section 01 89 00 Site Construction Performance Requirements	\$ 8,000
#10	Section 01 11 00 Summary of Work	
#11	Section 02 41 13 Selective Demolition	\$ 40,000

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#12	Section 03 11 00 Concrete Forming	\$ 30,500
#13	Section 03 15 00 Concrete Accessories	\$ 10,000
#14	Section 03 60 00 Grouting	N/A
#15	Section 04 05 11 Mortaring and Grouting	N/A
#16	Section 04 05 13 Masonry Mortaring	N/A
#17	Section 04 20 00 Unit Masonry	N/A
#18	Section 31 11 00 Clearing and Grubbing	N/A
#19	Section 31 22 00 Grading	\$ 9,000
#20	Section 31 23 13 Subgrade Preparation	\$ 34,500
#21	Section 31 23 33 Trenching and Backfilling	\$ 7,000
#22	Section 32 11 23 Aggregate Base Courses	\$ 47,000
#23	Section 32 13 13 Concrete Paving	\$ 25,000

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#24	Section 32 12 16 Bituminous Paving	\$142,500
#25	Section 32 13 15 Sidewalks and Driveways	\$25,000
#26	Section 32 17 13 Parking Bumpers	\$5,000
#27	Section 32 90 00 Planting	N/A
#28	Section 32 92 19 Seeding	\$3,500
#29	Section 03 30 00 Cast-in-Place Concrete	\$30,500
#30	Section 33 30 00 Sanitary Utility Sewerage Piping	N/A
#31	Section 33 41 00 Storm Utility Drainage Piping	N/A
#32	Section 33 46 69 Green Infrastructure Stormwater Management Systems	—
#33	BABA - BUILD AMERICA, BUY AMERICA ACT	—
#34	Record of Employee Interview Instructions	—
#35	Davis Bacon Record of Employee Interview	—

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#36	Wage and Hour Division Sheets	
#37	Davis Bacon Prevailing Wages	Included in price
#38	Section 3 Compliance	
#39	Site plans drawings for Review, implementation, /application and References	
#40	Mandatory Site visit will be on October, 8 2024 @ 2 P.M. Site acknowledgement form must be signed and dated by Mr. Hassan Bazzi, the city/CEDD project coordinator.	✓
#41	Building and Engineering Permits	\$15,000
#42	Performance Bond	
#43	Labor and Materials Bond	
#44	24 Months Warranty-Maintenance Bond After Job Completion Date/Sign Off/Paid in Full	\$22,980
#45	Add All Individual Cost and Record Totals in the Bid Response page #1	

\$459,600⁰²
HB

Prepared BY CEDD Project Coordinator Hassan Bazzi

Reviewed and Approved by CEDD Construction Coordinator Ali Baydoun

Project City Engineer Ali Dib

Approved by CEDD Director Hassane Jamal

Project Owner Kim Sower

Kim Sower 10-3-24

Hassan Bazzi 10/2/2024
Ali Baydoun 5880 10/2/2024
Ali Dib 10-2-24
Hassane Jamal 10/2/2024

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

BID RESPONSE FORM PAGE #2

ADDENDA:

The undersigned has read, understands, and is fully cognizant of the information to Respondents Offer and Form of Contract, all sections thereto, together with any written addendum issued in connection with any of the above. The undersigned hereby acknowledges receipt of the following addendum(s): none. In addition, the undersigned has completely and appropriately filled out all required forms.

OBLIGATION:

The undersigned, by submission of this Offer, hereby agrees to be obligated, if selected as the Contractor, to provide the stated goods and/or services to the City, and to enter a Contract with the City, in accordance with all terms and bid documents as indicated in the bid table of content, and addenda in the Request for Response, as well as the Form of Contract, together with any written addendum as specified above.

COMPLIANCE:

The undersigned hereby accepts all administrative requirements of the Sealed Bid and will be in compliance with such requirements. By submitting this Response Form, the Respondent represents that: 1) the Respondent is in compliance with any applicable City and HUD regulations, and 2) if awarded a contract to provide the services required in the Sealed Bid, the Respondent will comply with the requirements set forth in the Sealed Bid and (3) Respondent will sign the Construction / installation / installation Contract (attached to Bid Package for reference) if awarded the Contract. Failure to sign the Construction / installation / installation Contract within fourteen (14) days of notification of award of contract will result in a breach and Respondent will forfeit his/her bid bond.

NONCOLLUSION:

The undersigned, by submission of this Response Form, hereby declares that this Response is made without collusion with any other business making any other Response, or which otherwise would make a Response.

SUBMITTAL REQUIREMENTS:

The undersigned certifies it has attached a complete response to each of the submittal requirements of this SEALED BID. The undersigned also certifies it has read and understands all Bid Documents as outlined in the "Bid Index Page".

MANDATORY SITE VISIT:

As indicated in the Bid Specifications/ Requirements and compliance section

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

BID RESPONSE FORM PAGE #3

No Response shall be accepted which has not been manually signed in ink in the appropriate space below:

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:

For clarification of this offer, contact:

Company Name True North Asphalt

Name: Nicholas Whitehurst

Address: 1241 E. 11 mile Rd

Phone: (248) 289-6826

City Madison Heights

State MI

Zip 48071

Fax: (248) 289-6826

Signature of Person Authorized to Sign:

Printed Name: Nicholas Whitehurst

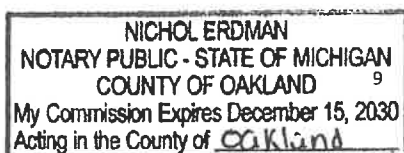
Title: President

Federal Tax ID 87-3918806

Acknowledged before me by [Signature] (name) as President

(title) of (Company) True North Asphalt this 15th (day) of October (month),
2024. (Year)

Notary Signature: Nichol Erdman
My Commission Expires: Dec 15 2030
Affix Seal



9

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

NON-DISCRIMINATION CLAUSE

NOTE: Failure to respond will cause your firm to be placed in "non-compliance" status and you will not be eligible to receive City contracts.

In connection with the performance of work under this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, national origin, age* or sex*. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, national origin, age* or sex*. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age* or sex*.

(3) The contractor or his collective bargaining representative will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or workers' representative of the contractor's commitments under this section.

(4) The contractor will comply with all published rules, regulations, directives, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended which may be in effect prior to the taking of bids for any individual state project.

(5) The contractor will furnish and file compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission, said forms may also elicit information as to the practices, policies, program, and employment statistics of each subcontractor as well as the contractor himself, and said contractor will permit access to his books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain compliance with this contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended.

(6) In the event that the Civil Rights Commission finds, after a hearing held pursuant to its rules, that a contractor has not complied with the contractual obligations under this agreement, the Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the Administrative Board of the State of Michigan, which Administrative Board may order the cancellation of the contract found to have been violated, and/or declare the contractor ineligible for future contracts with the state and its political and Civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the contractor

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

complies with said order of the Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the contractor is declared ineligible to contract as a contracting party in future contracts. In any case before the Civil Rights Commission in which, cancellation of an existing contract is a possibility, the contracting agency shall be notified of such possible remedy and shall be given the option by the Civil Rights Commission to participate in such proceedings.

(7) The contractor will include or incorporate by reference the provisions of the foregoing paragraphs (1) through (6) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Michigan Civil Rights Commission. **And will provide in every subcontract or purchase order that said provisions will be binding upon each subcontractor or seller.

* SECTION 3a (a) ACT NO. 344, PUBLIC ACTS OF 1965, AS
AMENDED BY ACT NO. 349, PUBLIC ACTS OF 1966, READS:

"IT IS AN UNFAIR EMPLOYMENT PRACTICE:

(a) FOR ANY EMPLOYER, BECAUSE ANY INDIVIDUAL IS BETWEEN THE AGES OF 35 AND 60, OR BECAUSE OF THE SEX OF ANY INDIVIDUAL, TO REFUSE TO HIRE OR OTHERWISE TO DISCRIMINATE AGAINST HIM WITH EMPLOYMENT. ANY SUCH REFUSAL TO HIRE OR DISCRIMINATION SHALL NOT BE AN UNFAIR EMPLOYMENT PRACTICE IF BASED ON LAW, REGULATION, THE REQUIREMENTS OF ANY FEDERAL OR STATE TRAINING OR EMPLOYMENT PROGRAM OR ON A BONA FIDE OCCUPATIONAL QUALIFICATION AND EXCEPT IN SELECTING INDIVIDUALS FOR AN APPRENTICE PROGRAM OR AN ON-THE-JOB TRAINING PROGRAM INTENDED TO HAVE A DURATION OF MORE THAN 4 MONTHS."

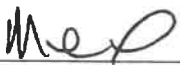
** Except for those:

1. Subcontracts for goods or services in any amount of less than \$5,000.
2. Subcontracts entered into with parties employing less than three employees.

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

I acknowledge that I have reviewed and understand the seven (7) foregoing clauses and We (the company) will adhere to the City's non-discrimination policy.

Name of Company True North Asphalt

Signature  Title President
Date 10/15/24

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

MANDATORY SITE VISITATION ACKNOWLEDGEMENT

313
332-5709

I TRUE NORTH ASPHALT LLC On behalf of
DEARBORN MI CEDD
(Print name) (Print company name)

have visited the locations specified in this bid packet and made all the appropriate measurements, quotations, pictures, etc., as deemed necessary for this bid.


CDBG Rehabilitation Specialist

To schedule the mandatory walk thru for this Bid please contact:

Hassan Bazzi

Phone: 313 -791- 3504 Fax: 313 -791- 3501

Email: hbazzi@dearbornheightsmi.gov

Address: 26155 Richardson, Dearborn Heights, MI 48127

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we

True North Asphalt, LLC
1241 E. Eleven Mile Road, Madison Heights, MI 48071

as Principal, hereinafter called Principal, and

The Ohio Casualty Insurance Company
175 Berkeley Street, Boston, MA 02116

a corporation duly organized under the laws of the State of **New Hampshire**
as Surety, hereinafter called Surety, are held and firmly bound unto

City of Dearborn Heights
6045 Fenton Street, Dearborn Heights, MI 48127

as Obligee, hereinafter called Obligee, in the sum of **Five Percent of Accompanying Bid**

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. Dollars (5% of Bid)

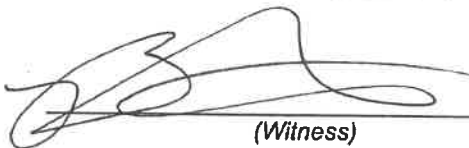
WHEREAS, the Principal has submitted a bid for (Here insert full name, address and description of project)

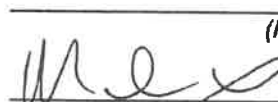
Van Houten Park Improvement Project

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

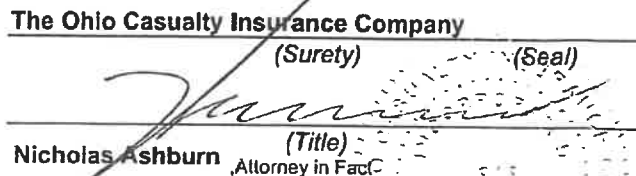
Signed and sealed this 15th day of October, 2024.

True North Asphalt, LLC


(Witness)

{  (Principal) (Seal)
(Title)


(Witness)

{ **The Ohio Casualty Insurance Company**
(Surety) (Seal)

(Title)
Nicholas Ashburn, Attorney in Fact



This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: 8198086-013068

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Anne Barick; Holly Nichols; Jason Rogers; Mark Madden; Michael D. Lechner; Nicholas Ashburn; Paul M. Hurley; Richard S. McGregor; Robert D. Heuer

all of the city of Rochester Hills state of MI each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 30th day of November, 2018.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

State of PENNSYLVANIA ss
County of MONTGOMERY

On this 30th day of November, 2018 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 15th day of October, 2024



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

BID RESPONSE FORM PAGE #1

Notice:

Failure to complete this form shall result in your response being deemed non-responsive and rejected without any further evaluation.

This project is funded partially/fully by federal funds from the Community Development Block Grant (CDBG) program administered by the U.S. Department of Housing and Urban Development.

This project is subject to all applicable HUD rules and regulations, including federal Davis-Bacon wage rules and regulations and all applicable city regulations.

The undersigned hereby offers and agrees to furnish the goods and/or services in compliance with the city's sealed bid, which includes all documents outlined in the bid package index.

Agree: please sign and complete bid documents

 _____ Date: 10/15/2024

Disagree: stop here, you are not qualified to bid

four hundred seventy eight thousand, three hundred sixty nine dollars, and ten cents

\$ 478,369.10

100 

(Total figure written)

(Total figure)

(Total figure from itemized bid sheets)

Premier Group
associates

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

TASK NAME	TASK SPECIFICATIONS	TASK COST
#1	Section 01 31 19 Project Meeting	1500
#2	Section 01 33 00 Submittal Procedures	2500
#3	Section 01 45 00 Quality Control	2500
#4	Section 01 57 13 Temporary Erosion and Sediment Control	2414
#5	Section 01 50 00 Temporary Facilities and Controls	747
#6	Section 01 60 00 attached Product Requirements	1000
#7	Section 01 71 23.26 Construction Layout and Staking	2842
#8	Section 01 77 00 Closeout Procedures	1500
#9	Section 01 89 00 Site Construction Performance Requirements	1500
#10	Section 01 11 00 Summary of Work	1000
#11	Section 02 41 13 Selective Demolition	65000

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#12	Section 03 11 00 Concrete Forming	5000
#13	Section 03 15 00 Concrete Accessories	1500
#14	Section 03 60 00 Grouting	1500
#15	Section 04 05 11 Mortaring and Grouting	1500
#16	Section 04 05 13 Masonry Mortaring	2500
#17	Section 04 20 00 Unit Masonry	2500
#18	Section 31 11 00 Clearing and Grubbing	5500
#19	Section 31 22 00 Grading	11440
#20	Section 31 23 13 Subgrade Preparation	12150
#21	Section 31 23 33 Trenching and Backfilling	4800
#22	Section 32 11 23 Aggregate Base Courses	24850
#23	Section 32 13 13 Concrete Paving	24000

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#24	Section 32 12 16 Bituminous Paving	135,000
#25	Section 32 13 15 Sidewalks and Driveways * Cost included in #23	Ø
#26	Section 32 17 13 Parking Bumpers	9,831
#27	Section 32 90 00 Planting	32,890
#28	Section 32 92 19 Seeding	1,500
#29	Section 03 30 00 Cast-in-Place Concrete * Cost included in #23	Ø
#30	Section 33 30 00 Sanitary Utility Sewerage Piping	Ø
#31	Section 33 41 00 Storm Utility Drainage Piping	14,425
#32	Section 33 46 69 Green Infrastructure Stormwater Management Systems	1,500
#33	BABA - BUILD AMERICA, BUY AMERICA ACT	5,000
#34	Record of Employee Interview Instructions	5,000
#35	Davis Bacon Record of Employee Interview	5,000

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#36	Wage and Hour Division Sheets	5000
#37	Davis Bacon Prevailing Wages	6000
#38	Section 3 Compliance	2500
#39	Site plans drawings for Review, implementation, /application and References	2500
#40	Mandatory Site visit will be on October, 8 2024 @ 2 P.M. Site acknowledgement form must be signed and dated by Mr. Hassan Bazzi, the city/CEDD project coordinator.	Ø
#41	Building and Engineering Permits	15,000
#42	Performance Bond	19160
#43	Labor and Materials Bond	19160
#44	24 Months Warranty-Maintenance Bond After Job Completion Date/Sign Off/Paid in Full	19160
#45	Add All Individual Cost and Record Totals in the Bid Response page #1	478369

Prepared BY CEDD Project Coordinator Hassan Bazzi

Reviewed and Approved by CEDD Construction Coordinator Ali Baydoun

Project City Engineer Ali Dib

Approved by CEDD Director Hassane Jamal

Project Owner Kim Sower

Hassan Bazzi 10/2/2024

Ali Baydoun 5880 10/2/2024

Ali Dib 10-2-24

Hassane Jamal 10/2/2024

Kim Sower 10-3-24

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

BID RESPONSE FORM PAGE #2

ADDENDA:

The undersigned has read, understands, and is fully cognizant of the information to Respondents Offer and Form of Contract, all sections thereto, together with any written addendum issued in connection with any of the above. The undersigned hereby acknowledges receipt of the following addendum(s): none. In addition, the undersigned has completely and appropriately filled out all required forms. Addendum #1 10/7/2024

OBLIGATION:

The undersigned, by submission of this Offer, hereby agrees to be obligated, if selected as the Contractor, to provide the stated goods and/or services to the City, and to enter a Contract with the City, in accordance with all terms and bid documents as indicated in the bid table of content, and addenda in the Request for Response, as well as the Form of Contract, together with any written addendum as specified above.

COMPLIANCE:

The undersigned hereby accepts all administrative requirements of the Sealed Bid and will be in-compliance with such requirements. By submitting this Response Form, the Respondent represents that: 1) the Respondent is in compliance with any applicable City and HUD regulations, and 2) if awarded a contract to provide the services required in the Sealed Bid, the Respondent will comply with the requirements set forth in the Sealed Bid and (3) Respondent will sign the Construction / installation / installation Contract (attached to Bid Package for reference) if awarded the Contract. Failure to sign the Construction / installation / installation Contract within fourteen (14) days of notification of award of contract will result in a breach and Respondent will forfeit his/her bid bond.

NONCOLLUSION:

The undersigned, by submission of this Response Form, hereby declares that this Response is made without collusion with any other business making any other Response, or which otherwise would make a Response.

SUBMITTAL REQUIREMENTS:

The undersigned certifies it has attached a complete response to each of the submittal requirements of this SEALED BID. The undersigned also certifies it has read and understands all Bid Documents as outlined in the "Bid Index Page".

MANDATORY SITE VISIT:

As indicated in the Bid Specifications/ Requirements and compliance section

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

BID RESPONSE FORM PAGE #3

No Response shall be accepted which has not been manually signed in ink in the appropriate space below:

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:

For clarification of this offer, contact:

Company Name Premier Group Associates, LC

Name: Shelby Hahn, Sales Manager shelly@pgalc.com

Address: 2221 Bellevue Street

Phone: 203.383.0524

City Detroit

State MI

Zip 48207

Fax: 313.963.0101

Signature of Person Authorized to Sign:



Printed Name: Brad Byarski

Title: Chief Operating Officer

Federal Tax ID 45-0569048

Acknowledged before me by Brad Byarski (name) as Chief Operating Officer

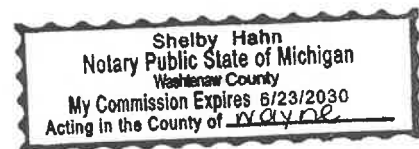
(title) of (Company Premier Group Associates, LC) this 15th (day) of October (month),
2024. (Year)

Notary Signature:



My Commission Expires: 6/23/2030

Affix Seal



**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

NON-DISCRIMINATION CLAUSE

NOTE: Failure to respond will cause your firm to be placed in "non-compliance" status and you will not be eligible to receive City contracts.

In connection with the performance of work under this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, national origin, age* or sex*. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, national origin, age* or sex*. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age* or sex*.

(3) The contractor or his collective bargaining representative will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or workers' representative of the contractor's commitments under this section.

(4) The contractor will comply with all published rules, regulations, directives, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended which may be in effect prior to the taking of bids for any individual state project.

(5) The contractor will furnish and file compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission, said forms may also elicit information as to the practices, policies, program, and employment statistics of each subcontractor as well as the contractor himself, and said contractor will permit access to his books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain compliance with this contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended.

(6) In the event that the Civil Rights Commission finds, after a hearing held pursuant to its rules, that a contractor has not complied with the contractual obligations under this agreement, the Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the Administrative Board of the State of Michigan, which Administrative Board may order the cancellation of the contract found to have been violated, and/or declare the contractor ineligible for future contracts with the state and its political and Civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the contractor

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

complies with said order of the Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the contractor is declared ineligible to contract as a contracting party in future contracts. In any case before the Civil Rights Commission in which, cancellation of an existing contract is a possibility, the contracting agency shall be notified of such possible remedy and shall be given the option by the Civil Rights Commission to participate in such proceedings.

(7) The contractor will include or incorporate by reference the provisions of the foregoing paragraphs (1) through (6) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Michigan Civil Rights Commission. **And will provide in every subcontract or purchase order that said provisions will be binding upon each subcontractor or seller.

* SECTION 3a (a) ACT NO. 344, PUBLIC ACTS OF 1965, AS
AMENDED BY ACT NO. 349, PUBLIC ACTS OF 1966, READS:

"IT IS AN UNFAIR EMPLOYMENT PRACTICE:

(a) FOR ANY EMPLOYER, BECAUSE ANY INDIVIDUAL IS BETWEEN THE AGES OF 35 AND 60, OR BECAUSE OF THE SEX OF ANY INDIVIDUAL, TO REFUSE TO HIRE OR OTHERWISE TO DISCRIMINATE AGAINST HIM WITH EMPLOYMENT. ANY SUCH REFUSAL TO HIRE OR DISCRIMINATION SHALL NOT BE AN UNFAIR EMPLOYMENT PRACTICE IF BASED ON LAW, REGULATION, THE REQUIREMENTS OF ANY FEDERAL OR STATE TRAINING OR EMPLOYMENT PROGRAM OR ON A BONA FIDE OCCUPATIONAL QUALIFICATION AND EXCEPT IN SELECTING INDIVIDUALS FOR AN APPRENTICE PROGRAM OR AN ON-THE-JOB TRAINING PROGRAM INTENDED TO HAVE A DURATION OF MORE THAN 4 MONTHS."

** Except for those:

1. Subcontracts for goods or services in any amount of less than \$5,000.
2. Subcontracts entered into with parties employing less than three employees.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

I acknowledge that I have reviewed and understand the seven (7) foregoing clauses and We (the company) will adhere to the City's non-discrimination policy.

Name of Company_____

Signature_____ Title_____
Date_____

Bid Bond



AIA Document A310™ – 2010

CONTRACTOR:

(Name, legal status and address)

PREMIER GROUP ASSOCIATES, LC
2221 Bellevue St.
Detroit, MI 48207

Bid Bond No. GR32139

SURETY:

(Name, legal status and principal place of business)

Granite Re, Inc.
14001 Quailbrook Drive
Oklahoma City, OK 73134

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:

(Name, legal status and address)

City of Dearborn Heights
26155 Richardson
Dearborn Heights, MI 48127

BOND AMOUNT: Five Percent of the Bid Amount (5.00% of Bid Amount)

PROJECT:

(Name, location or address, and Project number, if any)
Van Houten Park - Parking Lot Replacement

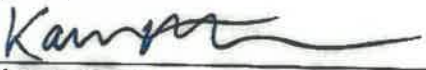
The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 11th day of October, 2024


(Witness) Shelby Hahn


(Witness) Karla Heffron

PREMIER GROUP ASSOCIATES, LC
(Principal)

(Title) Brad Byarski, Chief Operating Officer
Granite Re, Inc.
(Surety)

(Title) Samuel Duchow, Attorney-in-Fact

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001110

GRANITE RE, INC.
GENERAL POWER OF ATTORNEY

Know all Men by these Presents:

That GRANITE RE, INC., a corporation organized and existing under the laws of the State of MINNESOTA and having its principal office at the City of OKLAHOMA CITY in the State of OKLAHOMA does hereby constitute and appoint:

MICHAEL J. DOUGLAS; CHRIS STEINAGEL; CHRISTOPHER M. KEMP; KARLA HEFFRON; SAMUEL DUCHOW; ROBERT DOWNEY; JULIA DOUGLAS; CONNIE SMITH; KORY MORTEL; ELIOT MOTU its true and lawful Attorney-in-Fact(s) for the following purposes, to wit:

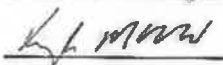
To sign its name as surety to, and to execute, seal and acknowledge any and all bonds, and to respectively do and perform any and all acts and things set forth in the resolution of the Board of Directors of the said GRANITE RE, INC. a certified copy of which is hereto annexed and made a part of this Power of Attorney; and the said GRANITE RE, INC. through us, its Board of Directors, hereby ratifies and confirms all and whatsoever the said:

MICHAEL J. DOUGLAS; CHRIS STEINAGEL; CHRISTOPHER M. KEMP; KARLA HEFFRON; SAMUEL DUCHOW; ROBERT DOWNEY; JULIA DOUGLAS; CONNIE SMITH; KORY MORTEL; ELIOT MOTU may lawfully do in the premises by virtue of these presents.

In Witness Whereof, the said GRANITE RE, INC. has caused this instrument to be sealed with its corporate seal, duly attested by the signatures of its President and Assistant Secretary, this 31st day of July, 2023.

STATE OF OKLAHOMA)
) SS:
COUNTY OF OKLAHOMA)

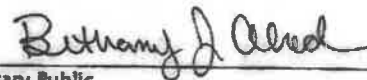



Kenneth D. Whittington, President

Kyle P. McDonald, Assistant Secretary

On this 31st day of July, 2023, before me personally came Kenneth D. Whittington, President of the GRANITE RE, INC. Company and Kyle P. McDonald, Assistant Secretary of said Company, with both of whom I am personally acquainted, who being by me severally duly sworn, said, that they, the said Kenneth D. Whittington and Kyle P. McDonald were respectively the President and the Assistant Secretary of GRANITE RE, INC., the corporation described in and which executed the foregoing Power of Attorney; that they each knew the seal of said corporation; that the seal affixed to said Power of Attorney was such corporate seal, that it was so fixed by order of the Board of Directors of said corporation, and that they signed their name thereto by like order as President and Assistant Secretary, respectively, of the Company.

My Commission Expires:
April 21, 2027
Commission #: 11003620




Notary Public

GRANITE RE, INC.
Certificate

THE UNDERSIGNED, being the duly elected and acting Assistant Secretary of Granite Re, Inc., a Minnesota Corporation, HEREBY CERTIFIES that the following resolution is a true and correct excerpt from the July 15, 1987, minutes of the meeting of the Board of Directors of Granite Re, Inc. and that said Power of Attorney has not been revoked and is now in full force and effect.

"RESOLVED, that the President, any Vice President, the Assistant Secretary, and any Assistant Vice President shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the Company in the course of its business. On any instrument making or evidencing such appointment, the signatures may be affixed by facsimile. On any instrument conferring such authority or on any bond or undertaking of the Company, the seal, or a facsimile thereof, may be impressed or affixed or in any other manner reproduced; provided, however, that the seal shall not be necessary to the validity of any such instrument or undertaking."

IN WITNESS WHEREOF, the undersigned has subscribed this Certificate and affixed the corporate seal of the Corporation this
11 day of October, 2024.




Kyle P. McDonald, Assistant Secretary

GR0800-1

CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127

MANDATORY SITE VISITATION ACKNOWLEDGEMENT

I Michael Cousinsman On behalf of
Premier Group Associates
(Print name) (Print company name)

have visited the locations specified in this bid packet and made all the appropriate measurements, quotations, pictures, etc., as deemed necessary for this bid.


CDBG Rehabilitation Specialist

To schedule the mandatory walk thru for this Bid please contact:

Hassan Bazzi

Phone: 313 -791- 3504 Fax: 313 -791- 3501

Email: hbazzi@dearbornheightsmi.gov

Address: 26155 Richardson, Dearborn Heights, MI 48127

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

TASK NAME	TASK SPECIFICATIONS	TASK COST
#1	Section 01 31 19 Project Meeting	
#2	Section 01 33 00 Submittal Procedures	
#3	Section 01 45 00 Quality Control	
#4	Section 01 57 13 Temporary Erosion and Sediment Control	
#5	Section 01 50 00 Temporary Facilities and Controls	
#6	Section 01 60 00 attached Product Requirements	
#7	Section 01 71 23.26 Construction Layout and Staking	
#8	Section 01 77 00 Closeout Procedures	
#9	Section 01 89 00 Site Construction Performance Requirements	
#10	Section 01 11 00 Summary of Work	
#11	Section 02 41 13 Selective Demolition	

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#12	Section 03 11 00 Concrete Forming	
#13	Section 03 15 00 Concrete Accessories	
#14	Section 03 60 00 Grouting	
#15	Section 04 05 11 Mortaring and Grouting	
#16	Section 04 05 13 Masonry Mortaring	
#17	Section 04 20 00 Unit Masonry	
#18	Section 31 11 00 Clearing and Grubbing	
#19	Section 31 22 00 Grading	
#20	Section 31 23 13 Subgrade Preparation	
#21	Section 31 23 33 Trenching and Backfilling	
#22	Section 32 11 23 Aggregate Base Courses	
#23	Section 32 13 13 Concrete Paving	

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#24	Section 32 12 16 Bituminous Paving	
#25	Section 32 13 15 Sidewalks and Driveways	
#26	Section 32 17 13 Parking Bumpers	
#27	Section 32 90 00 Planting	
#28	Section 32 92 19 Seeding	
#29	Section 03 30 00 Cast-in-Place Concrete	
#30	Section 33 30 00 Sanitary Utility Sewerage Piping	
#31	Section 33 41 00 Storm Utility Drainage Piping	
#32	Section 33 46 69 Green Infrastructure Stormwater Management Systems	
#33	BABA - BUILD AMERICA, BUY AMERICA ACT	
#34	Record of Employee Interview Instructions	
#35	Davis Bacon Record of Employee Interview	

BID SPECIFICATIONS, REQUIREMENTS AND COMPLIANCE
CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
VAN HOUTEN PARK IMPROVEMENT PROJECT
PARKING LOT REPLACEMENT

#36	Wage and Hour Division Sheets	
#37	Davis Bacon Prevailing Wages	
#38	Section 3 Compliance	
#39	Site plans drawings for Review, implementation, /application and References	
#40	Mandatory Site visit will be on October, 8 2024 @ 2 P.M. Site acknowledgement form must be signed and dated by Mr. Hassan Bazzi, the city/CEDD project coordinator.	
#41	Building and Engineering Permits	
#42	Performance Bond	
#43	Labor and Materials Bond	
#44	24 Months Warranty-Maintenance Bond After Job Completion Date/Sign Off/Paid in Full	
#45	Add All Individual Cost and Record Totals in the Bid Response page #1	

Prepared BY CEDD Project Coordinator Hassan Bazzi

Reviewed and Approved by CEDD Construction Coordinator Ali Baydoun

Project City Engineer Ali Dib

Approved by CEDD Director Hassane Jamal

Project Owner Kim Sower

Hassan Bazzi 10/2/2024

Ali Baydoun 5880 10/2/2024

Ali Dib 10-2-24

Hassane Jamal 10/2/2024

Kim Sower 10-3-24

SECTION 01 31 19 PROJECT MEETINGS

PART 1 GENERAL

1.01 PRECONSTRUCTION MEETING

- A. Prior to the delivery of materials or the start of any construction, the Contractor shall request a Preconstruction Meeting from the Engineer. A minimum three (3) working days' notification to meeting participants shall be required.
- B. Schedule
 - 1. Engineer will establish the meeting place, time and date, distribute agenda, notify participants, and administer the meeting. Contractor shall notify major Subcontractors.
- C. Attendance
 - 1. Owner
 - 2. Engineer
 - 3. Contractor
 - 4. Major Subcontractors
 - 5. Utility Companies
 - 6. Safety Representatives
 - 7. Governmental Agencies
- D. Agenda
 - 1. Distribution by the Contractor and discussion, review and acceptance of:
 - a. List of names and telephone numbers for superintendent, foreman and other key personnel.
 - b. List of major Subcontractors and Suppliers.
 - c. Projected construction preliminary progress schedules.
 - d. Preliminary schedule of Shop Drawings and Sample submittals.
 - e. Estimated monthly payment schedule and schedule of values
 - 2. Critical Work sequencing.
 - a. Review endangered species schedule requirements related to construction
 - 3. Major equipment deliveries and priorities.
 - 4. Project coordination.
 - 5. Responsibilities of Owner, Engineer, Contractor and other agencies.
 - 6. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payment.
 - 7. Adequacy of distribution of Contract Documents.
 - 8. Procedures for maintaining Record Documents.

9. Use of premises.
10. Construction facilities, controls and construction aids.
11. Temporary utilities.
12. Safety and first aid procedures.
13. Security procedures.
14. Housekeeping procedures.
15. Testing

E. Minutes

1. Engineer will prepare and distribute copies to participants within seven (7) days of meeting. Participants shall report corrections and comments within ten (10) days of receipt of minutes.

1.02 PROGRESS MEETINGS

A. Periodic Progress Meetings will be held as required by the progress of the Work.

B. Schedule

1. Engineer will establish the meeting place, time and date, distribute agenda, notify participants and administer the meeting. Contractor shall notify major Subcontractors.

C. Attendance

1. Engineer
2. Contractor
3. Subcontractor as appropriate to the agenda.
4. Suppliers as appropriate to the agenda.
5. Others

D. Agenda

1. Review minutes of previous meeting.
2. Review of work progress since previous meeting.
3. Review field observations, problems, conflicts.
4. Review problems which impede Construction Schedules.
5. Review of off-site fabrication, delivery schedules.
6. Review corrective measures and procedures to regain projected schedule.
7. Review revisions to Construction Schedules.
8. Review plan progress, schedule, during succeeding Work period.
9. Review coordination of schedules.
10. Review submittal schedules; expedite as required.
11. Review maintenance of quality standards.
12. Review proposed changes for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other Contracts of the Project.
13. Other business.

E. Minutes

1. Engineer will prepare and distribute copies to participants and the Owner within seven (7) days of meeting for review at the next meeting.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 00 SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Contractor shall submit Shop Drawings, product data, and Samples, as required by the individual Specification sections, to the Engineer for review in accordance with the provisions of Section 00 72 00 - General Conditions.

1.02 PROGRESS SCHEDULES

- A. Contractor shall submit one (1) electronic copy in PDF format of Progress Schedules indicating the starting and completion dates of the various stages of the Work and estimated payments to the Engineer.
 - 1. Proposed Progress Schedules shall be submitted to the Engineer prior to the pre-construction meeting.
 - 2. Contractor shall distribute hard copies of the Progress Schedules during the pre-construction meeting for discussion.
 - 3. Progress Schedules shall be updated by the Contractor and submitted electronically (in PDF format) to the Engineer, as a part of applications for progress payments, through completion of the Work. Failure to update Progress Schedule may be the basis for rejection of Applications for Progress Payments.

1.03 SHOP DRAWING SCHEDULE

- A. Contractor shall submit one (1) electronic copy in PDF format of the Shop Drawing Schedule indicating the individual items and submission dates to the Engineer.
 - 1. A preliminary Shop Drawing Schedule in accordance with the requirements in Section 00 72 00 shall be submitted by the Contractor prior to the pre-construction meeting.
 - 2. Contractor shall distribute hard copies of the Shop Drawing Schedule during the pre-construction meeting for discussion.
 - 3. A final electronic copy of the Shop Drawing Schedule (in PDF format) shall be submitted by the Contractor at least ten (10) days prior to submitting the first Application for a Payment.

1.04 SCHEDULE OF VALUES

- A. Contractor, if applicable, shall submit one (1) electronic copy in PDF format Schedule of Values of the Work to the Engineer.
 - 1. A preliminary Schedule of Values shall be submitted by the Contractor prior to the pre-construction meeting.
 - 2. Contractor shall distribute hard copies of the Schedule of Values during the pre-construction meeting for discussion.
 - 3. A final Schedule of Values (in PDF format), prepared in accordance with the Section 00 72 00 and presented in sufficient detail to serve as the basis for payments during construction, shall be submitted to the Engineer for review at least ten (10) days prior to submitting the first Application for Payment.

1.05 APPLICATIONS FOR PAYMENT

- A. Contractor shall submit one (1) electronic copy in PDF format Applications for Payment to the Engineer in accordance with the provisions of Article 14 of Section 00 72 00.
- B. Applications for Payment shall be made on forms provided by or approved by the Engineer.

1. Samples of the Contractor's Application for Payment, Payment Schedule and Engineer's Certificate for Payment forms are included in the Contract Documents and can be obtained in digital format from the Engineer.
- C. Copies of these forms, with Project specific information completed by the Engineer, will be given to the Contractor at the preconstruction meeting or, if applicable, after approval of the final Schedule of Values.
- D. Contractor shall submit a completed Payment Schedule with an executed Contractor's Application for Payment and Contractor's Declaration to the Engineer not more often than once per month.
- E. Engineer will certify payments with the use of Engineer's Certificate for Payment.

1.06 SHOP DRAWINGS

- A. Shop Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to plan sheet number, detail number if applicable, and Specification Section number, and article number.

1.07 PRODUCT DATA

- A. Product Data shall be presented in a clear and thorough manner identified the same as the Shop Drawings. Included with the information shall be performance characteristics and capacities depicting dimensions and clearances required.
- B. Manufacturer's standard schematic drawings and diagrams shall be modified to delete information which is not applicable to the Work. Manufacturer's standard information shall be supplemented to provide information specifically applicable to the Work.

1.08 SAMPLES

- A. Samples shall be of sufficient size and quantity to clearly illustrate functional characteristics of the product with integrally related parts and attachment devices depicting full range of color, texture and pattern.

1.09 SUBMISSION REQUIREMENTS

- A. Contractor shall make Submittals in accordance with the approved schedule, and in such sequence as to cause no delay in the Work or in the work of any other Contractor. No damages will be awarded, or extension of time granted, due to the Shop Drawing and product data review process.
- B. Contractor shall submit an entire package of Shop Drawings and Product Data information for major items of Work so that the Engineer can review the package as a unit.
- C. Contractor shall submit one (1) electronic copy in PDF format of Shop Drawings and Product Data information containing the following information at a minimum:
 1. Field dimensions clearly identified as such.
 2. Relation to adjacent or critical features of the Work or materials.
 3. Applicable standards, such as ASTM or Federal Specification Numbers.
 4. Identification of deviations from Contract Documents.
 5. Identification of revisions on resubmittals.
 6. Project Title, Date of Submission, Date of Previous Submission, and Specification Section number.
- D. Contractor shall initial or sign Shop Drawings and Product Data submittals, certifying the Contractor's review and approval of Submittal per Section 00 72 00; verification of products, field measurements, field construction criteria, and coordination of the information within the submittal with requirements of the Work and of Contract Documents.

- E. Engineer shall initial or sign Shop Drawings and Product Data submittal and shall indicate the status of the Submittal, or requirements for resubmittal. Engineer shall return to the Contractor one (1) electronic copy of the Shop Drawing and/or Product Data submittal (in PDF format) for distribution or for resubmission.

1.10 ENGINEER'S REVIEW

- A. Upon receipt of any Submittal defined above, the Engineer will:
 - 1. Check each for completeness, clarity, correctness, cohesiveness, legibility, and reproducibility.
 - 2. Review each only for general conformity with the Contract Documents as specified in Section 00 72 00.
- B. After review of any Submittal, the Engineer will appropriately affix a stamp, electronic notation box or other means, signifying the Submittal as having received full consideration and review.
- C. The "status" of any such Submittal or portion thereof, as appropriate, will be evidenced by any one or more of the following notations clearly signified by a "X" or other similar mark placed in the box adjacent to the notation:
 - 1. Notations for Engineer's Review:
 - a. No Exceptions Taken
 - b. Note Markings
 - c. Comments Attached
 - d. Rejected
 - 2. Notations for Response Required by Contractor:
 - a. None
 - b. Confirm
 - c. Resubmit
- D. Notation Meanings:
 - 1. Elements marked "No Exceptions Taken" indicate that the Contractor may commence with construction, fabrication or purchase of such items.
 - 2. Elements marked "Note Markings" indicate that the Contractor may commence with construction, fabrication or purchase of such items.
 - a. Proceeds in strict accordance with the Engineer's notes and/or required corrections/deletions/additions indicated thereon;
 - b. Pending appropriate response by the Contractor as further noted.
 - 3. Elements marked "Comments Attached" indicate that further comments or explanations have been affixed to the Submittal, which may require action(s) by the Contractor as further noted.
 - 4. Elements marked "Rejected" indicate that the Contractor must make the required corrections as shown or noted and resubmit such items to the Engineer for further review.
 - 5. Elements marked "None" indicate that the Submittal requires no further action by the Contractor.
 - 6. Elements marked "Confirm" requires the Contractor to provide affirmation to the Engineer regarding comments, notes, markings, etc. made by the Engineer, and to affirm that the Contractor will comply with the comments, notes, markings, etc.
 - 7. Elements marked "Resubmit" indicate that the Contractor may not commence with construction, fabrication or purchase of such items, and that the Contractor must resubmit

items for review that comply with the Contract Documents in the event that those originally submitted do not, or with any comments, notes, markings, etc. made by the Engineer.

1.11 RESUBMISSION REQUIREMENTS

- A. Contractor shall make all corrections or changes in the Submittals required by ENGINEER and resubmit. Contractor shall indicate any changes which have been made other than those requested by the Engineer.

1.12 MANUFACTURER'S OPERATION AND MAINTENANCE DATA

- A. Contractor shall submit one (1) electronic copy in PDF format and one (1) bound copy of all operation and maintenance data required per the various Specification sections.
 - 1. Prior to 50% completion of the Project, Contractor shall have submitted one (1) acceptable copy to the Engineer for review.
- B. Final copies of the operation and maintenance data shall be bound in a suitable number of 3-inch or 4-inch, 3-ring hard cover binders. Permanently imprinted on the cover shall be the words "Manufacturer's Operation and Maintenance Data", Project title, location of the Project, and the date. A table of contents shall be provided in the front of each binder to list the various sections in the manual.
- C. The information to be provided in each section of the manual, for each piece of equipment and project component shall include, but not be limited to, detailed equipment drawings; sections cut through all of the major equipment and subassemblies; installation and operational procedures; complete wiring and piping schematics; lubrication materials and procedures; maintenance procedures; and parts lists complete enough to permit identification of parts by nomenclature, manufacturer's part number and use.
- D. At the front of each section a maintenance schedule shall be provided for each piece of equipment in the section.
 - 1. The schedule shall display the daily, weekly, monthly, semi-annual, annual or fraction thereof, lubrication and preventative maintenance required in order to meet warranty conditions and the manufacturer's recommendations for optimum performance and life of the unit.
 - 2. A common schedule format is to be developed and used for all of the sections. Photocopies or reproductions of the manufacturer's literature will not be accepted.

1.13 PHOTOGRAPHS

- A. When required in Section 00 42 43 or Section 01 11 00, the Contractor shall furnish the Engineer with a total of 6 to 10 digital color photographs each month during construction of the Project, unless some other number and times is specified in the Summary of Work.
- B. Photos shall be in digital format (i.e., JPEF, TIFF, GIF, PNG or PDF) and shall have a minimum resolution of 300 dpi.
- C. The following information shall be placed on the photo itself or embedded in the digital file:
 - 1. Project Title
 - 2. Contract Number
 - 3. Description of photo's content
 - 4. Date and Time of photo
- D. Contractor shall submit photographs monthly along with the Application for Payment as described in Article 14 of Section 00 72 00.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 01 45 00
QUALITY CONTROL**

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Sampling of materials will be made by the Engineer in accordance with the methods designated by the Specifications. Contractor shall furnish such facilities as the Engineer may require for collecting, storing, and forwarding samples to the Laboratory. Contractor in all cases shall furnish the required samples to the Owner without charge.

1.02 TESTS OF MATERIALS

- A. All materials in the Work shall meet the requirements of the Contract Documents.
- B. Tests of materials will be made as specified herein. Engineer shall at all times have access to all materials intended for use in the Work as well as to the plants where such materials are produced. Plant inspection may be made if the quantities are sufficient to warrant such inspection and if it is to the best interest of the Owner. In any case materials may be either inspected or tested when received on the Project.
- C. Materials shall not be used until approval has been received from the Engineer. Approval of materials at the producing plant does not constitute a waiver of the Engineer's right for re-examination at the Project site.
- D. The standards for testing materials unless otherwise specified, shall be as established by the American Society for Testing and Materials (ASTM). All tests of materials will be made in accordance with the methods described or designated in the Specifications.
- E. The sampling and testing of all materials not specifically mentioned shall be done by generally accepted methods, unless otherwise specified by the Engineer.

1.03 CERTIFICATION OF MATERIALS

- A. At the request of the Engineer, the Contractor shall provide the Engineer with certification that the various materials to be used conform to the standards referred to in the Contract Documents.

1.04 SOURCE QUALITY CONTROL

- A. Testing identified in these specifications as Quality Control, which is required to establish quality of materials, equipment or fabricated items, shall be paid for by the Contractor unless otherwise noted.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

4

SECTION 01 57 13 TEMPORARY EROSION AND SEDIMENT CONTROL

GENERAL

1.01 SCOPE OF WORK

- A. This Section includes furnishing, installing, maintaining, and removing at project completion, Soil Erosion and Sedimentation Control devices. Devices include silt fence, straw bales, turbidity barriers, temporary gravel construction entrance/exits, inlet filters, ditch sediment traps, etc.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 2200: Unit Prices
- B. Section 01 8900: Site Construction Performance Requirements
- C. Section 31 2200: Grading
- D. Section 31 2313: Subgrade Preparation
- E. Section 31 2319: Dewatering
- F. Section 31 2333: Trenching and Backfilling
- G. Section 31 3500: Slope Protection
- H. Section 32 9219: Seeding
- I. Section 32 9223: Sodding

1.03 REFERENCE STANDARDS

- A. ASTM D4355/D4355M: Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc-Type Apparatus
- B. ASTM D4491/D4491M: Standard Test Methods for Water Permeability of Geotextiles by Permittivity
- C. ASTM D4533/D4533M: Standard Test Method for Trapezoid Tearing Strength of Geotextiles
- D. ASTM D4632/D4632M: Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
- E. ASTM D4751: Standard Test Methods for Determining Apparent Opening Size of a Geotextile
- F. ASTM D6241: Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile- Related Products Using a 50-mm Probe

1.04 REQUIREMENTS OF REGULATORY AGENCIES

- A. CONTRACTOR, at his expense, shall secure all permits, and post all bonds or deposits required to comply with the "Soil Erosion and Sedimentation Control," requirements, being Part 91 of PA 451 of 1994 as amended and the National Pollution Discharge Elimination System (NPDES) Rules for storm water discharges from construction activity.
- B. Comply with requirements of the agency having jurisdiction. OWNER may withhold payment to CONTRACTOR equivalent to any fines resulting from non-compliance with applicable regulations.

1.05 PERFORMANCE REQUIREMENTS

- A. Employ Best Management Practices as defined by standard EPA 832-R-92-005.
- B. Put preventative measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.

- C. Control increased storm water runoff due to disturbance of surface cover due to construction activities for this Project.
- D. Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this Project.
- E. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall event that might occur in 10 years.
- F. Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this Project. Prevent windblown soil from leaving the project site. Comply with fugitive dust ordinances of agencies having jurisdiction. Prevent tracking or flowing of mud and sediment onto public or private roads, sidewalks or pavements outside of the site.
- G. Prevent sedimentation of waterways on or off the project site, including rivers, streams, lakes, ponds, open drainage ditches, storm sewers, and sanitary sewers. If sedimentation occurs, install or correct preventative measures immediately at no cost to OWNER. Comply with requirements of agencies having jurisdiction.
- H. Maintain temporary preventative measures until permanent measures have been established. Remove temporary measures when permanent measures have been established.
- I. If erosion or sedimentation occurs due to non-compliance with these requirements, remove deposited sediment or restore eroded areas at no cost to OWNER.

1.06 SUBMITTALS

- A. Submit schedule of Soil Erosion and Sedimentation Control activities to agency having jurisdiction. Include events (with days and/or dates of the various activities) for review and approval prior to obtaining a permit.
- B. CONTRACTOR must provide evidence of Storm Water Operator license.

PRODUCTS

2.01 GENERAL

- A. All products used for erosion control and restoration must be wildlife-friendly.

2.02 SILT FENCE

- A. Polypropylene geotextile fabric, resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; meeting the following requirements:
 - 1. Average Opening Size: 30 US std Sieve , maximum; ASTM D4751.
 - 2. Permittivity: 0.05 sec-1, minimum; ASTM D4491/D4491M.
 - 3. Ultraviolet Resistance: Retaining at least 70% of tensile strength; ASTM D4355/D4355M after 500 hours exposure.
 - 4. Tensile Strength: 100 lb - f minimum, in cross-machine direction; 124 lb - f minimum in machine direction; ASTM D4632/D4632M.
 - 5. Elongation: 15 to 30%; ASTM D4632/D4632M.
 - 6. Tear Strength: 55 lb - f minimum; ASTM D4533/D4533M.
- B. Posts shall be 2 inch cross section hardwood stakes, minimum 3 feet long.

2.03 EROSION CONTROL BLANKETS

- A. Machine produced blanket with a consistent thickness of evenly distributed straw or coconut fiber as specified. Unless otherwise specified on the Plans, the erosion control blanket shall have the following minimum properties:

1. Double net 100% straw blanket.
2. Top and bottom photodegradable polypropylene netting, 1.64 lbs per 1000 sft approximate weight.
3. 100% agricultural straw 0.5 lbs per syd.
4. Stitch spacing: 1.5 inch.
5. Pegs shall be 6 inch long, hardwood pegs.

2.04 BONDED FIBER MATRIX

- A. Bonded fiber matrix (BFM) shall consist of long strand, residual, softwood fibers joined together by a high-strength, nontoxic adhesive. BFM shall be 100% biodegradable, and be non-toxic to fish, wildlife, and humans. Upon drying the matrix shall form a high strength, porous and erosion resistant mat that shall not inhibit the germination and growth of plants. BFM shall retain its form despite re-wetting.
- B. Bonded fiber matrix shall consist of:
 1. Seed and Fertilizer per Section 32 9219, Seeding.
 2. Wood Fiber Mulch: Thermo-mechanically defibrated long, softwood fibers manufactured from select northern softwood wood chips.
 3. Polyacrylamide Binder: Site specific, fully biodegradable, polyacrylamides (PAM's) binders, with cross-linking long organic jute fibers
- C. Materials shall be mixed at the rate of 80 lbs per acre of PAM binder and 2500 lbs per acre of wood fiber mulch.

2.05 INLET FILTER FABRIC

- A. Filter fabric shall be constructed of 100% continuous polyester needle-punched non-woven engineering fabric. Filter fabric shall be fabricated to provide a direct fit with the drainage structure cover. Filter fabric shall have the following minimum physical properties.
- B. Tensile Strength: 80 lb - f minimum; ASTM D4632/D4632M
- C. Elongation: 50 percent minimum; ASTM D4632/D4632M
- D. CBR Puncture Strength: 300 lb f minimum; ASTM D6241
- E. Trapezoidal Tear: 70 lb - f minimum; ASTM D4533/D4533M
- F. Flow Rate: 80 gal/min/sft minimum; ASTM D4491/D4491M
- G. Permittivity: 1.4 sec -1 minimum; ASTM D4491/D4491M
- H. Apparent Opening Size: 100 US std Sieve maximum; ASTM D4751
- I. UV-Stability: 70% retained strength; ASTM D4355/D4355M after 500 hours.

2.06 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers include the following:
 1. Turbidity Barrier: Tough Guy Type II by Aer-flo Canvas Products, Inc.
 2. Wood Fiber Mulch: EcoFibre by Canfor Corporation.
 3. Polyacrylamide Binder: HydroTurboNet by Straw Net, Inc.

EXECUTION

3.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to the greatest extent possible.

- B. Except in areas to be cleared, do not remove, cut, deface, injure or destroy trees or shrubs without ENGINEER's approval. Protect existing trees or shrubs that are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations, with suitable fences or other means as approved by ENGINEER.

3.02 PREPARATION

- A. Review the drawings and Storm Water Pollution Prevention Plan (SWPPP).
- B. Revise SWPPP as necessary to address potential pollution from site identified after issuance of the SWPPP at no additional cost to OWNER.
- C. Conduct storm water pre-construction meeting with Site Contractor, all ground-disturbing Subcontractors, site Engineer of record or someone from their office familiar with the site and SWPPP, and state or local agency personnel in accordance with requirements of the special conditions.
- D. Schedule work so that the soil surfaces are left exposed for the minimum amount of time. Place permanent soil and sedimentation control measures as soon as practical.

3.03 GENERAL

- A. Do not discharge excavation ground water to the sanitary sewer, storm sewer, or to rivers, streams, etc. without authorization from the agency having jurisdiction. Construction site runoff will be prevented from entering any storm drain, river, stream, etc. directly by the use of silt fences or other suitable methods. CONTRACTOR shall provide erosion protection of surrounding soils.
- B. Sedimentation control devices shall be installed prior to CONTRACTOR beginning Work. Soil erosion and sedimentation control devices shall be maintained in an effective functioning condition at all times during the course of the Work.
- C. Immediately bring earthwork to final grade and protect sideslopes and backslopes from erosion. Plan and conduct earthwork to minimize duration of exposure of unprotected soils.

3.04 INSTALLATION - GENERAL

- A. Install silt fences, ditch sediment traps, check dams, inlet filters, temporary gravel construction entrance/exits, turbidity barriers, erosion control blankets and other soil erosion control devices in accordance with the drawings and Storm Water Pollution Prevention Plan, or as may be dictated by site conditions in order to maintain the intent of the specifications and permits.
- B. Deficiencies or changes on the drawings or SWPP shall be corrected or implemented as site conditions change. Changes during construction shall be noted in the SWPP and posted on the drawings.
- C. OWNER has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations and to direct CONTRACTOR to provide immediate permanent or temporary pollution control measures.
- D. Remove temporary control devices after permanent measure are established. Remove and replace temporary control devices if they become ineffective at no additional cost to OWNER.
- E. CONTRACTOR shall incorporate permanent erosion control features, paving, permanent slope stabilization, and vegetation into project at earliest practical time to minimize need for temporary controls.
- F. CONTRACTOR shall permanently seed and mulch cut slopes as excavation proceeds to extent considered desirable and practical.

3.05 DUST CONTROL

- A. Keep dust down at all times, including during non-working periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming is not permitted.

3.06 INSTALLATION OF EROSION CONTROL BLANKETS

- A. Erosion control blankets shall be pegged at the pattern and rate as recommended by the manufacturer, however, at a minimum, blankets shall be pegged at the rate of 1.75 pegs per square yard of blanket, unless otherwise indicated on the plans.

3.07 APPLICATION OF BONDED FIBER MATRIX

- A. The slope shall be prepared and graded prior to application of bonded fiber matrix (BFM). Mixture of wood fiber mulch and polyacrylamide binder shall be blended, with the appropriate amount of seed and fertilizer per Section 32 9219, Seeding, according to manufacturer's recommendations.
- B. BFM shall be hydraulically applied to the soil as a viscous mixture, creating a continuous, three-dimensional blanket that adheres to the soil surface. BFM shall be mixed and applied at the rate as specified in this Section unless otherwise indicated on the Plans.
- C. The resulting coverage must be at least 1/8 inch thick over the entire surface area. BFM shall be applied in two applications from alternate directions to eliminate shadowing and shall be applied when no rain is expected for 12 hours.

3.08 MAINTENANCE

- A. Maintain temporary erosion and sedimentation control systems as dictated by site conditions, indicated in the construction documents, or as directed by governing authorities or OWNER to control sediment until final stabilization.
- B. CONTRACTOR shall respond to maintenance or additional work ordered by OWNER or governing authorities immediately, but in no case, within not more than 48 hours if required at no additional cost to OWNER.

3.09 INSPECTION

- A. General:
 - 1. CONTRACTOR is responsible to obtain and/or serve as the Certified Operator.
 - a. Weekly inspections are to be conducted by CONTRACTOR as a minimum, and after every rainfall event. A copy of the inspection report shall be submitted to the agency having jurisdiction, as well as OWNER and ENGINEER.
 - 2. Inspections shall be performed by a person familiar with the site, the nature of the major construction activities, and qualified to evaluate both overall system performance and individual component performance.
 - 3. Inspector must either be someone empowered to implement BMPs in order to increase effectiveness to an acceptable level or someone with the authority to cause such things to happen.
 - 4. Inspector must be certified as a "Storm Water Professional" through the MDEQ storm water training program. Additionally, the inspector shall be properly authorized in accordance with the applicable General Permit to conduct the certified site storm water inspections.
- B. Inspection Frequency Reduction:
 - 1. Inspection frequency may be reduced under the following conditions:
 - a. No active onsite construction activities.
 - b. Temporary cover has been provided across the entire site and no BMPs remain.
 - 1) Situation: waiting for grass to grow, but grass is dormant.
 - c. Ground is frozen and/or snow covered.
- C. Weekly Storm Water Meeting:

1. A weekly storm water meeting will be held by CONTRACTOR with those involved in ground-disturbing activities to review the requirements of the permits, the SWPPP, and address any problems that have arisen in implementing the SWPPP or maintaining the BMPs.
 2. CONTRACTOR shall maintain a log of weekly meetings and document the issues addressed in the meetings on site.
- D. Agency Storm Water Inspections:
1. A log of inspections by federal, state, or local storm water or other environmental agencies shall be kept in CONTRACTOR's SWPPP.
 2. The log form should include the date and time of visit and whether a report was issued or will be issued as a result of the inspection.
 3. Any reports issued will be sent to ENGINEER within 24 hours.

3.10 PROJECT COMPLETION

- A. Remove temporary soil erosion and sedimentation control devices as soon as permanent measures have been established.

END OF SECTION

SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SITE ACCESS AND PARKING

- A. Contractor shall locate roads, drives, walks and parking facilities to provide uninterrupted access to construction offices, mobilization, Work, storage areas, and other areas required for execution of the Contract. Access drives and parking areas shall be hard surfaced unless otherwise approved by the Engineer.
- B. Contractor shall maintain driveways a minimum of 15 feet (5 m) wide between and around combustible materials in storage and mobilization areas.
- C. Contractor shall maintain traffic areas as free as possible of excavated materials, construction equipment, products, snow, ice, and debris.
- D. Contractor shall not utilize existing parking facilities for construction personnel or for Contractor's vehicles or equipment, unless written permission from owner of parking facility is obtained.

1.02 TRUCKING ROUTE AND PUBLIC ROAD MAINTENANCE

- A. Prior to the start of construction, the Contractor shall submit for review a schedule and list indicating the streets and roads within the municipality that his equipment will use off the Project site.
- B. Contractor shall comply with all safety requirements, weight restrictions and speed limits.
- C. Gravel and dirt roads or streets used shall be maintained by grading, placing dust palliatives and maintenance gravel in sufficient quantities to eliminate dust and maintain traffic.
- D. Paved streets shall be maintained in a reasonable state of cleanliness and the Contractor shall remove accumulations of debris, dirt or mud caused by his operations. Removal shall be done in such a manner as to prevent the release of dust. This shall be done at least every day at the close of each day's operation or additionally when requested by the Engineer.
- E. Any roads or streets damaged by the Contractor's operations, shall be repaired or removed and replaced to satisfactions of the agency having jurisdiction at no additional cost to the Project.
- F. In order to ensure adequate street maintenance and restoration as outlined above, the Contractor may be required to deposit with the Agency having jurisdiction a cash Road Protection Bond. This Bond, if required, will be held in escrow until final release is given by the Agency having jurisdiction.
 - 1. In the event the Contractor fails or neglects to maintain or restore the streets to the satisfaction of the Agency having jurisdiction, the Agency having jurisdiction shall have the required maintenance or restoration work done and the cost incurred shall be deducted from the Road Protection Bond.
 - 2. At the completion of the Project, the Agency having jurisdiction shall return the Road Protection Bond less any monies expended by the Agency having jurisdiction and shall render to the Contractor an accounting of all monies so expended.
- G. Contractor shall not store any equipment, supplies, construction material or excess excavated material on any roads or streets unless otherwise approved by the Engineer.

1.03 EMERGENCY ACCESS

- A. Contractor shall at all times provide emergency access to property in the vicinity of the construction for police vehicles, fire equipment, ambulances or other emergency vehicles to protect life, health and property. Any areas damaged by emergency vehicles shall be restored by the Contractor at no additional cost to the Owner.

1.04 PRIVATE OR PUBLIC ROADS, SIDEWALKS, AND PARKING AREAS

- A. Where public roads, driveways, parking areas and sidewalks are encountered throughout the community, the Contractor shall maintain those portions affected by the construction operations in a passable condition until such time as final restoration of these improvements can be made as specified.
 - 1. If, in the opinion of the Engineer, the public safety is in danger or the necessity exists for maintaining traffic, the Engineer may direct that backfilling be completed immediately.
 - 2. In the event that the necessary backfill material and equipment are not available when direction is given for immediate backfill, the trench shall be backfilled with native material to provide for the necessary maintenance of traffic and safety; however, the native material shall be removed within 48 hours and the trench properly backfilled as specified.
- B. Where private roads are encountered throughout the community, the Contractor shall maintain those portions affected by its construction operations in a passable condition. These roads shall be maintained by the use of 21A road maintenance gravel, stone or slag.
 - 1. In the event the original subbase has been destroyed, the Contractor shall furnish and install 1-inch to 2-inch aggregate to stabilize the existing subbase.
- C. Upon completion of the construction activities, the Contractor shall shape and regrade these roads leaving them in a condition as good as or better than original, and adequate for normal travel.

1.05 ROAD CLOSING

- A. No street, road or section thereof shall be closed to through traffic unless otherwise provided for on the Plans, Specifications, or authorized by the agency with jurisdiction over the roads. Prior to closing a street, road, or section thereof, the Contractor shall provide the Engineer with a copy of a detour plan approved by the agency having jurisdiction over the roads.
- B. In the event roads or streets are to be closed, the Contractor shall notify the local fire department, police department, local road authority, ambulance and emergency services, Department of Public Works, public transit authority and public school system daily as to what streets will be partly blocked or closed, the length of time the streets will be blocked or closed and when the streets will be reopened to traffic. Contractor shall designate one responsible employee to carry out the requirements of this condition.
- C. During the time that the road is closed, the Contractor shall make provision for trash, leaf, and rubbish pickup.

1.06 MAINTAINING TRAFFIC

- A. Contractor shall provide access for local traffic to property along the Project by means of temporary roads, drives, culverts or other means approved by the Engineer. Contractor shall grade, add surfacing materials, and dust palliatives to such temporary roads and drives as necessary for the proper maintenance of traffic.
- B. Where the shoulder is used to maintain traffic, the shoulder shall be graded, surfaced, treated for dust, constructed, or reconstructed, as specified herein or as shown on the Plans.
- C. If the construction work is suspended due to weather conditions, winter shut down or for any other reason, sufficient labor, materials and equipment shall be ready for immediate use at all times for the proper maintenance of traffic. Surfacing materials and dust palliatives shall be applied at such times and locations and in such amounts as necessary to safely maintain traffic and as determined by the Engineer.
- D. Where shoulders are low, high, soft or rough, adequate provisions shall be taken to inform and protect the traveling public by means such as construction warning signs, barricades, lighted devices, etc. Such shoulder hazards shall be eliminated as soon as practicable.
- E. Contractor shall furnish, erect and maintain all signs, barricades, lights, and traffic regulators, in accordance with the requirements of the current "Michigan Manual of Uniform Traffic Control

Devices".

1. Furnish all flagmen and watchmen as are necessary to maintain and safeguard traffic along the entire Project. Failure to comply with these requirements may be cause for the Owner to issue a stop Work order, which shall remain in effect until all necessary devices are in place and operational. The issuance of a stop Work order shall not be reason for granting additional compensation or an extension to the Contract Time.
2. Furnishing, installing, and maintaining traffic control devices shall be incidental to the Project unless otherwise provided for in the Proposal.

1.07 EXISTING SIGNS

- A. No stop sign, traffic control or warning device or sign shall be taken down until the agency having jurisdiction over the roads has been notified and arrangements for the immediate reinstallation has been made. Contractor shall provide temporary signs, traffic control devices, warning devices, or watchmen continuously from the time the item is removed until it is reinstalled. Signs removed shall be replaced with signs meeting requirements of the agency having jurisdiction over the roads.

1.08 TEMPORARY ELECTRICITY AND LIGHTING

- A. Contractor shall be responsible for and pay all costs for the installation and removal of circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction-type power cords and shall pay all costs of electrical power used.
- B. Electrical wiring and distribution shall conform to the National Electrical Code as adopted by the State of Michigan.

1.09 TELEPHONE

- A. Contractor is required by MIOSHA regulations to provide telephone service for contacting emergency services. Such emergency telephone service shall also be available for the use of the Owner and Engineer whether or not a field office is required for the Project. Emergency phone numbers are required to be posted per MIOSHA regulations
- B. Contractor shall pay all costs for installation, maintenance and removal, and service charges for local calls to provide service for his construction site office as well as for the Engineer's field office. Toll charges for calls relating to Project business shall be at the Contractor's expense.

1.10 USE OF WATER

- A. Contractor shall acquire any and all permits, post any bonds and pay all fees required by the local agency having jurisdiction prior to using any hydrant or any other source of water. Contractor shall reimburse the local community for all water consumed during course of the Project at the current rate as set by the agency having jurisdiction.

1.11 SANITARY PROVISIONS

- A. Contractor shall be responsible for installation, maintenance and removal of temporary sanitary facilities per MIOSHA regulations for use of construction personnel including the OWNER and Engineer. Rules and regulations of the State and local health officials shall be observed, with precautions taken to avoid creating unsanitary conditions.

1.12 POTABLE WATER

- A. Contractor shall furnish a supply of potable water per MIOSHA requirements, available for use of construction personnel including the Owner and Engineer.

1.13 MEDICAL SERVICES AND FIRST AID

- A. Contractor shall furnish first aid supplies and a person trained in first aid with a valid first aid certificate, per MIOSHA requirements, available for use of construction personnel including the Owner and Engineer. Contractor shall also furnish a communication system for contacting emergency services. The telephone numbers of the physician, hospital, or emergency services

shall be conspicuously posted at the job site.

1.14 POSTAL SERVICE

- A. Several or all residents of this Project area may receive their mail at roadside mailboxes. Since the postal service will not deliver mail to a resident without a mailbox or a mailbox that is not in its proper position, the Contractor shall relocate, replace and repair all mailboxes and posts in a condition and height acceptable to the post office within 24 hours of the removal.
- B. If required, the Contractor shall furnish new posts for the mailboxes if the existing posts are broken or rotted to the extent that they cannot be reused.
- C. Any mailbox damaged by the Contractor while carrying out his operations or by anyone else while the box is down due to the Contractor's operation, shall be replaced by the Contractor with a new mailbox meeting the postal officials' specifications and the resident's name and address neatly lettered with paint or other acceptable means to the satisfaction of the resident and postal authorities.
- D. The cost for relocating mailboxes shall be incidental to the Project unless otherwise specified in Section 00 42 43 - Proposal.

1.15 NEWSPAPER DELIVERY

- A. Several or all residents of this Project area may receive their newspapers at roadside tubes. Since the resident arranges for newspaper delivery, the Contractor shall notify the resident 24 hours prior to removal of any newspaper tube.
- B. Any tube damaged by the Contractor while carrying out his operations or by anyone else while the tube is down due to the Contractor's operation, shall be replaced as agreed between the Contractor and the newspaper who owns the damaged tube. The cost shall be incidental to the Project.

1.16 BUS STOPS AND SHELTERS

- A. Prior to the start of any construction, the Contractor shall notify the transit authority that has any bus stops within the area of the Work. Removal, relocation and/or replacement of signs and/or benches shall be the responsibility of the Contractor in accordance with any requirements of the transit authority. The cost shall be incidental to the Project.

1.17 ENGINEER'S FIELD OFFICE

- A. When called for in the Summary of Work, Section 01 11 00 - Summary of Work, the Contractor shall furnish and maintain, for the exclusive use of the Engineer, an approved weatherproof building as a field office. The building shall be located as directed by the Engineer, in full view of the Work and with at least one (1) window facing construction operations.
- B. Engineer's field office shall meet the following minimum requirements:
 - 1. securely fixed to foundation
 - 2. structurally sound and watertight
 - 3. stairs and landings for doors as necessary
 - 4. three hundred (300) square feet (28 m2)
 - 5. three operable and locking windows with screens and storms.
 - 6. two locking, standard sized, entrance/exit doors
 - 7. two telephone lines
 - 8. two telephone jacks for each line
 - 9. one telephone
 - 10. one facsimile machine
 - 11. 120 volt electrical service per NEC, complete

12. one 36" x 42" (1m x 1.1m) drafting table
 13. one drafting stool
 14. one 30" x 60" (.75m x 1.5m) desk
 15. one four drawer locking file cabinet
 16. two desk chairs
 17. one plan rack (minimum capacity eight plan sets)
 18. one first aid kit
 19. one 10A:80-B:C fire extinguisher
 20. automatically controlled heating, ventilating, air conditioning system to maintain temperature between 68 and 76 degrees Fahrenheit, year round.
- C. Contractor shall furnish and maintain bottled water and sanitary facilities for the field office. Contractor shall clean the office at least once per week. Contractor shall provide and pay for all utility service throughout the duration of the Project, including telephone service and long distance telephone service.
 - D. A trailer having equal facilities and floor space may be used in place of the above described field office if so desired.
 - E. The field office shall be furnished with a minimum of an aggregate surfaced driveway and parking area, for the exclusive use of the Engineer, for at least three (3) vehicles. Contractor shall maintain parking area including snow removal.
 - F. The cost for furnishing and installing the field office, for furnishing utilities and utility service, and for maintenance of the field office and facilities, unless otherwise specified in the Proposal, will not be paid for separately but shall be included in the price bid for various items of Work under the Contract. The building shall be removed by the Contractor upon completion of the Contract and shall become his property.

1.18 BY-PASS PUMPING

- A. Contractor shall maintain flow in existing sewers at all times by pumping, bypassing, or fluming as necessary. During wet weather events, the flow in the sewer will rise rapidly and may become surcharged. Contractor shall maintain flow in such a manner as the existing flow can be adequately transported including wet weather flow. Contractor shall furnish, install, operate, and maintain temporary pumping facilities to service the upstream area including piping, temporary channels, pumps, sumps, controls, temporary plugs, and bulkheads.
- B. For sanitary sewerage, by-pass piping shall be PVC Schedule 80, ABS truss pipe, equivalent with solvent welded joints, HDPE with butt fused joints, or _____. Flexible hoses of whatever types are not acceptable. Bypassed flow shall be discharged to a sanitary sewer of acceptable size to handle the bypassed and existing flows. Contractor shall plan construction operations such that there will be no backups, leaks, or discharges of pollutants.
- C. Contractor shall also furnish and have available on-site, redundant pumping facilities in case of any failure of the pumping system including pumps, piping, electrical, connections, etc. Redundant pumping facilities also include having a backup power generator in case the primary power source fails. Contractor shall provide an adequate labor force to oversee the by-pass pumping including providing labor to maintain 24 hour per day operation and emergency backup service.
- D. All costs for pumping and by-passing flow shall be included in the unit price bid for other items of Work unless otherwise specified in the Proposal.
- E. Contractor shall submit a by-pass pumping/diversion scheme to the Engineer for approval not less than 15 days prior to any anticipated by-pass pumping/diversion. By-pass plan shall include pumping capacity and expected flow rates.

PART 2 PRODUCTS

2.01 BARRICADES, ARROW BOARDS, TEMPORARY PAVEMENT MARKINGS, AND TEMPORARY SIGNS

- A. Barricades, Arrow Boards, Temporary Pavement Markings, Temporary Signs, and other traffic control devices shall be in accordance with the current edition of the MDOT Standard Specifications for Construction, and the current edition of the "Michigan Manual of Uniform Traffic Control Devices".

PART 3 EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 60 00 PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 TRANSPORTATION AND HANDLING

- A. Contractor shall provide for expeditious transportation and delivery of materials and equipment to the Project site in an undamaged condition and on a schedule to avoid delay of the Work. Materials and equipment shall be delivered in original containers or packaging with identifying labels intact and legible.
- B. Contractor shall provide equipment and personnel at the site to unload and handle materials and equipment in a manner to avoid damage. Materials and equipment shall be handled only at designated lifting points by methods to prevent bending or overstressing.

1.02 STORAGE AND PROTECTION

- A. Contractor shall store materials and equipment immediately on delivery, and protect it until installed in the Work.
- B. Products subject to damage by elements shall be stored in weather-tight enclosures with temperature and humidity ranges as required by manufacturer's instructions.
- C. Loose granular materials shall be stored on solid surfaces to prevent mixing with foreign matter.
- D. The place of storage shall be located so as to minimize interference with traffic and to provide easy access for inspection. No material shall be stored closer than five (5) feet (1.5 m) to the edge of a pavement or traveled way open to the public.
- E. Materials that have been stored shall be subject to retest and shall meet the requirements of their respective specifications at the time they are to be used in the Work.
- F. ContractorThe CONTRACTOR shall provide protection of stored or installed materials and equipment as necessary to prevent damage from traffic and subsequent operations.

1.03 MANUFACTURER'S INSTRUCTIONS

- A. When the Contract Documents require that installation of Work shall comply with manufacturer's instructions, the Contractor shall obtain and distribute copies of such instructions to parties involved in the installation including two (2) copies to the Engineer.
- B. ContractorThe CONTRACTOR shall handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements. Should Project conditions or specified requirements conflict with manufacturer's instructions, consult with ENGINEER for further instructions.

1.04 PRODUCTS LIST

- A. Within four (4) days of request, the Contractor shall submit a complete list of major products proposed to be used, with the name of the manufacturer and the installing subcontractor, if applicable, to the Engineer.

1.05 CONTRACTOR'S PRODUCT OPTIONS

- A. For products specified only by reference standard, the Contractor shall select any product meeting that standard.
- B. For products specified by naming several products or manufacturer's the Contractor shall select any one of the products or manufacturers named, which complies with the specifications.
- C. For products specified by naming one or more products or manufacturers and "or equal," the Contractor must submit a Substitution Request Form for any product or manufacturer not specifically named, in accordance with Section 00 72 00 - General Conditions.
- D. For products specified by naming only one product and manufacturer, there is no option.

1.06 EQUIPMENT STARTUP AND TESTING

- A. Contractor shall perform a comprehensive startup and demonstration of equipment performance and compliance with the design requirements. When there is more than one mode of operation, the equipment shall be operated in every mode to verify proper operation.
- B. When equipment is to operate in conjunction with other equipment as a system, each piece of equipment shall be operated both by itself and automatically as a system to verify its proper operation.
- C. Contractor is to provide to the Engineer, in advance of startup, a schedule and listing of startup and testing procedures for review by the Engineer. Checklists and diagrams may be required to ensure adequate startup and testing. Engineer may recommend changes to the startup procedure as necessary.
- D. All equipment is to be inspected prior to operation for debris or other obstructions. Equipment is to be properly lubricated and calibrated prior to operation. Contractor shall make all adjustments necessary to assure correct operation. When required, equipment installation and operation is to be witnessed and checked by manufacturer.
- E. When required, the Contractor shall train the Owner's operation and maintenance personnel in the proper operation and maintenance of each piece of equipment and the system as a whole.
- F. All equipment startup is to be witnessed by the Owner and the Engineer.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

①

SECTION 01 71 23.26 CONSTRUCTION LAYOUT AND STAKING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Owner's Representative shall furnish labor, materials, tools and equipment necessary to perform construction layout, control, and reference staking for satisfactory completion of the project. This includes, but is not limited to:
 - 1. Placing, replacing (if necessary), and maintaining construction layout points;
 - 2. Preparing construction layout drawings, sketches, and computations; and
 - 3. Recording data in field books.

1.02 SUBMITTALS

- A. Submit the following documentation in accordance with Section 01 33 00 - Submittal Procedures.
 - 1. Project Construction Records:
 - a. These records detail information that Engineer uses to determine the template line for the as-built cross sections, which defines the computation line for unclassified excavation. These records include:
 - 1) Survey records
 - 2) Bound field notebooks
 - 3) Computer printouts that record the Project's construction
 - 2. Survey Documents:
 - a. Furnish the Engineer with a copy of survey documents that relate to construction layout. Provide these documents when Engineer requests, or as they are completed. Engineer may check the documents for accuracy and may require revisions where necessary. The documents become property of Owner and will be included in the permanent Project records.

1.03 QUALIFICATIONS

- A. Personnel:
 - 1. Staking shall be performed under the direct supervision of a Land Surveyor licensed by the State in which the Project is located,
 - 2. Owner's Representative shall furnish personnel, working under the supervision of a Registered Professional Engineer or Registered Land Surveyor, who are fully qualified and capable of establishing or reestablishing line and grade points necessary to complete the work within the generally accepted surveying tolerances, and ensure that they are acceptable for the work being performed.
- B. Equipment:
 - 1. Equipment shall be of a quality and condition to provide the required accuracy. The equipment shall be maintained in good working order and in proper adjustment. Records of repairs, calibration tests, accuracy checks and adjustments shall be maintained and be available for inspection by Engineer. Equipment shall be checked, tested, and adjusted as necessary in conformance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 HUBS

- A. Hubs shall be 1-1/2 inch x 1-1/2 inch x 16 inch oak and witness stakes shall be 1 inch x 1 inch x 36 inch oak or other hardwood.
- B. Hubs with tacks shall be used for control points, centerline or baseline offsets and structure stakeout and shall be accompanied by witness stakes marked with the pertinent information. For supplemental stakeout only, witness stakes alone may be used. For laser grade control and the verification of the laser elevation a hub with witness shall be provided.

PART 3 EXECUTION

3.01 PREPARATION

- A. General Pre-Construction:
 - 1. Before beginning construction ensure that plan dimensions, alignment, and elevations are compatible with existing field conditions. Make adjustments where necessary.
 - 2. Ensure alignment tie-ins by coordinating construction layout with that of other s whose work abuts any portion of the work. Adjustments are subject to Engineer's approval.
- B. Limits of Clearing and Grubbing:
 - 1. The boundary of the area(s) to be cleared and grubbed shall be staked or flagged at a maximum interval of 200 feet, closer if needed, to clearly mark the limits of work. When Contractor staking is the basis for determining the area for final payment, all boundary stakes will be reviewed by the Engineer before start of this work item.
- C. Excavation and Fill:
 - 1. Slope stakes shall be placed at the intersection of the specified slopes and ground line. Slope stakes and the reference stakes for slopes shall be marked with the stationing, required cut or fill, slope ratio, and horizontal distance from the centerline or other control line.
- D. Structures:
 - 1. Centerline and offset reference line stakes for location, alignment, and elevation shall be placed for all structures.

3.02 GENERAL

- A. Verify plan elevations for all bridge bearing seats on the substructure.
- B. Verify bent layout at each major phase of the construction to ensure that the bent is properly positioned in relation to adjacent bents.
- C. Establish the Centerline:
 - 1. Establish or reestablish the centerline from the monuments and/or reference points Owner/Engineer will provide.
 - 2. On widening or reconstruction Projects, establish the horizontal and vertical alignment of the existing roadway and bridges.
 - 3. Modify the Plan horizontal and vertical alignment to conform to the existing alignment as necessary.
- D. Verify the Accuracy of the Benchmark(s):
 - 1. Owner/Engineer will furnish at least one benchmark that Owner's Representative shall preserve, and if necessary, relocate as follows:
 - a. Verify the accuracy of the benchmark(s) and report discrepancies to EngineerENGINEER.

- b. Establish additional benchmarks needed for construction.
 - c. Maintain the benchmarks for necessary Owner/Engineer checks.
- E. Flag In-Place Survey Control Monuments:
 - 1. Flag and protect in-place survey control monuments and reference points, including Right-of-Way/property line intersections, as follows:
 - a. Pay for and replace destroyed or disturbed stakes or monuments.
 - b. When included as Pay Items, stake Right-of-Way markers.
- F. Line, Grades, and Stakes:
 - 1. Set other line and grade stakes needed to construct the job, including stakes needed to relocate utilities and restake flattened slopes, minor grade or alignment changes, and other incidentals.
- G. Stake Centerline Control Alignments:
 - 1. Stake centerline control alignments shown on the Plans or adjusted as described above when Engineer needs accurate measurement of quantities for payment. Stake these control alignments as follows:
 - a. Stake the alignments to an accuracy of 1:5000.
 - b. Stake alignments just before Owner takes aerial photography or field cross sections for both original and final cross sections.
 - c. Take intermediate cross sections required because of stage construction, detours, or other reasons.
- H. Provide Graphic Sketches:
 - 1. Prepare and use graphic sketches of superelevation runout on curves on multi-lane roadways and of tie-ins of ramps to mainline on freeways and expressways to help provide positive drainage, adequate superelevation, and a pleasing appearance. Prepare and use similar sketches for street or roadway intersections.
- I. Maintain the Stakes:
 - 1. After construction has begun in any segment of the Project, maintain the stakes that identify construction station numbers and locations as follows:
 - a. Ensure that stakes are placed at intervals not to exceed 200 feet (60 m) and use even, 100 feet (30 m) stations. Mark and flag stakes so that they are visible to Owner/Engineer in that segment of the Project until construction is complete.
 - b. During grading activities in fills or cuts over 20 feet (6 m), extend slope stakes up or down the slopes in intervals of 10 feet (3 m) or less to achieve an accurate cross section.
- J. Traffic Markings:
 - 1. When traffic markings are to be placed by either or others, furnish the layout and clean and preline the surface to allow the placement of permanent pavement markings on the Project.
 - 2. When traffic markings are not included in the Project plans, Owner/Engineer will provide striping plans and/or standard drawings for Owner Representative's use.
- K. Provide Bridge Construction Layout:
 - 1. Provide alignment control, grade control, and calculations to set these controls for bridge construction.
 - 2. For new bridges, Owner/Engineer will furnish the necessary input data upon Owner Representative's request. Owner/Engineer will process the data to help the Owner's

Representative obtain finished deck elevations.

3. Data processing is available only as an alternate service to determine elevations. If this service is elected for use, prepare the input data and Owner/Engineer will furnish the output data. The following limitations apply:
 - a. Owner/Engineer will not assume liability for the accuracy of either input or output data.
 - b. Owner/Engineer will limit this service to two programs per bridge. This service is not available for existing bridges that are to be widened. Finished deck elevations for bridges that are to be widened will not be furnished.

3.03 QUALITY ACCEPTANCE

- A. Engineer's acceptance of Owner Representative's layout shall not relieve Contractor of responsibility to secure proper dimensions for the completed work. Contractor shall, at his own expense, correct work incorrectly located due to layout error

END OF SECTION

SECTION 01 77 00 CLOSEOUT PROCEDURES

GENERAL

1.01 CLEANING

- A. The CONTRACTOR shall perform periodic cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and wind-blown debris, resulting from construction operations.
- B. Waste material, debris and rubbish shall be periodically removed from the site and disposed of at legal disposal areas away from the site.
- C. Prior to OWNER acceptance the CONTRACTOR shall conduct an inspection of sight-exposed interior and exterior surfaces, and all Work areas, to verify that the entire Work is clean.
- D. CONTRACTOR shall broom clean exterior paved surfaces and rake clean other exterior surfaces of the site.

1.02 PROJECT RECORD DOCUMENTS

- A. The CONTRACTOR shall deliver one (1) copy of all Specifications, Plans, Addenda, Shop Drawings and Samples, annotated to show all changes made during the construction process, to the ENGINEER upon completion of the Work. Submittal of the record documents shall be made with a transmittal letter containing:
 - 1. Date
 - 2. Project Title and Number
 - 3. CONTRACTOR's Name and Address
 - 4. Title and Number of each Record Document
 - 5. Certification that each Document as submitted is complete and accurate
- B. Record Documents
 - 1. Shall be a complete set based upon the fully conformed Project Manual. annotations shall include all changes during the execution of the work resulting from Requests for Information, Field Orders, Construction Change Directives, and the as built conditions which differ from the proposed plans.
 - 2. Underground utilities installed as part of the Project and utilities exposed during execution of the Work shall be surveyed to record their location and elevation. The location shall be based upon available Project data (i.e.: coordinate system, benchmarks, etc.).
 - 3. The utility information shall include:
 - a. Straight run data every 100-feet.
 - b. Bends, valves, fittings, wyes/tees, hydrants, etc.
 - c. Crossings of other utilities.
 - 4. The record plans shall be in Portable Document Format (pdf), and full size (22" x 34").
 - 5. Annotations:
 - a. dimension changes with strike through and as built dimension.
 - b. changes clouded.
 - c. sketches, photos, etc. as appropriate.
- C. Documents shall be submitted in good order and in a legible condition.

1.03 OPERATION AND MAINTENANCE DATA

- A. Prior to final inspection or acceptance, the CONTRACTOR shall fully instruct OWNER's designated operating and maintenance personnel in the operation, adjustment and maintenance of all products, equipment and systems specified.
- B. Operation and maintenance data required by the individual Specification sections and the manufacturer's operation and maintenance data required in Section 01 3300, Submittal Procedures, shall constitute the basis of such instruction.

1.04 START UP

- A. The CONTRACTOR shall coordinate efforts between the OWNER, ENGINEER, any equipment manufacturers, subcontractors and governing agencies in the start up of applicable portions of the Work.

1.05 WARRANTIES

- A. Written warranties from the manufacturer shall be provided for major equipment supplied under this Contract. The manufacturer's warranty period shall be concurrent with the Contractor's warranty period. The warranty from the manufacturer shall not relieve the Contractor of the one-year warranty starting at the time of Project Substantial Completion. The Owner can request written warranties for equipment not classified as major.

1.06 SUBSTANTIAL COMPLETION

- A. Certification that the Work is substantially complete shall be in accordance with the General Conditions.

1.07 FINAL PAYMENT AND ACCEPTANCE

- A. The final inspection, final application for payment and acceptance shall be in accordance with the General Conditions.

PRODUCTS (NOT USED)

EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 89 00 SITE CONSTRUCTION PERFORMANCE REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes general performance requirements for earthwork complete with, removal and disposal of structures and obstructions, protection of existing sewers, tiles and mains; protection of existing building and improvements, protection of trees and other types of vegetation, protection of utility lines, requirements for pavement replacement, restoration of driveways and parking areas, restoration of sidewalks, restoration of lawns and disturbed areas, transportation and disposal of excess excavation.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 5713: Temporary Erosion and Sediment Control
- B. Section 31 2313: Subgrade Preparation
- C. Section 31 2316: Structural Excavation and Backfill
- D. Section 31 2319: Dewatering
- E. Section 31 2333: Trenching and Backfilling
- F. Section 32 1216: Bituminous Paving
- G. Section 32 1313: Concrete Paving
- H. Section 32 1315: Sidewalks and Driveways
- I. Section 32 9219: Seeding
- J. Section 32 9223: Sodding

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. MDOT: Michigan Department of Transportation Standard Specifications for Construction, latest edition.
 - 2. ASTM D698: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort

1.04 REQUIREMENTS OF REGULATORY AGENCIES

- A. CONTRACTOR shall comply with Section 01 5713, Temporary Erosion and Sediment Control. The CONTRACTOR, at his expense, shall secure all permits, and post all bonds or deposits required to comply with the Soil Erosion and Sedimentation Control, requirements, being Part 91 of PA 451 of 1994 as amended.
- B. CONTRACTOR shall comply with all requirements of the National Pollutant Discharge Elimination System (NPDES) Storm Water Program for Construction Activities, Part 31 of PA 451 of 1994 as amended.
- C. The CONTRACTOR shall provide, maintain and remove such temporary and/or permanent Soil Erosion and Sedimentation Control measures as specified on the Plans or as determined by the ENGINEER.
 - 1. The measures shall prevent surface runoff from carrying excavated materials into the waterways, to reduce erosion of the slopes, and to prevent silting in of waterways downstream of the Work.

2. Measures should include provisions to reduce erosion by the wind of all areas stripped of vegetation, including material stockpiles.

1.05 SUBMITTALS

- A. Written permission for the use of all disposal and borrow sites shall be obtained and copies shall be furnished to the ENGINEER.

1.06 PROTECTION OF PLANT LIFE

- A. All trees, shrubs, and other types of vegetation not within the limits of the Work or not designated on the Plans or by the ENGINEER to be removed, shall be carefully protected from damage or injury during the various construction operations.
- B. Any tree, shrub or other type of vegetation not designated to be removed but which is damaged by the CONTRACTOR's operation shall be repaired or replaced by the CONTRACTOR, at his expense, as determined by the ENGINEER.

1.07 PROTECTION OF ENDANGERED SPECIES LIFE

- A. Eastern Massasauga
 1. Materials used for erosion control and site restoration must be wildlife-friendly.
 2. Selected Contractor must review the EMR factsheet and watch MDNR's 60-second snakes.
- B. Northern Long Ear Bat
 1. During Project implementation, contractor must report sightings to the FWS within 24 hours regarding the Northern Long-Eared Bat:
 2. Any cutting/trimming of potential roost trees must occur during the period of September 1 through April 30. This activity cannot occur outside of this time period

1.08 PROTECTION OF EXISTING STRUCTURES AND IMPROVEMENTS

- A. All existing culverts, sewers, drainage structures, manholes, water gate wells, hydrants, water mains, utility poles, overhead lines, underground conduits, underground cables, pavement, or other types of improvements within the construction limits, not designated on the Plans to be removed, shall be carefully protected from damage during the construction operations.
- B. Any existing structure or improvement not designated to be removed, but which is damaged by the CONTRACTOR's operations shall be repaired or replaced by the CONTRACTOR, to the satisfaction of the owner, at his expense.
- C. Any deposits of dirt or debris in sewers, culverts, tiles, drainage structures, manholes, gate wells, etc. caused by the CONTRACTOR shall be cleaned out at the CONTRACTOR's expense.

1.09 MAINTAINING DRAINAGE

- A. All existing open drains, field and roadway ditches, drainage tile, sewers, enclosed drains, natural and artificial watercourses, surface drainage or any other types of drainage within the limits of the Work shall be maintained and free to discharge during construction.
- B. Drainage facility not designated to be abandoned, but which is damaged, or any drainage interrupted by the CONTRACTOR's operation shall be immediately repaired, replaced, or cleared by the CONTRACTOR.
- C. Costs incurred shall be incidental to the excavating, backfilling and compacting or grading operations.

PART 2 PRODUCTS

2.01 GRANULAR MATERIAL

- A. Bank run sand meeting the requirements of MDOT, Granular Material Class II.

2.02 AGGREGATE FOR SHOULDERS, PARKING AREAS, DRIVEWAYS OR ROADS

- A. Crushed Limestone, Natural Aggregate or Slag and meeting the requirements MDOT Section 902.

PART 3 EXECUTION

3.01 DEWATERING

- A. The area within the vicinity of the new Work shall be dewatered prior to commencing any construction activities. The depth of the dewatering shall be sufficient to allow the Work area to remain in a dry condition during the various construction operations.
- B. The costs incurred for furnishing, installing, maintaining and removing the dewatering equipment shall be at the CONTRACTOR's expense.
- C. Refer to Section 31 2319, Dewatering, for additional requirements.

3.02 GENERAL

- A. The various construction operations shall be restricted to the existing right-of-way or the areas indicated on the Plans. If the CONTRACTOR requires additional area, the CONTRACTOR shall furnish the ENGINEER with written permission obtained from the property owner for any part of the operations he conducts outside of the right-of-way or limits indicated.

3.03 EXISTING IMPROVEMENTS

- A. The CONTRACTOR shall expose existing sewers and structures to which the new Work is to be connected and notify the ENGINEER of same. The ENGINEER will verify the vertical and horizontal locations of the existing system and shall inform the CONTRACTOR as to the necessary adjustments required to align the new Work with the existing system.

3.04 EXISTING UTILITIES

- A. When existing utilities are shown on the Plans, their locations are approximate only, as secured in the field investigation and/or from available public records. The CONTRACTOR, prior to the start of construction, shall contact Miss Dig and the public agency or utility having jurisdiction to request the verification of all utilities within the construction area.
- B. When existing utility lines, structures or utility poles are encountered during the performance of the Work, the CONTRACTOR, at his expense, shall perform his operations in such a manner that the service will be uninterrupted.
- C. The CONTRACTOR shall expose all existing utility lines prior to any excavation operation, to determine any conflict with the proposed improvement. The CONTRACTOR shall be responsible for any relocation required as a result of any conflict of existing utilities shown on the plans, with the proposed improvement.
- D. Should it become necessary to move any utility structure, line or pole shown on the Plans or otherwise found necessary to be moved, the CONTRACTOR shall make all arrangements with the OWNER of the utility for the moving. All costs incurred for such moving shall be at the CONTRACTOR's expense unless indicated otherwise. However, before disturbing a utility line, structure or pole, the CONTRACTOR shall furnish the ENGINEER with satisfactory evidence, in writing, that proper arrangements have been made with the Owner of the utility.

3.05 UTILITY POLES

- A. The CONTRACTOR shall be responsible for any removal or relocation required as a result of any conflict of existing utility poles (including street light poles, guy poles, telephone poles, etc.) with proposed improvements.
- B. The CONTRACTOR shall make all arrangements for removing or relocating utility poles with the owner of the utility pole.
- C. Prior to disturbing any utility pole, the CONTRACTOR shall provide the ENGINEER with written evidence that proper arrangements have been made with the owner of the utility pole.

- D. When required by the Work, CONTRACTOR shall temporarily support poles in the vicinity of the Work at no additional cost to the OWNER. Support shall be in accordance with and to the satisfaction of the utility company.

3.06 EXISTING SEWERS, TILE, AND MAINS

- A. Existing sanitary sewers, storm sewers, drain tile, septic tank bed tiles, water mains or building services or leads, that are encountered during the performance of the Work that require relocation or are damaged, shall be restored with new materials equal in quality and type to the materials encountered.
- B. The new material shall be installed as specified in the Contract Documents and per the requirements of the local agencies. The bedding and backfill material, unless otherwise specified, shall be an approved Class II granular material, compacted to 95% of its maximum unit weight.
- C. Seepage bed tile and water mains shall be replaced in accordance with the requirement of the agency having jurisdiction.
- D. The relocation or protection of existing sewers, tiles, tile field, water mains or building services and leads shall be at the CONTRACTOR's expense, unless otherwise indicated in the Contract Documents.

3.07 EXISTING STRUCTURES

- A. Existing surface and subsurface structures may be shown on the Plans, in locations considered most probable from information secured in the field investigation or from available public records.
- B. Neither the correctness nor completeness of such information is guaranteed or implied.
- C. Structures shall be protected, preserved or restored by the CONTRACTOR, to the satisfaction of the structure owner, at no additional cost to the Project.

3.08 EXISTING BUILDINGS

- A. Existing buildings or structures may be encountered throughout the Project within limits of the presently established right-of-way or easement. Good construction methods and procedures shall be employed by the CONTRACTOR, at his expense, to protect the structures.
- B. When it becomes necessary for the CONTRACTOR to move one of these buildings or structures in order to proceed with construction, the CONTRACTOR, at his expense, shall exercise all due care in moving the building or structure to prevent undue damage.
- C. Prior to moving an existing building or structure, the CONTRACTOR shall furnish the ENGINEER with satisfactory evidence, in writing, that proper arrangements have been made with the owner.
- D. Unless otherwise specified in the Contract Documents, the length of the move shall be maintained to a minimum which will allow for construction of the improvement.

3.09 REMOVAL OF SEWERS AND CULVERTS

- A. Unless otherwise specified in the Contract Documents, the CONTRACTOR, at his expense, shall remove any abandoned culvert, pipe, sewer, structure or part of a structure which is to be replaced or rendered useless by the new construction.
- B. When a sewer or culvert is removed at a structure, the CONTRACTOR shall install a masonry bulkhead in the structure.
- C. Removal of a culvert or sewer also includes the removal and disposal of any end treatments or headwalls.

3.10 REMOVAL OF STRUCTURES

- A. The removal of existing structures shall consist of removing and salvaging the existing frame and cover. The ends of the existing pipe shall be plugged and braced. The complete structure

shall be removed entirely and disposed of. The excavation shall be backfilled with sand and compacted to 95 percent of its maximum unit weight. Maximum unit weight shall be determined by ASTM D698, Method B.

- B. If a structure is to be removed from a system that is to remain in service, a bypass system, approved by the ENGINEER, shall be installed and maintained by the CONTRACTOR, during the rebuilding period.

3.11 ABANDONING STRUCTURES

- A. The structure shall be broken down to at least 30 inches below the subgrade.
- B. Pipes connected to the structure shall be plugged with a brick, masonry or concrete bulkhead approved by the ENGINEER.
- C. The structure shall be backfilled with flowable fill to 12 inches above the pipes and the remainder of the structure backfilled with sand-cement mixture at a 10 to 1 ratio to subgrade elevation or to 12 inches below finished grade.
- D. The remainder of the excavation shall be backfilled with a granular material, compacted to 95% of its unit weight, and shall meet with the approval of the ENGINEER. Maximum unit weight shall be determined by ASTM D698, Method B.

3.12 SALVAGED MATERIAL

- A. Salvaged materials shall become the property of the CONTRACTOR unless otherwise specified in the Contract Documents, and shall be disposed of by the CONTRACTOR, at his expense.

3.13 REMOVE AND REPLACE TREE

- A. Tree removal and replacement may be accomplished in two ways.
 - 1. The CONTRACTOR may completely remove and dispose of the existing trees, and after the new improvement has been completed, tested, accepted and rough grading has been completed, the CONTRACTOR shall plant new trees, in approximately the same location as the existing trees, of size and species per the following (existing trees to be replaced with like specie):
 - a. "Acer Rubrum" October Glory Red Maple, 2-1/2 inch, B&B (min)
 - b. "Malus Centzam" Centzam Crabapple, 2 inch, B&B (min)
 - c. "Crataegus Phaenaopyrum" Washington Hawthorn, 8 foot, B&B (min)
 - d. "Pinus Nigra" Austrian Pine 6 foot, B&B (min)
 - e. "Picea Pungens" Colorado Spruce, 5 foot, B&B (min)
 - f. "Quercus Rubra" Red Oak, 2-1/2 inch, B&B (min)
 - g. "Pyrus Calleryana" Redspire Pear, 2 inch, B&B (min)
 - 2. The CONTRACTOR may remove and preserve the existing trees.
 - a. The trees shall be properly cared for and maintained in a healthy condition.
 - b. After the new improvement has been installed, tested, accepted and rough grading completed, the trees shall be replanted in approximately the same location.
 - c. Any trees damaged, destroyed or which die, shall be replaced at no additional cost.
- B. All trees, whether replanted or planted new, shall be guaranteed for a period of two years from the date of substantial completion.

3.14 REMOVING PAVEMENT

- A. The removal of concrete and bituminous pavement as called for on the Plans shall consist of removing and disposing of pavement and shall include base courses, surface courses, integral

and separate curbs, integral and separate curb and gutters, sidewalks and end headers.

- B. The pavement shall be removed to an existing joint or cut parallel to the existing pavement joints.
- C. The cutting shall be accomplished by using a power-driven concrete saw approved by the ENGINEER. The depth of the saw cut shall be a minimum of 6 inches, to insure that the removal of the old pavement will not disturb or damage the section of pavement remaining in place.
- D. Residual concrete pavement shall not be less than 5 feet measured transversely, nor less than 6 feet longitudinally measured from a joint.
- E. In removing a concrete base course, where part of the existing bituminous surface is to remain in place, the bituminous surface shall be cut the full depth by the use of a power-driven saw, approved by the ENGINEER along a line parallel to and at least 12 inches from either side of the base course removal.
- F. Old pavement with a concrete cap shall be considered as only one (1) pavement, whether or not there is a separation layer of earth, aggregate, or bituminous material between the old material and the concrete cap.
- G. Removal of Curb for Curb Drop
 - 1. Where curb is to be removed for a curb drop, the operation shall be performed by saw cutting or by cold milling, approved by the ENGINEER, so as to leave a neat surface with a maximum 1 inch lip, without damage to the underlying pavement.
- H. Removal of Curb and Gutter
 - 1. Where curb and gutter are to be removed, the operation shall be performed by saw cutting. The limits of the removal shall be as called for on the Plans, or as approved by the ENGINEER. However, in no case shall the width of removal be less than 18 inches for sections with rolled or straight curb or less than 24 inches for mountable curbs.
- I. If during the pavement removal operation any concrete or bituminous pavement or surfacing is damaged beyond the removal limits designated, the damaged pavement or surfacing shall be removed and replaced at the CONTRACTOR's expense.
- J. Any earth which may be removed during the pavement removal operation shall be replaced by backfilling to the proposed subgrade with a suitable material, approved by the ENGINEER, at the CONTRACTOR's expense.

3.15 FENCES

- A. Fences shall be removed and replaced or shall be removed as indicated on the Plans. If any of the existing material is damaged or destroyed, the CONTRACTOR shall replace the material at his expense.
- B. Where fencing is encountered during construction, and its removal was not called for on the Plans, it shall be replaced or restored, at the CONTRACTOR's expense, to a condition comparable to that prior to construction.
- C. After the fence removal or relocation operations are complete, all surplus material shall be removed and disposed of by the CONTRACTOR, at his expense, unless otherwise called for in the Contract Documents.
- D. Any holes or voids resulting from the fence removal operation shall be backfilled with a suitable material, approved by the ENGINEER.
- E. Where fences are encountered that are being used to confine livestock or to provide security, the fence shall be immediately replaced following construction. During construction, the CONTRACTOR, at his expense, shall provide, install and maintain a temporary fence, meeting the approval of the ENGINEER.

3.16 HOLES

- A. Earth removed during any phase of the excavation or removal operations, resulting in a hole or void, shall be replaced by backfilling to the proposed subgrade with a suitable granular material. The material shall be placed by the controlled density method or other effective means having the approval of the ENGINEER and shall be compacted to 95% of maximum unit weight.
- B. The furnishing, placing and compacting of the backfill material shall be at the CONTRACTOR's expense.

3.17 RESTORATION IN RIGHT-OF-WAY AND YARD AREAS

- A. The right-of-way and yard areas not paved or aggregate surfaced shall be restored in accordance with the type and location specified herein unless indicated otherwise on the Plans. The disturbed areas may be shaped by "Machine Grading" or another method approved by the ENGINEER to achieve the cross section, line and grade shown on the Plans. Areas where slopes are 1 on 4 or flatter shall be restored with topsoil, seed and mulch. Slopes steeper than 1 on 4 shall be restored with sod.
- B. Any excess material from the restoration operation shall be disposed of by the CONTRACTOR at his expense.
- C. The disturbed areas shall be graded to receive either topsoil and seed or topsoil and sod. The topsoil, seed, sod, fertilizer and mulch shall conform to the requirements specified on the Plans and in Section 32 9219, Seeding or Section 32 9223, Sodding.
- D. The CONTRACTOR, at his expense, shall furnish, place, and compact any additional fill, meeting the approval of the ENGINEER, needed to restore the disturbed areas to the cross sections called for on the Plans or as determined by the ENGINEER.

3.18 RESTORATION OF AGGREGATE SURFACES

- A. Shoulders
 - 1. The shoulder shall be regarded as the area between the edge of pavement and the ditch, or the area within 10 feet of the pavement, whichever is the lesser.
 - 2. The backfilling of trenches in the shoulder area shall be carried to within 5 inches of the existing surface as specified under Trench "A" or Trench "B" of Section 31 2333 Trenching and Backfilling. The remaining depth shall be backfilled with a minimum of 5 inches of compacted 22A or 23A aggregate with calcium chloride applied, at the rate of 6 pounds per ton of aggregate.
 - 3. The CONTRACTOR, at his expense, shall furnish, place and compact all materials necessary to complete the backfilling and restoration operation within the shoulder area.
- B. Driveways and Parking Areas
 - 1. Aggregate driveway areas shall be regarded as the area from the right-of-way line to the edge of the traveled roadway and shall include the shoulder area.
 - 2. The backfilling of trenches crossing aggregate surfaced driveways and parking areas shall be carried to the bottom of the proposed base course as specified under Trench "B". The remaining depth shall be backfilled with a minimum of 6 inches of compacted 22A or 23A aggregate, with calcium chloride applied at the rate of 6 pounds per ton of aggregate.
 - 3. Any aggregate surfaced areas beyond the limits of the actual excavation which are disturbed, as determined by the ENGINEER, by such operations as temporary storage of materials or passage of equipment, shall be resurfaced, at the CONTRACTOR's expense.
 - a. The upper three 3 inches of disturbed areas shall be removed as necessary to allow the final elevation of the resurfacing course to be at the elevation of the drive or parking area which existed prior to excavation.

- b. Disturbed area shall be resurfaced with a minimum of 3 inches of 22A or 23A compacted aggregate, with calcium chloride applied at the rate of of aggregate.
- 4. The CONTRACTOR, at his expense, shall furnish, place, and compact all materials necessary to complete the backfilling and restoration operations within the driveway and parking area.
- C. Roads and Streets
 - 1. Backfilling of trenches crossing aggregate surfaced roads or streets shall be carried to within 12 inches of the existing surface as specified under Trench "B" of Section 31 2333 Trenching and Backfilling. The remaining depth shall be backfilled with two 6 inches layers of compacted 22A or 23A aggregate, with calcium chloride applied at the rate of 6 pounds per ton of aggregate.
 - 2. The CONTRACTOR, at his expense, shall furnish, place, and compact all materials necessary to complete the backfilling and restoration operations within the roadway or street area.
 - 3. Also, any settlement of the aggregate surface shall be restored by placing additional aggregate, up to the original grade, and shall be done at the CONTRACTOR's expense.
- D. Compaction
 - 1. The compaction of all aggregate shall be performed by a pneumatic-tired roller or a vibratory compactor until the material forms a stable surface.

3.19 RESTORATION OF PAVED SURFACES

- A. The CONTRACTOR, at his expense, shall provide the materials necessary to complete the backfilling and restoration operations, which shall include furnishing, compacting, forming, placing, rolling, floating, jointing, finishing, curing and providing protection against elements.
- B. Restoration of any roadways that are partially damaged shall include a minimum replacement of one (1), full width lane of roadway. The length of replacement shall be at least equal to the width.
- C. Concrete
 - 1. The backfilling of trenches crossing concrete driveways, sidewalks, roads, streets or parking areas shall be carried to the bottom of the proposed pavement as specified under Trench "B" of Section 31 2333 Trenching and Backfilling.
 - 2. Unless otherwise specified on the Plans or as determined by the ENGINEER, the concrete removed shall be replaced with 3500 psi concrete of the thickness removed and shall include reinforcing equal to the existing, if the existing pavement was reinforced.
 - 3. The construction of concrete pavements shall be in accordance with Section 32 1313, Concrete Paving.
 - 4. Restoration of sidewalks shall also include the construction of sidewalk ramps at the intersection of the curb and shall conform to the current rules and regulations of the state of Michigan and to Section 32 1315, Sidewalks and Driveways, and unless otherwise indicated in the Proposal, shall be considered incidental to the Project.
- D. Bituminous
 - 1. The backfilling of trenches crossing bituminous driveways, sidewalks, roads, streets or parking areas shall be carried to the bottom of the base course as specified under Trench "B" of Section 31 2333 Trenching and Backfilling.
 - 2. Bituminous pavement or bituminous surface course with an aggregate base shall be replaced in accordance with Section 32 1216, Bituminous Paving.
 - 3. Bituminous surfaced areas beyond the limits of the actual excavation which are disturbed by such operations, as temporary storage of materials or passage of equipment, shall be

resurfaced with an approved bituminous mixture the same thickness as removed, but in no case less than 2 inches in thickness. Replacement material shall extend to smooth-cut edges, shall be uniform in direction and shall be at an elevation which provides a uniform surface between the undisturbed abutting surfaces.

4. Restoration of any bituminous chip seal shoulders that are damaged or partially damaged, as determined by the ENGINEER, shall include complete replacement full width and length (extending a minimum of 25 feet beyond the damaged area both ways). Existing bituminous chip seal shoulders shall be brought to proper grade with compacted 22A or 23A aggregate and resurfaced with a double chip seal per Section 32 1216, Bituminous Paving.

3.20 SOIL EROSION AND SEDIMENTATION CONTROL

- A. CONTRACTOR shall comply with the requirements of Section 01 5713, Temporary Erosion and Sediment Control. Prior to commencing any type of earthwork, the CONTRACTOR shall obtain a Soil Erosion and Sedimentation Control permit from the local enforcing Agency.
- B. The CONTRACTOR, at his expense, shall obtain all approvals, secure all permits and post all bonds and deposits required to comply with the Soil Erosion and Sedimentation Control Act, Part 91 of PA 451 of 1994, as amended, and those of the enforcing agency.
- C. The CONTRACTOR shall provide the ENGINEER with a copy of the soil erosion permit issued by the local enforcing agency for the Project, prior to commencing any type of earthwork on the Project.

3.21 EXCESS EXCAVATION

- A. Excess excavation shall be defined as all surplus earth material realized from the construction that is free of brush, roots, stumps, broken concrete, pipe, debris, and other extraneous material.
- B. The CONTRACTOR, when requested by the OWNER, shall transport all excess excavation to a site(s) designated by the OWNER.
 1. The excess excavation shall be graded by the CONTRACTOR to provide positive surface drainage of the site(s).
 2. Grading shall be done such that adjacent properties are not damaged or affected. The grading shall include removal of all surface irregularities to provide a smooth surface ± 3 inches.
- C. When the excess excavation has not been requested by the OWNER, the CONTRACTOR shall remove and properly dispose of the material at no additional cost to the OWNER.
- D. Proper disposal of all excess excavation, including transportation, grading, and protection of adjacent properties shall be considered as a final cleanup item. No additional payment will be made for this item.
- E. Brush, roots, stumps, broken concrete, pipe, debris, and other extraneous material from the construction shall become the property of the CONTRACTOR, and shall be disposed of per all applicable Laws, rules or regulations. Removal and disposal of this material shall be considered as part of final cleanup. No additional payment will be made for this item.
- F. OWNER approval of the final site(s) condition in writing will be required prior to final payment authorization.

END OF SECTION

10

Section 01 1100 Summary of Work

Part 1 General

1.01 Work Covered by Contract Documents

This Project includes removal and replacement of the parking lot and driveway off Silvery Lane and installation of new storm sewer at Van Houten Park in Dearborn Heights.

Parking lot improvements include removal of the existing parking lot, driveway approach, base and subbase, associated sidewalks, and existing signage. The new parking lot will be constructed in the same location, including the addition of new parking lot lighting, signage, storm improvements and planted bioretention rain garden in the center of the parking lot. The new driveway approach is being constructed north of the previous location.

Site landscaping will include the installation of new integrated planting areas and restoration of grass areas, trees, shrubs, and perennials. These will include mulch and steel edging.

The City of Dearborn Heights reserves the right to award each section of the proposal separately, entirely, or per work item.

The CONTRACTOR shall be responsible for securely storing any and all equipment procured in advance of the installation of said equipment until such time that the site is prepared for the installation of the equipment at no additional cost to the OWNER.

This is a Federal Community Development Block Grant (CDBG) project. All CDBG requirements must be followed.

1.02 Work by Others

Work by Others within the Project area, known to the OWNER, includes removal and replacement of existing light pole fixtures around the playground, and new site lighting and electrical service within the parking lot which will affect this Contract. This work is to be coordinated with the OWNER and the DTE Community Lighting Program. The CONTRACTOR shall be required to schedule work to meet milestones before and/or after the work coordinated between the OWNER and DTE Community Lighting at no additional cost to the OWNER.

1.03 Right-of-Way Jurisdiction/Permits

Silvery Lane is under the jurisdiction of the City of Dearborn Heights Department of Public Services.

Work in the City right-of-way requires a permit from the City Department of Public Services, Permits Office. The CONTRACTOR shall obtain the permit and pay all fees in connection with obtaining the permit. The fees for the permit are based upon a permit fee, plan review fee, and an inspection deposit. The cost of all inspection including any necessary soil compaction tests and concrete testing performed by the City Department of Public Services on this Project will be deducted from the inspection deposit. A cash inspection deposit (along with the permit fee and the plan review fee) will be required to be paid by the CONTRACTOR prior to obtaining the permit. The inspection deposit* is a percentage of the construction cost of the work in the City right-of-way based upon the following calculation:

Driveway Approach

6% of Construction Cost on first \$500,000

\$ _____

3% of Construction Cost between \$500,000.01 and \$1.0 Million	\$ _____
1% of Construction Cost over \$1.0 Million	\$ _____
 Total Inspection Deposit (total from above) *	 \$ _____
Permit Fee	\$ _____
Plan Review Fee (contact City of Dearborn Heights)	\$ _____

* Note: this is only a deposit. The CONTRACTOR is cautioned that the deposit is based upon the estimated cost. The actual cost of the inspection fee will be the actual costs incurred by the City for inspection on the Project. The CONTRACTOR will be responsible for any additional costs over and above the fee calculated above and will be refunded any excess amounts.

All other roads and streets in the vicinity of the Project are under the jurisdiction of the City of Dearborn Heights.

Soil erosion and sedimentation control is under the jurisdiction of the Wayne County Department of Environment, Land Resource Management Division.

The CONTRACTOR shall secure any permits required by the agency having jurisdiction, shall abide by all rules and regulations of each, and shall pay all costs in connection with the permits. The CONTRACTOR shall pay for all permit and inspection fees as the agencies may charge to ensure compliance with their requirements.

1.04 Coordination

It shall be the responsibility of the CONTRACTOR to coordinate his operations and those of his subcontractors in such a manner so as to avoid interference and delays in the areas of common construction activities.

1.05 CONTRACTOR's Use of Premises

The CONTRACTOR shall maintain his construction operations within the presently existing road rights-of-way and easements throughout the Project area. In the event that the CONTRACTOR deems it necessary or advisable to operate beyond the limits of the existing rights-of-way or easements, he shall be responsible for making special written agreements with the property owners and shall furnish such copies of agreement to the OWNER.

1.06 Audio/Video Route Survey

None is required for this project.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

SECTION 01 22 00 UNIT PRICES

PART 1 GENERAL

1.01 SCOPE

- A. This Section describes the method of measurement and basis of payment for all items of Work included in the Contract and specified in the Proposal. Contractor shall provide all labor, material, tools, equipment and services required to complete the Work specified herein and indicated on the Plans.
- B. Owner will make no allowances for items not included in the Proposal.

1.02 ITEMS OF THE PROPOSAL

A. Item 1-3

- 1. **Mobilization (5% Max)** will be paid for at the Contract Unit Price on a Lump Sum basis. Price paid shall be payment in full for labor, material, and equipment necessary for preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of Contractor's, Engineer's, and Owner's field offices, and other facilities necessary to undertake the work on the project; and for other work and operations which must be performed, or for expenses incurred, prior to beginning work on the various contract items on the project site. It shall also include preconstruction costs, including insurance and bonds, exclusive of bidding costs, which are necessary direct costs to the project and are of a general nature rather than directly attributable to other pay items under the contract. Payment for mobilization will be based upon the following schedule:

Partial Payment Schedule

Percentage of Original Contract Amount Earned	Percentage of Bid Price for Mobilization Allowed
5	50
10	75
25	100

B. Item 2-3

- 1. **Project Signage**, of the type, size, and area specified on the Plans will be paid for at the Contract Unit Price on a Lump Sum basis. Price paid shall be payment in full for labor, material, and equipment required for furnishing and installing project sign(s) and shall include, but is not limited to, installation, sign supports, mounting brackets, hardware, removal of sign at project completion, and other items necessary to complete the job whether specifically mentioned or implied.

C. Item 3-3

- 1. **Construction Staking** will be paid for at the Contract Unit Price on a Lump Sum basis. Price paid shall be payment in full for labor, material, and equipment required for furnishing, installing, and maintaining project limit staking as shown on the plans or as determined by the Engineer and shall include, but is not limited to, furnishing, installing, and maintaining layout of project elements, removal of devices, and other items necessary to complete the job, whether specifically mentioned or implied. will be provided as an allowance to be paid to the Owner's Representative at their actual invoiced cost. This payment shall constitute compensation for the labor, materials, and equipment required for a licensed Professional Surveyor to perform surveying activities in accordance with industry standards.

2. The surveying scope of work will include staking services to be performed by Owner's Representative to assist the Contractor with layout during construction. Owner's Representatives services are intended to help facilitate adherence to permitted plans and specifications as hardscapes, landscapes, grading, and other site features are constructed.
 3. Specific staking activities to be completed by Wade Trim include the following:
 - a. Layout stakes indicating locations of proposed silt fences and construction fencing
 - b. Layout construction limit delineation at riffle sections 1 through 6
 - c. Location and elevation stakes for features such as decorative fences, retaining walls, stairs, sidewalks, curbs, and gutters
 - d. Offset markers referencing locations of existing pavement areas intended to remain
 - e. Comprehensive grading stakes, including for structural components, earthwork volumes, and fine grading
 - f. Reference stakes for miscellaneous landscape features specified in plans
 - g. Stakes delineating existing and proposed grading/topographic site features
 4. The professional surveying services will provide support for construction of erosion control measures, hardscapes, landscapes, grading, and other elements in conformance with permitted engineering plans.
 5. CONTRACTOR shall not be allowed markups from the amount as invoiced by the Owner's Representative. Costs for coordination, profit, overhead, and the time necessary to obtain construction staking, shall be incidental to the Project.
- D. Item 4-3
1. **Soil Erosion and Sedimentation Control** will be paid for at the Contract Unit Price on a Lump Sum basis. Price paid shall be payment in full for labor, material, and equipment required for furnishing, installing, and maintaining erosion control devices as shown on the plans or as determined by the Engineer and shall include, but is not limited to, furnishing, installing, and maintaining, geotextile silt fence, straw bales, sediment traps, filter bags, establishing permanent erosion control, removal of devices, and other items necessary to complete the job, whether specifically mentioned or implied.
- E. Item 5-3
1. **Remove Asphalt Pavement**, regardless of thickness, will be paid for at the Contract Unit Price per Square Yard. Price paid shall be payment in full for labor, material and equipment necessary for removing bituminous pavement and related sub base, and shall include, but is not limited to, sawcutting, excavation, protection of existing improvements, removal and disposal of unsuitable material, barricading, miscellaneous restoration or cleanup, and other items necessary to complete the Work, whether specifically mentioned or implied.
 2. Measurement for removal of bituminous pavement will be determined by field measure of bituminous pavement removed.
- F. Item 6-3
1. **Remove Concrete Pavement**, six (6) inches or less in thickness, will be paid for at the Contract Unit Price per Square Yard. Price paid shall be payment in full for labor, material, and equipment necessary for the removal of concrete pavement six (6) inches or less in thickness, as shown on the Plans or as determined by Engineer and shall include, but is not limited to, sawcutting, removal and disposal of unsuitable materials, furnishing, placing and compacting backfill, protection of existing improvements, barricading, and for other items necessary to complete the job, whether specifically mentioned or implied.

2. Measurement for removal of concrete pavement six (6) inches or less in thickness will be determined by field measure of sidewalks or driveways removed.
- G. Item 7-3
1. **Remove Curb and Gutter**, will be paid for at the Contract Unit Price per Linear Foot basis. Price paid shall be payment in full for labor, material, and equipment necessary for the removal of concrete curb and gutter, as shown on the Plans or as determined by Engineer, and shall include, but is not limited to, sawcutting, removal and disposal of unsuitable materials, furnishing, placing and compacting backfill, protection of existing improvements, barricading, and for other items necessary to complete the job, whether specifically mentioned or implied.
 2. Measurement for removal of concrete curb and gutter will be determined by field measure of concrete curb and gutter removed.
- H. Item 10-3
1. **Remove Parking Signs/Posts**, will be paid for at the Contract Unit Price per Each. Price paid shall be payment in full for labor, materials, and equipment required for removing and disposing of existing park signs, and shall include, but is not limited to, removing sign, post, foundation, and hardware, cleanup, restoration, and other items necessary to complete the job, whether specifically mentioned or implied.
- I. Item 13-3
1. **Site Grading**, will be paid for at the Contract Unit Price on a Lump Sum basis. Price paid shall be payment in full for labor, material, and equipment necessary for excavation to the lines and grades shown on the plans, and shall include, but is not limited to, excavation and disposal of unsuitable material including, but not limited to, asphalt pavement, removal of temporary roadway, asphalt approaches and asphalt drives, aggregate surfaces, concrete end headers, rocks, earth, large stones, culverts, sewers, abandoned utilities, structures, the excavation, removal, and stockpiling of topsoil, protecting existing improvements, filling holes and voids with compacted granular backfill, the excavation and disposal of other items exposed in excavating to the subgrade, also for rough and fine grading and compacting the subgrade, barricading, and other items necessary to complete the job, whether specifically mentioned or implied.
- J. Item 14-3
1. **Excavation**, will be paid for at the Contract Unit Price on a lump sum basis. Price paid shall be payment in full for all labor, material, and equipment necessary for excavation to the lines and grades shown on the plans, and shall include, but is not limited to, all excavation and disposal of all unsuitable material including, but not limited to, all asphalt pavement, removal of temporary roadway, asphalt approaches and asphalt drives, aggregate surfaces, concrete end headers, rocks, earth, large stones, culverts, sewers, abandoned utilities, structures, the excavation, removal, and stockpiling of topsoil, protecting existing improvements, filling holes and voids with compacted granular backfill, the excavation and disposal of other items exposed in excavating to the subgrade, also for fine grading and compacting the subgrade, barricading, and all other items necessary to complete the job, whether specifically mentioned or implied.
- K. Items 15-3 and 16-3
1. **Concrete Pavement**, of the type and thickness specified on the Plans, will be paid for at the Contract Unit Price per Square Foot. Price paid shall be payment in full for labor, material, and equipment necessary for sidewalks, sidewalk ramps and driveway approaches and shall include, but is not limited to, excavation, construction, protection of existing improvements, undercutting and backfilling the subgrade, compacting and fine grading subgrade, furnishing, placing, and compacting backfill and subbase, construction of expansion joints, also forming, placing, jointing, finishing and curing the concrete,

construction of detectable warning, providing protection against rain and cold weather, barricading, restoration, and other items necessary to complete the job, whether specifically mentioned or implied.

2. Measurement for sidewalks, sidewalk ramps or driveway approaches will be determined by field measure of sidewalks, sidewalk ramps and driveway approaches in place. Sidewalk ramps will be measured from back of curb to the key flag or to the end of the monolithic rolled curb, whichever is less.

L. Item 18-3

1. **Concrete Curb and Gutter**, of the type and width specified will be paid for at the Contract Unit Price per linear foot unit basis. Price paid shall be payment in full for all labor, material, and equipment necessary for the concrete curb and gutter section and shall include, but is not limited to, all excavation, construction, protection of existing improvements, furnishing, placing, and compacting backfill and subbase, compacting and fine grading subgrade, providing and installing hook bolt assemblies, tie bar assemblies, reinforcing steel, also forming, placing, jointing, finishing, texturing and curing the concrete, providing protection against rain and cold weather, backfilling, barricading, restoration, gapping, and for all items necessary to complete the job, whether specifically mentioned or implied. Measurement for concrete curb and gutter will be in linear feet, determined by field measurement of curb and gutter in place.

M. Item 19-3

1. **Aggregate Base, 8"**, will be paid for at the Contract Unit Price per Cubic Yard. Price paid shall be payment in full for labor, material, and equipment required for the aggregate base course, compacted in place, and shall include, but is not limited to, excavation, construction, protection of existing improvements, also furnishing, placing, and compacting backfill and subbase, also compacting and fine grading subgrade, also furnishing and applying chemical additives and water, also for barricading, and for other items necessary to complete the job, whether specifically mentioned or implied.
2. Measurement for aggregate base course will be in cubic yards, of the thickness specified, and shall be determined by field measure. The width of the base course shall be equal to the width specified on the Plans or as determined by Engineer. If the width of the base course is increased to accommodate Contractor in placing forms, etc., the additional material placed beyond the width specified on the Plans or as determined by Engineer, will be at Contractor's expense.

N. Items 20-3 and 21-3

1. **Bituminous Pavement**, of the type and thickness specified on the Plans, will be paid for at the Contract Unit Price per Ton. Price paid shall be payment in full for labor, material, and equipment necessary for the bituminous pavement and shall include, but is not limited to, excavation, protection of existing improvements, also compacting and fine grading subgrade, also furnishing, placing and compacting backfill and subbase, also the furnishing, placing, rolling and compacting the various bituminous lifts or courses, also the furnishing and applying of prime and bond coats, barricading, restoration, and for other items necessary to complete the job, whether specifically mentioned or implied.
2. Measurement for bituminous pavement will be in tons, with the installed tonnage determined by certified batch plant delivery tickets submitted to ENGINEER, or his duly authorized representative, at the time of placement.

O. Item 22-3

1. **Barrier Free Sign**, will be paid for at the Contract Unit Price on a per Each basis. Price paid shall be payment in full for all labor, material, and equipment required for furnishing and installing barrier-free signage and shall include, but is not limited to, all installation, sign supports, mounting brackets, foundation, hardware, and all other items necessary to complete the job whether specifically mentioned or implied.

P. Item 23-3

1. **Concrete Bumper Blocks**, will be paid for at the Contract Unit Price per each, in place. Price paid shall be payment in full for all labor, material, and equipment necessary for furnishing and installing precast, reinforced parking bumpers and anchoring with pins as shown on the plans or specified.

Q. Item 24-3

1. **Pavement Markings, Complete** of the type, width and color specified on the Plans, will be paid for at the Contract Unit Price on a Lump Sum basis. Price paid shall be payment in full for all labor, material, and equipment necessary for pavement markings, actually placed, and shall include, but is not limited to, all preparation of surface, layout, removing any old markings, applying proposed pavement markings, glass beads, providing temporary barricading, cleanup, and all items necessary to complete the job, whether specifically mentioned or implied.

R. Item 27-3

1. **Storm Sewers**, of the type and diameter specified on the Plans, in open cut trench will be paid for at the Contract Unit Price per Linear Foot. Price paid shall be payment in full for labor, material, and equipment necessary for storm sewer pipe in open cut trench and shall include but is not limited to, excavation, sheeting, shoring, bracing, and dewatering, construction, protection of existing improvements, sand backfill, sand, stone or concrete pipe bedding, placing and removing of stoppers and bulkheads, final inspection which includes cleaning, stubs in drainage structures, connection to drainage structures and sewers, end sections, barricading, restoration, cleanup and other items necessary to complete the job, whether specifically mentioned or implied.
2. Measurement for storm sewers in open cut trench, will be in place, by length in linear feet, from center to center of end standard manholes, standard catch basins, standard inlets, headwalls, or other standard drainage structures, with no deduction in length for intermediate standard structures. However, where tee manholes or where special bid items, as indicated in Plans and Specifications, having a basis of payment of lump sum, are involved, the measurement will be from the end of the tee manhole or from the end of the special bid item nearest the adjoining drainage structure and the adjoining drainage structure.

S. Item 28-3

1. **Storm, Catch Basin**, of the size and type specified on the Plans, will be paid for at the Contract Unit Price per Each. Price paid shall be payment in full for labor, material, and equipment necessary for a complete standard catch basin structure, and shall include but is not limited to, excavation, dewatering, construction, frame, cover, bricks, blocks, cone section, riser sections, top section, bottom section, masonry plaster coat, steps, sand backfill, barricading, restoration, and other items necessary to complete the job, whether specifically mentioned or implied.

T. Items 32-3, 33-3, and 34-3

1. **Landscaping, Tree Planting**, of the size and type indicated in the Proposal, will be paid for at the Contract Unit Price per Each. Price paid shall be payment in full for all labor, material, and equipment necessary for tree planting and shall include, but is not limited to, selection and transporting trees; protection of trees; hole excavation, tree pruning, tree planting; topsoil or planting mixture backfilling, mulching, watering, guying and bracing, tree wrapping, tree dressing, warranting tree, shrub and plant material establishment; cleanup and all other items necessary to complete the job, whether specifically mentioned or implied.

U. Items 36-3 and 37-3

1. **Landscaping, Ornamental Grasses**, of the size and type indicated in the Proposal, will be paid for at the Contract Unit Price per Each. Price paid shall be payment in full for all labor, material, and equipment necessary for ornamental grass planting and shall include, but is not limited to, selection and transporting plant material; protection of plant material; hole excavation, plant material planting; topsoil or planting mixture backfilling, mulching, watering, warranting plant material establishment; cleanup and all other items necessary to complete the job, whether specifically mentioned or implied.

V. Item 41-3

1. **Landscaping, Float Stone**, of the type and thickness specified on the Plans, will be paid for at the Contract Unit Price per square foot unit basis. Price paid shall be payment in full for all labor, material, and equipment required for the float stone, compacted in place, and shall include, but is not limited to, all excavation, construction, protection of existing improvements, also furnishing, placing, and compacting backfill and subbase, also compacting and fine grading subgrade, also for barricading, and for all items necessary to complete the job, whether specifically mentioned or implied.
2. Measurement for float stone will be in square feet, of the thickness specified, and shall be determined by field measurement. .

W. Item 62-3

1. **Landscaping, Bioretention Basin**, will be paid for at the Contract Unit Price per Square Foot. Price paid shall be payment in full for labor, material, and equipment necessary for installation of bioretention basin in accordance with the cross section shown on the Plans or as determined by the Professional, and shall include, but is not limited to protection of existing improvements, bioretention soil medium, geotextile filter fabric, aggregate stone layers, spreading, grading, shaping, plowing, discing, raking, rolling, tamping, disposing of unsuitable or excess material, documentation of material delivered to site (i.e., delivery tickets), furnishing and installing plant material and/or seed, and all items necessary to complete the job, whether specifically mentioned or implied. Measurements for bioretention soil mix will be in square feet, with the installed footage determined by field measurement of basin bottom at the time of placement.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION



SECTION 02 41 13 SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Contractor shall furnish labor, materials and equipment necessary for the removal and subsequent disposal of the area(s) slated for demolition as shown on the Contract Drawings and specified herein. In addition, various utilities shall be cut, abandoned and capped, or completely removed; miscellaneous clearing and grubbing of trees, brush, and vegetation at boundary area shall be performed.
 - 1. Work includes the removal and disposal of the building materials and debris including the removal and disposal of miscellaneous site debris, including but not limited to building area debris, woods, piping materials, bricks, roof materials, metal equipment and all other non-specified material and debris found at the site.
 - 2. Work includes the removal and disposal of the building debris and concrete materials generated by the demolition of the structures listed above. Removal and disposal of concrete, rebar, and steel is incidental to the project. It is recommended that steel be recycled. Contractor may recycle concrete and asphalt to reduce cost.
- B. Contractor has salvage rights to all salvageable equipment, electrical equipment, metals, salable items, and other recyclable materials unless indicated otherwise.
 - 1. Contaminated building materials shall not be salvaged and shall be disposed of in accordance with applicable local, state, and federal regulations.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 33 00 - Submittal Procedures
- B. Section 01 31 19 - Project Meetings
- C. Section 31 23 16 - Structural Excavation and Backfill

1.03 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to the Owner's designated storage area.
- C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Owner, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

1.04 MATERIAL OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition legally at Contractor's theoption.

1.05 SUBMITTALS

- A. Submit each of the following items in accordance with Section 01 33 00:

1. **Work Plan:** Prior to proceeding with the demolition, removal and disposal work, the Contractor shall submit a work plan which includes the means, methods and procedures proposed for the accomplishment of the removal and disposal work.
 - a. Means, methods and procedures shall provide for safe conduct of the work; careful removal and disposition of buildings and structures, and solid materials and wastes; and protection of property that is to remain undisturbed.
 - b. Procedures shall provide a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.
 - c. The name and location of disposal facilities for all removed materials shall be submitted in the Work Plan.
 - d. Work plan shall be based on work experience, and the guidance provided in this specification. The cost of work plan preparation is incidental to the project.
2. **Demolition Schedule:** Contractor shall submit a complete coordination schedule for demolition work, including shut-off and continuation of utility services, with the Engineer's approval prior to start of the work.
 - a. Schedule shall indicate proposed methods and operations of facility demolition, and provide a detailed sequence of demolition and removal work to ensure uninterrupted operation of occupied areas.
 - b. Any cutting/trimming of Northern Long Ear Bats potential roost trees must occur during the period of September 1 through April 30. This activity cannot occur outside of this time period.
3. **Disposal Documents:** Contractor shall provide copies of all licenses, certifications, permits, agreements, manifests, chain of custody records, weigh tickets, meter recordings, delivery tickets, and receipts required or issued for the disposal of materials, the methods used, and the disposal areas and facilities. Contractor shall also provide a copy of the results of tests performed to comply with the requirements of each disposal facility.
4. **Manifests:** Contractor shall submit a copy of the official manifest for each shipment of removed materials including, but not limited to, building and structure debris, concrete and brick debris, and miscellaneous site debris and solid wastes evidencing delivery of the material to an approved licensed disposal facility. All manifests shall be in accordance with the requirements of all the applicable federal, state and local regulations. Manifests shall be signed by the Owner or the Owner's Representative.
5. **Project Record Documents:** Accurately record actual locations of capped utilities, concealed utilities discovered during demolition, and subsurface obstructions in accordance with Section 01 77 00.

1.06 QUALITY ASSURANCE

- A. **Demolition Firm Qualifications:** Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.
- B. **Regulatory Requirements:** Comply with governing Environmental Protection Agency notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. **Predemolition Conference:** Conduct conference at Project site to comply with Section 01 31 19.

1.07 PROJECT/SITE CONDITIONS

- A. **Condition of Facilities:** Owner assumes no responsibility for actual condition of facilities to be demolished. Contractor shall visit the site and inspect the existing facilities.
- B. **Occupancy:** Owner may continuously occupy areas of site immediately adjacent to areas of selective demolition. Conduct demolition work in manner that will minimize need for disruption of the Owner's normal operations.

- C. Protections: Provide temporary barricades and other forms of protection to protect the public from injury due to selective demolition work.
 - 1. Provide protective measures as required to provide free and safe passage of the Owner, tenants, vehicles, and general public to areas directly affected by demolition activities and those adjacent to such activities.
 - 2. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
 - 3. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
 - 4. Protect floors with suitable coverings when necessary.
 - 5. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing structures.
 - 6. Provide temporary dust and debris barriers of fire resistant materials to control dust and debris and to confine demolition of existing and finished work.
 - 7. Remove protections at completion of work.
- D. Damages: Promptly repair damages caused to adjacent facilities by demolition work.
- E. Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
 - 1. Do not close, block, or otherwise obstruct streets, walks, or other occupied or used facilities without approval from the Owner and providing alternate routes around closed or obstructed traffic ways.
- F. Flame Cutting: Do not use cutting torches for removal until work area is cleared of flammable materials. At concealed spaces, such as interior of pipe spaces, verify condition of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations.
- G. Explosives: Use of explosives is not permitted.
- H. Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.
 - 1. General:
 - a. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by the Owner. Provide temporary services during interruptions to existing utilities or schedule work to install interrupted utilities first, as acceptable to the Owner.
 - b. Maintain fire protection services during selective demolition operations.
 - c. Provide temporary support and protection of existing utilities, which cross the proposed piping trench.
 - d. Permits shall be obtained from utility or agency having jurisdiction, if necessary. Contractor is responsible for all permit fees.
 - e. If relocation of any utility is necessary, the Contractor shall be responsible for associated fees or expenses, unless indicated otherwise.
 - 2. Electrical Disconnection: Contractor shall verify that on site electrical wiring entering all structures to be demolished or in close enough proximity to be damaged by the demolition operations shall be disconnected and/or de-energized prior to proceeding with demolition operations.

- a. Contractor shall coordinate with the local electrical utility company for any necessary relocation of utilities and be responsible for any associated fees or expenses.
- 3. Water Disconnection: Contractor shall perform or verify that on-site water lines entering all structures or in close enough proximity to be damaged by the demolition operations shall be disconnected and/or capped prior to proceeding with demolition operations.
- 4. Sewer Disconnection: Contractor shall locate and bulkhead all sewer connections from the building structure prior to proceeding to demolition. The work shall be performed as indicated on Site Plans in accordance with .
- 5. Gas Disconnection: ContractorC shall verify that on-site gas lines/mains entering all structures or in close enough proximity to be damaged as a result of the demolition operations shall be disconnected and/or capped prior to proceeding with demolition operations.
- 6. Telephone and Cable Disconnection: Contractor shall verify that on-site gas lines/mains entering all structures or in close enough proximity to be damaged as a result of the demolition operations shall be disconnected and/or capped prior to proceeding with demolition operations.
- I. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.
 - 1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
- J. Provide ventilation to maintain non-toxic unpolluted working area for adjacent the Owner's operating areas and construction/demolition areas. Welding and cutting torches producing smoke or toxic fumes must be adequately ventilated.

1.08 WARRANTY

- A. Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

2.01 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Contractor shall use materials whose installed performance equals or surpasses that of existing materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Provide written pre-demolition report to the Engineer prior to start of Work. The report shall contain the following information:
 - 1. Determination of condition of framing, floors, and walls, and possibility of unplanned collapse of any portion of structure or adjacent structure where employees may be exposed.
 - 2. Various phases of demolition and description of how employees will be protected from unplanned contact with active utilities, exposure to toxic materials and gases, falling objects, structural collapse, and any other hazards routinely associated with demolition activities.
- B. Locate existing utilities within project limits prior to any demolition. Verify that utilities have been disconnected and capped.

1. If unanticipated mechanical, electrical or structural elements that conflict with intended function or design are encountered, investigate and measure nature and extent of conflict and promptly submit a written report to the Engineer.
 - a. Pending review of the report by the Engineer, the Contractor shall rearrange the selective demolition schedule, and notify the Engineer and the Owner as necessary to continue overall job progress without delay.

3.02 PREPARATION

- A. Conduct demolition operations and remove debris in manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
- B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities designated to remain.
 1. Provide temporary barricades and other forms of protection as required for safety and security.
 2. Provide barriers and appropriate to restrict pedestrians from wandering into construction areas.
 3. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure no water leakage or damage occurs to structure or interior areas.
- C. Erect and maintain dust-proof partitions and temporary enclosures to limit dust or dust migration, and to separate areas from fumes and noise, if necessary.
- D. Provide and maintain interior and exterior shoring, bracing or structural support to preserve stability and prevent movement, settlement, or collapse of structures and adjacent facilities that are not part of demolition.
- E. Provide acceptable temporary security barriers where physical security of buildings or fences is compromised due to demolition work.

3.03 SALVAGE REQUIREMENTS

- A. Coordinate with the Owner to identify structure and/or building components and equipment required to be removed and delivered to the Owner subsequent to demolition.
 1. Owner shall tag components and equipment designated for salvage.
- B. Contractor shall protect designated salvage items from demolition operations until items can be removed.
 1. Carefully remove components and equipment indicated to be salvaged.
 2. Disassemble as required to permit removal .
 3. Package small and loose parts to avoid loss.
 4. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.
 5. Deliver salvaged items to the Owner and obtain signed receipt from the Owner indicating that the Owner has received tagged items.

3.04 REPAIRS

- A. Contractor shall provide patching, replacing, repairing, and refinishing of damaged areas involved in demolition as necessary to match the existing adjacent surfaces whether shown or not shown, with materials and procedures approved by the Engineer.
- B. Return structures and surfaces not part of demolition, to conditions existing prior to commencement of demolition work.

- C. Contractor shall repair all damages caused to adjacent facilities by demolition as directed by the Engineer at no cost to the Owner.
- D. Contractor shall make a detailed inspection after patching and repairing has been completed, and shall carefully remove splattering of mortar from adjoining work (particularly, but not limited to, plumbing fixtures, trim, tile, and finish metal surfaces), and make good any damage caused by such cleaning operations.

3.05 DISPOSAL OF DEMOLISHED MATERIALS

- A. Contractor shall remove and legally dispose of demolished materials, site debris, rubbish, and other materials resulting from demolition operations shall be promptly removed.
 - 1. Demolition and removal of debris shall be conducted to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities which shall not be closed or obstructed without permission from the Owner.
 - 2. If the Contractor encounters material during removal that is suspected to be potential hazard, stop work immediately and notify the Engineer.
 - 3. Disposal shall conform to Federal, State and local requirements.
 - 4. Removed materials shall be documented by manifests and disposal facility tickets with copies given to the Engineer 48 hours after removal from the site.
- B. Burning of removed materials from demolished structures shall not be permitted on site.

3.06 RECYCLING

- A. Owner encourages the recycling of demolition debris where appropriate. Contractor has the option to recycle any material found or demolished on site in order to reduce costs or project duration.
- B. Although the materials are not limited, it is recommended that at least steel and concrete be recycled.
 - 1. Steel and concrete to be recycled can be stockpiled on site and eventually removed. Steel separated from demolition rubble may be recycled and becomes the property of the Contractor.
 - 2. Contractor will not be allowed to abate on site any lead paint found on the steel unless appropriate procedures and federal, state and local codes or regulations are followed.
 - 3. Any material stockpiled for recycling shall be removed from the site prior to the contract end date and/or site restoration.

3.07 CLEANING

- A. During and upon completion of work, the Contractor shall promptly remove unused tools and equipment, surplus materials, rubbish, debris, and dust and shall leave areas affected by work in a clean, approved condition in Division 1.
- B. Contractor shall clean adjacent structures and facilities of dust, dirt, and debris caused by demolition, as directed by the Engineer or Owner, and return adjacent areas to condition existing prior to start of work.

END OF SECTION

12

SECTION 03 11 00 CONCRETE FORMING

GENERAL

1.01 SCOPE

- A. This Section includes formwork for cast-in-place concrete, complete with furnishing, preparation, installation, coating, protection, adjustment, removal and accessories.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03 15 00 - Concrete Accessories
- B. Section 03 20 00 - Concrete Reinforcing
- C. Section 03 30 00 - Cast-in-Place Concrete
- D. Section 31 23 16 - Structural Excavation and Backfill

1.03 DESIGN STANDARDS

- A. The formwork shall be designed for the loads, lateral pressure, and allowable stresses outlined in "Guide to Formwork for Concrete" ACI 347R and for design considerations, wind loads, allowable stresses and other applicable requirements of the local building code. The design and construction of the formwork shall be the responsibility of the Contractor.
- B. The formwork shall be true in every respect to produce hardened concrete to the required shape, size, grade and alignment as indicated on the Plan, and of sufficient strength, bracing and rigidity to maintain their position and shape under the loads and operations incidental to placing and curing the concrete, as well as all other forces resulting from the movement of the forms.
- C. The forms shall be mortar-tight at the time concrete is placed in them and shall be so constructed that the surfaces of the finished concrete will be reasonably free from ridges, fins, offsets, or similar defects.
- D. Adequate and suitable means for removing the forms without injury to the surfaces or edges of the finished concrete shall be provided.

1.04 ALLOWABLE TOLERANCES

- A. Formwork shall be constructed such that the hardened surfaces shall conform to the tolerance limits of ACI 347R , except as modified below:
 - 1. Variation from plumb in lines and surfaces of piers, walls, or columns
 - a. In any 10 feet of length: 1/4 inch
 - b. Maximum for entire length: 1 inch
 - 2. Variation from the level or from the grades
 - a. In any 10 feet of length: 1/4 inch
 - b. Maximum for entire length: 3/4 inch
 - 3. Variation of distance between walls, columns and beams
 - a. In any 10 feet of distance: 1/4 inch
 - b. Maximum for entire distance: 1 inch
 - 4. Variation of the linear lines from established position as indicated on the Plan
 - a. In any 20 feet (6 m) of length: 1/2 inch
 - b. Maximum for entire length: 1 inch

5. Variation in sizes and locations of sleeves, floor openings, and wall openings
 - a. Minus: 1/4 inch
 - b. Plus: 1/2 inch
6. Variation in cross-sectional dimensions of columns and beams and thickness of slabs and walls
 - a. Minus: 1/4 inch
 - b. Plus: 1/2 inch
7. Variations of footing dimensions from plan dimensions
 - a. Minus: 1/2 inch
 - b. Plus: 2 inch
8. Thickness $\pm$ 5%, up to maximum of 1 inch

1.05 REFERENCE STANDARDS

- A. ACI 347R: Guide to Formwork for Concrete
- B. ASTM C31/C31M: Standard Practice for Making and Curing Concrete Test Specimens in the Field

1.06 SUBMITTALS

- A. Submit manufacturer's literature for form coating.
- B. Submit formwork layout plans, design data and procedures if requested by the Engineer.

1.07 STORAGE AND HANDLING

- A. Store and handle form coating to prevent contamination of coating in accordance with manufacturer's recommendations.

1.08 SEQUENCING

- A. Sequence installation of formwork with the Work of Section 03 20 00, Section 03 15 00, and Section 03 30 00.

PRODUCTS

2.01 FORM MATERIALS

- A. Use lumber that is straight, uniform width and thickness, free from knots, offsets, holes, dents, warpage and other surface defects.
- B. Use plywood product of standard psi, waterproof, resin-bonded, exterior-type Douglas Fir, face adjacent to concrete shall be Grade B or better.
- C. Metal forms to be smooth metal plate free of surface irregularities.
- D. Chamfer Strips: Use clear white pine, surface against concrete planed, 1 inch bevel width or cant strip.

2.02 FORM COATING

- A. Use nonstaining form oil or other mineral oil which will neither discolor nor otherwise injuriously affect the concrete.

2.03 FORM TIES

- A. Use permanently embedded body type with removable end cones on outer ends, permanently embedded portion 1 inch back from concrete face.

2.04 FORMS - GENERAL

- A. Use forms that conform to ACI 347R. Fabricate with facing materials that produce the specified tolerance requirements outlined in Part 1 of this Section; produce true surfaces, sharp corners and true lines; and are free of offsets, ridges, bulging, waves and concave or convex areas.

2.05 LAYOUT

- A. Use regular and uniform pattern; long dimension of panels vertical; joints horizontal, vertical and aligned; form ties uniformly spaced and aligned in horizontal and vertical rows.

EXECUTION

3.01 PREPARATION

- A. Forms shall not be reused if there is any evidence of surface wear and tear or defects which would impair the quality of the surface. Surfaces of forms and embedded materials shall be cleaned of any mortar from previous concreting and of all other foreign material or water before coating is placed in them.
- B. Forms shall be coated in accordance with manufacturer's recommendations before the form or reinforcement is placed in final position. Surplus coating on form surfaces, or any coating on reinforcing steel and construction joints shall be removed before placing concrete.

3.02 INSTALLATION OF FORMS

- A. Forms shall be sufficiently tight to prevent loss of mortar from the concrete, set true to the lines and elevations indicated on the Plans, tied and braced to remain true during and after concrete placement within tolerances outlined in Part 1 of this Section. The Engineer may at any time condemn any section or sections of forms found deficient in any respect, and such form shall be promptly removed and replaced.
- B. No wooden spreaders shall be allowed to remain in the concrete. No metal shall be within 1 inch of any surface.
- C. Place chamfer strips in forms to bevel all corners, edges, joints and other structural elements exposed to view, including use of dummy chamfer and false joints to provide neat and uniform appearance. Exposed corners and edges shall have 3/4 by 3/4 inch - 45 degree chamfers, unless otherwise indicated on the Plan.
- D. Provide temporary openings at the base of wall forms and at the other points when necessary to facilitate cleaning and inspection immediately before depositing concrete.
- E. Secure in position wedges used for final alignment and items to be embedded in concrete.
- F. Forms for keyways shall be prepared in advance of pouring concrete. Keyway forms in slab edges and vertical wall joints shall be rigidly secured in place before the concrete is poured. Forms for keyways for horizontal joints in walls may be placed at the conclusion of the pour, but proper provision shall be made for obtaining and holding the full depth and form of the keyway.

3.03 ADJUSTMENT OF FORMS

- A. Positive means of adjustment should be provided to permit realignment or readjustment of shores if excessive settlement occurs.
- B. A pair of wedges may be used at the top or bottom of shores, but not at both ends, to facilitate vertical adjustment, to correct uneven settlements, or to facilitate dismantling of the formwork.
- C. Screw jacks for pipe shores or scaffold-type shoring may be used at both top and bottom so long as they are secured by the shore or scaffold leg against loosening or falling out, to avoid lateral deflections.
- D. During and after concreting, but before initial set of the concrete, the elevations, camber, and plumbness of formwork systems shall be checked, using telltale devices. Appropriate adjustments shall be promptly made where necessary. If, during construction, any weakness develops and the formwork shows any undue settlement or distortion, the Work shall be

stopped, the affected construction removed if permanently damaged, and the formwork strengthened.

3.04 REMOVAL OF FORMS

- A. Forms, wedges or shoring shall not be removed or disturbed until the concrete has attained sufficient strength to safely support all superimposed dead, temporary construction, and live loads. When forms or shoring are removed, there shall be no excessive deflection or distortion of the concrete. Forms shall be removed in an orderly fashion; with care to avoid surface gouging, corner or edge breakage, or other damage or injury to the concrete surface or physical property; and without impact or shock, to permit the concrete to carry its share of the loads gradually and uniformly. Form removal shall not impair the safety and serviceability of the structure or concrete members.
- B. Forms and shoring in the formwork used to support the weight of concrete in beams, slabs, and other structural members shall remain in place a minimum of 14 days or until the concrete has reached a minimum of 75% of the design compressive strength. The cylinder strength shall be based on test specimens cured in the field, as described in ASTM C31/C31M, under conditions which are not more favorable than the most unfavorable conditions for the portions of the concrete which the test specimens represent and shall be determined in accordance with Section 03 30 00.
- C. Formwork for columns, walls and other vertical members shall remain in place a minimum of five (5) days or until the concrete has attained a minimum of 75% of its design strength. Where such formwork also supports the formwork of beams and slabs, the removal times of the latter shall govern. Face and edge forms shall be removed as soon as practicable and permitted by the Engineer in order to facilitate effective repair of voids or broken corners before the surface has dried.
- D. Forms and shoring in the formwork shall not be removed without the approval of the Engineer. The minimum in-place times are for ordinary conditions and represent cumulative number of days, not necessarily consecutive, after the concrete was placed, during which the temperature of the air surrounding the concrete is above 50 degrees Fahrenheit. The times may be increased or decreased as directed by the Engineer, dependent on air temperatures, cement type, concrete additives or other conditions of the Work in accordance with ACI 347R.

3.05 RESHORING

- A. When removing forms before structural members are strong enough to carry dead load and/or construction loads, reshores shall be installed to assure safe distribution of loading. Reshoring operations shall be planned in advance and shall be subject to the Engineer's review. During reshoring, no construction loads shall be permitted on the new construction.
- B. Reshores shall be placed as soon as practicable after form removal, but in no case later than the end of the working day on which form removal occurs, and shall remain in place until the concrete has acquired the required strength.

END OF SECTION

13

SECTION 03 15 00 CONCRETE ACCESSORIES

GENERAL

1.01 SCOPE

- A. This Section includes joint fillers, joint sealants, waterstops, and miscellaneous embedded items in concrete.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03 11 00 - Concrete Forming
- B. Section 03 20 00 - Concrete Reinforcing
- C. Section 03 30 00 - Cast-in-Place Concrete

1.03 REFERENCE STANDARDS

- A. ASTM A193/A193M: Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
- B. ASTM A194/A194M: Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
- C. ASTM A563/A563M: Standard Specification for Carbon and Alloy Steel Nuts
- D. ASTM B633: Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- E. ASTM D994/D994M: Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
- F. ASTM D1751: Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
- G. ASTM D1752: Standard Specification for Preformed Sponge Rubber, Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
- H. ASTM D6690: Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
- I. ASTM F436/F436M: Standard Specification for Hardened Steel Washers Inch and Metric Dimensions
- J. COE CRD-C 513: Handbook for Concrete and Cement Corps of Engineers Specifications for Rubber Waterstops
- K. COE CRD-C 572: Handbook for Concrete and Cement Corps of Engineers Specifications for Polyvinylchloride Waterstop

1.04 SUBMITTALS

- A. Submit certified manufacturer's affidavits for expansion joint filler, joint sealant and waterstops to verify compliance with the applicable Specifications.
- B. Submit a schedule of concrete pouring and indicate locations of proposed construction and expansion joints. This schedule is subject to approval of the Engineer.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Environmental requirements relative to temperature for placing joint sealants are specified in Part 3 of this Section.

1.06 SEQUENCING

- A. Contractor shall sequence installation of miscellaneous embedded items with the Work of Section 03 11 00, Section 03 20 00 and Section 03 30 00.

PRODUCTS

2.01 JOINT FILLER

- A. Preformed Expansion Joint Filler for Concrete (Bituminous Type) ASTM D994/D994M .
- B. Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types) ASTM D1751.
- C. Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Concrete ASTM D1752.

2.02 JOINT SEALER

- A. Joint Sealants, Hot-Poured, For Concrete and Asphalt Pavements ASTM D6690 Type II.
- B. Joint Sealants, Hot-Poured, Elastomeric Type, for Portland Cement Concrete Pavements ASTM D6690, Type II or III.

2.03 WATERSTOPS

- A. PVC waterstops shall conform to COE CRD-C 572 polyvinyl chloride (PVC) or COE CRD-C 513 styrene-butadiene rubber (SBR). Flat ribbed type shall be used in joints in walls and slabs where shown on the plans. Center bulb type shall be used in expansion joints.
- B. Bentonite waterstops shall be a compound of 75% high swelling sodium bentonite and 25% butyl rubber. Bentonite waterstops require an adhesive as recommended by the manufacturer to adhere the waterstop to the substrate.
- C. Hydrophilic rubber waterstop shall be a combination of chloroprene rubber and chloroprene rubber modified to impart hydrophilic properties. The waterstop shall have a delay coating to inhibit initial expansion due to moisture present in fresh concrete. Hydrophilic rubber waterstops require an adhesive as recommended by the manufacturer to adhere the waterstop to the substrate.

2.04 CONCRETE ANCHORS

- A. General:
 - 1. Select type and size to achieve required loading capacity using information provided by manufacturer. If required type is not indicated, select type appropriate to conditions and item being fastened.
 - 2. Maintain critical edge distance and spacing per manufacturer's recommendations for all anchors. Provide tamper proof hardware when called for on the plans.
- B. Adhesive Anchors:
 - 1. Combination capsule adhesive and insert system; chisel pointed threaded rod with hex nut/washer, reinforcing bar, or internally threaded insert, installed into pre-drilled anchor hole using rotary hammer drill, crushing glass capsule containing two part epoxy acrylate resin (vinyl ester) with quartz aggregate and hardening agent, forming adhesive mortar.
 - 2. Threaded rod: ASTM A193/A193M Grade B7, ASTM A194/A194M Grade 2H or ASTM A563/A563M Grade DH nuts, and ASTM F436/F436M washers; plated in accordance with ASTM B633, SC1, with Type II yellow chromate treatment or Type 304 stainless steel when specified on the plans.
 - 3. Threaded Insert: Carbon steel tubular insert, internally threaded, plated in accordance with ASTM B633, SC1.
- C. Wedge Type Anchors:
 - 1. One piece body with expansion mechanism installed in pre-drilled hole using matching tolerance bit.

2. Carbon steel anchor body, washers, nuts and wedges, plated in accordance with ASTM B633, SC1, Type III or Type 304 stainless steel anchor body, washers, nuts and wedges when so indicated on plans.

EXECUTION

3.01 CONTRACTOR'S VERIFICATION

- A. Inspect the locations and surfaces to receive joint filler, joint sealer, or miscellaneous embedded items and correct defects or conflicts which will affect the proper performance of the item to be placed.

3.02 PREPARATION

- A. All accessories to be embedded into concrete shall have contact surfaces free of dirt, curing compound, protrusions of hardened concrete or any other foreign material which would affect bond with concrete.
- B. Prime surfaces in accordance with manufacturer's recommendations.

3.03 INSTALLATION OF JOINT FILLERS

- A. Details, including materials and methods of installation of joint fillers shall be as indicated on the Plans and as approved by the Engineer.

3.04 INSTALLATION OF JOINT SEALANTS

- A. Joints shall not be sealed when the sealant, air or concrete temperature is less than 40 degrees Fahrenheit. Bond breaker and backup material shall be installed where required as indicated on the Plans or manufacturer's recommendations.

3.05 INSTALLATION OF WATERSTOPS

- A. Waterstops shall be of maximum practicable length to minimize joints.
- B. Waterstops shall be positioned as indicated on the Plans in a manner to permanently retain flexibility.
- C. Splice in length or at intersections shall be performed by heat sealing and in accordance with manufacturer's recommendations.
- D. Reform splices with a remolding iron with ribs or corrugations to match the pattern of the waterstop. When cooled and bent by hand in as sharp an angle as possible, the splice shall show no sign of separation.
- E. Provide support and protection of the waterstops during the progress of the work. Any waterstop punctured or damaged shall be replaced or repaired at Contractor's expense. Concrete shall be thoroughly consolidated in the vicinity of the waterstop. Suitable guards shall be provided to protect exposed projecting edges and ends of partially embedded waterstops from damage when concrete placement has been discontinued.

3.06 CONCRETE ANCHORS

- A. Do not begin installation until substrates have been properly prepared. Do not proceed with installation if substrate preparation is unsatisfactory.
- B. Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install in accordance with manufacturer's instructions and recommendations and as required by applicable code. Anchor applied items neatly, with item mounted plumb and level unless otherwise indicated.
- D. Engineer reserves the right to require the anchor manufacturer's representative to demonstrate proper installation procedures for post-installed anchors and to observe Contractor's installation procedures, at no extra cost to Owner. Engineer reserves the right to require pullout or shear

tests to determine adequacy of anchors, at no extra cost to Owner.

3.07 MISCELLANEOUS EMBEDDED ITEMS

- A. Inserts and other embedded items required for adjoining Work or for its support shall be placed prior to concreting.
- B. Embedded items shall be positioned accurately and supported against displacement. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable material to prevent the entry of concrete into the voids.

END OF SECTION

SECTION 03 20 00 CONCRETE REINFORCING

GENERAL

1.01 SCOPE

- A. This Section includes the furnishing, fabrication, placement and care of material used as concrete reinforcement.
- B. Latest or current ACI Standards and Code Requirements for "Concrete and Reinforced Concrete" shall govern all concrete Work except where otherwise specified herein. Copies of standards can be obtained from the American Concrete Institute.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03 11 00 - Concrete Forming
- B. Section 03 15 00 - Concrete Accessories
- C. Section 03 30 00 - Cast-in-Place Concrete

1.03 ALLOWABLE TOLERANCES

- A. Fabrication
 - 1. Sheared length: ± 1 inch
 - 2. Depth of truss bars: +0, -1/2 inch
 - 3. Stirrups, ties, and spirals: $\pm 1/2$ inch
 - 4. Other bends: ± 1 inch.
- B. Placement
 - 1. Concrete cover to form surfaces: $\pm 1/4$ inch
 - 2. Minimum spacing between bars: -1/4 inch
 - 3. Top bars in slabs and beams:
 - a. Members 8 inches deep or less: $\pm 1/4$ inch
 - b. Members more than 8 inches but not 24 inches over deep: $\pm 1/2$ inch
 - c. Members more than 24 inches deep: ± 1 inch
 - 4. Crosswise of members: Spaced evenly within 2 inches of stated separation.
 - 5. Lengthwise of members: ± 2 inches
 - 6. Maximum bar movement to avoid interference with other reinforcing steel, conduits, or embedded items: 1-bar diameter, with approval from the Engineer.

1.04 SOURCE QUALITY CONTROL

- A. Reinforcing steel shall be subject to inspection at the source of supply, fabricator, or after delivery to the Project Site at the discretion of the Engineer.
- B. Contractor may be required to furnish additional test of reinforcing steel for each 100 ton or fraction thereof. Testing for bend, pull, elongation and weight to assure compliance with Specifications shall be in accordance with ASTM A370.

1.05 REFERENCE STANDARDS

- A. ACI SP-66: ACI Detailing Manual
- B. ACI 301: Specifications for Concrete Construction

- C. ACI 318: Building Code Requirements for Structural Concrete and Commentary.
- D. ASTM A184/A184M: Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
- E. ASTM A370: Standard Test Methods and Definitions for Mechanical Testing of Steel Products
- F. ASTM A615/A615M: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- G. ASTM A706/A706M: Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
- H. ASTM A996/A996M: Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
- I. ASTM A1064/A1064M: Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
- J. ASTM C55: Standard Specification for Concrete Building Brick.
- K. ASTM E329: Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
- L. CRSI (DA4): Manual of Standard Practice

1.06 SUBMITTALS

- A. Contractor shall submit Shop Drawings indicating the size and dimensions for fabrication and placing of reinforcing steel, including bar schedules, stirrup spacing, and diameter of bend bars. Bar supports type and grade shall be indicated.
- B. Contractor shall submit test certificates of the manufacturer's laboratory, identifying chemical and physical analysis of each load of reinforcing steel delivered.
- C. Contractor shall submit test certificates of a qualified independent testing agency evaluation of the mechanical splice devices to assure compliance with ACI 318.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver reinforcement to Project site in bundles tagged and marked in accordance with CRSI (DA4).
- B. Reinforcing steel shall be stored above ground on platforms or other supports, in an orderly manner to facilitate inspection and checking, and be protected from physical injuries or contamination.

1.08 SEQUENCING

- A. Contractor shall coordinate placement of the reinforcing in a manner which will not prevent the proper and timely completion of dependent construction phases.

PRODUCTS

2.01 REINFORCING BARS

- A. Reinforcement shall be of the grade and type as specified herein unless otherwise indicated on the Plans or Shop Drawing.
- B. Bars
 - 1. Deformed and Plain Billet-Steel Bars: ASTM A615/A615M, Grade 60.
 - 2. Rail-Steel and Axle Steel Deformed and Plain Bars: ASTM A996/A996M, Grade 60.
 - 3. Low Alloy Steel Deformed Bars: ASTM A706/A706M.
- C. Mats
 - 1. Fabricated steel bar or rod mats of the clipped type shall conform to ASTM A184/A184M.

2.02 WELDED WIRE FABRIC

- A. Welded wire fabric shall be in flat mats only.
- B. Plain
 - 1. Conform to ASTM A1064/A1064M, 6 x 6 – w2.9 x w2.9 unless otherwise indicated on the Plans.
- C. Deformed
 - 1. Conform to ASTM A1064/A1064M, 6 x 6 – w2.9 x w2.9 unless otherwise indicated on the Plans.

2.03 TIE WIRE

- A. Plain
 - 1. Conform to Cold Drawn Steel Wire for Concrete Reinforcement ASTM A1064/A1064M, 16-gage minimum size.
- B. Deformed
 - 1. Conform to Deformed Steel Wire for Concrete Reinforcement, ASTM A1064/A1064M, size D-4 minimum.

2.04 BAR SUPPORTS

- A. Metal bar supports shall be fabricated from cold-drawn steel wire in accordance with current CRSI Standards.
- B. Stainless steel supports shall be of Type 1, with stainless steel wire conforming to ASTM A493 attached to the tips of the support so the nonstainless wire will lie no closer than 1/4 inch from the form surface.
- C. Plastic coated supports shall be of Type 1, with plastic coating of polyethylene conforming to ASTM D1248 on the legs and tips.
- D. Precast concrete brick supports shall conform to ASTM C55, Type 1, Grade N.

2.05 FABRICATION

- A. Bars shall be bent cold to the shapes and dimensions as indicated on the Plans, or as required by the current "Manual of Standard Practice" of the CRSI. Steel shall not be bent or straightened in a manner that will injure the material. Bars with kinks or improper bends shall not be used.
- B. The diameter of bend measured on the inside of the bar for standard hooks, other than stirrups and tie hooks, shall not be less than the values of the following table.

Minimum Diameters of Bend

Bar Size	Minimum Diameter
#3 through #8	6 bar diameters
#9, #10 and #11	8 bar diameters
#14 and #18	10 bar diameters

- C. Bends for stirrups and ties with number #5 bar and smaller shall not be less than four bar diameters. For bars larger than No.#5, shall be according to the "Minimum Diameter of Bend" table above.
- D. Bends for stirrups and ties for welded wire fabric shall not be less than 4-bar diameters for deformed wire larger than D-6 and 2-bar diameters for all other wires. Bends with inside diameter of less than 8-bar diameters shall not be less than 4-bar diameters from nearest welded intersection.

EXECUTION

3.01 CONTRACTOR'S VERIFICATION

- A. Contractor shall examine the areas in which the reinforcing steel is to be placed to assure proper lines and levels.

3.02 PREPARATION

- A. Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete or splicing method.
- B. Ends of bars to be butt spliced shall be cut square and smooth.

3.03 INSTALLATION - GENERAL

- A. Reinforcing shall be placed as indicated on the approved Shop Drawings, within allowable tolerances. Bar supports, as indicated on approved Shop Drawings, or in Specifications, shall be used for proper separation and support of reinforcing steel.

3.04 MINIMUM COVER AND SPACING

- A. Unless otherwise indicated on the Plans, the minimum spacing of bars shall be the following:
- B. Footings and other principal structural members in which the concrete is deposited against the ground shall have 3 inches of concrete between the bar and the ground contact surface.
- C. Concrete surfaces which, after removal of the forms, are to be exposed to the weather or in contact with the ground or liquids, shall be protected with 2 inches of concrete.
- D. The concrete protective covering for any reinforcement at surfaces not exposed directly to the ground, liquids or weather shall be 3/4 inch for slabs and walls and 1-1/2 inches for beams and girders.
- E. Column spirals or ties shall be protected everywhere by a covering of concrete cast monolithically with the core and shall be at least 1-1/2 inches .
- F. Concrete protection for reinforcement shall in all cases be at least equal to the diameter of bars, except for concrete slabs as noted above.
- G. The minimum center to center distance between parallel bars shall be 2-1/2 times the diameter of the bars. In no case shall the clear spacing between bars be less than 1 inch nor less than 1-1/3 times the maximum size of the coarse aggregate. The maximum center to center distance in parallel bars shall be 18 inches.
- H. Where reinforcement in beams and girders is placed in two (2) or more layers, the clear distance between layers shall be not less than 1 inch, and the bars in the upper layers shall be placed directly above those in the bottom layer.
- I. Welded wire fabric designated as load-carrying reinforcement shall be overlapped wherever successive mats are continuous in such a way that the overlap measured between outermost cross wires of each fabric sheet is not less than the spacing of the cross wires plus 2 inches. It shall be supported as required for reinforcing bars.

3.05 SPLICING

- A. Splices shall be avoided at points of maximum stress. Splicing of bars shall be in accordance with ACI 318.
- B. Splicing of bars shall be done by overlapping in accordance with ACI SP-66, and securely laced with wire unless indicated otherwise on the Plans or approved Shop Drawing.
- C. Lap adjoining wire mesh by no less than one (1) full mesh and lace securely with wire. Offset end laps in adjacent widths to prevent continuous splice.
- D. Welded wire fabric reinforcement shall be overlapped wherever successive mats are continuous in such a way that the overlap measured between outermost cross wires of each

fabric sheet is not less than one full mesh spacing plus 2 inches. The fabric shall extend across supporting beams and walls and to within four 4 inches of concrete edges. It may extend through contraction joints where alternate wires are field cut. It shall be adequately supported during placing of concrete to insure its proper position in the slab either by the methods of Part 3 of this Section or by laying the fabric on a layer of the fresh concrete of the correct depth before placing the upper layer of the slab.

- E. Vertical bars in columns shall be offset at least 1-bar diameter at lapped splices. To ensure proper placement, templates shall be furnished for all column dowels.
- F. Bars of size #14 and #18 or larger, where size #11 bars are butt spliced to larger sizes and/or when approved by the Engineer shall be welded in accordance with ACI 301 by full penetration butt welds. Adequate jigs and clamps or other devices shall be provided by the Contractor to support, align and hold the longitudinal centerline of the bars in a straight line.
- G. Bars larger than #11 may be butt spliced by mechanical devices approved by the Engineer, in accordance with ACI 318. Splices shall be made using manufacturer's standard jigs, clamps, ignition devices and other required accessories to support, align and hold the longitudinal centerline of the bars in a straight line.

3.06 SECURING REINFORCEMENT

- A. Reinforcement shall be securely laced with wire to supports or reinforcing to prevent displacement during the concrete placement, as required by the current CRSI (DA4).

3.07 FIELD QUALITY CONTROL

- A. Engineer shall inspect the reinforcing steel after it has been installed, and the reinforcing steel placement shall be approved by the Engineer prior to placement of concrete.
- B. Contractor shall avoid displacement of the reinforcing steel during concrete placement.

END OF SECTION

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SECTION 03 60 00 GROUTING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Contractor shall provide grout, complete and in place, in accordance with the Contract Documents
- B. The following types of grout are covered in this Section:
 - 1. Cement Grout
 - 2. Non-Shrink Grout - Class I (cement-based)
 - 3. Non-Shrink Grout - Class II (cement-based)
 - 4. Non-Shrink Epoxy Grout
 - 5. Epoxy Anchor Grout for Post Installed Adhesive Anchors
 - 6. Topping Grout and Concrete/Grout Fill

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 33 00 - Submittal Procedures
- B. Section 03 30 00 - Cast-in-Place Concrete

1.03 REFERENCES

- A. American Concrete Institute (ACI)
 - 1. ACI 318-19 - Building Code Requirements for Structural Concrete
 - 2. ACI 350-06 - Code Requirements for Environmental Engineering Concrete Structures
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM C307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing
 - 2. ASTM C496 - Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
 - 3. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
 - 4. ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
 - 5. ASTM C580 - Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, grouts, Monolithic Surfacing, and Polymer Concretes
 - 6. ASTM C648 - Standard Test Method for Breaking Strength of Ceramic Tile
 - 7. ASTM C695 - Standard Test Method for Compressive Strength of Carbon and Graphite
 - 8. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures
 - 9. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
 - 10. ASTM C882/C882M - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear

11. ASTM C939 - Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)
12. ASTM C1090 - Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout
13. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
14. ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete
15. ASTM C1339 - Standard Test Method for Flowability and Bearing Area of Chemical-Resistant Polymer Machinery Grouts

1.04 SUBMITTALS

- A. Furnish the following submittals in accordance with Section 01 33 00:
 1. Certified testing lab reports for tests indicated herein.
 2. Test results and service report from the field tests and the demonstration and training session verifying the requirements indicated herein.
 3. Certifications that grouts used on the project contain no chlorides or other chemicals that cause corrosion.
 4. Manufacturer's literature containing instructions and recommendations on the mixing, handling, placement, curing, and appropriate uses for each type of grout used in the Work, and location of use. The current ICC-ES or IAPMO-UES report shall be submitted for all epoxy anchor grouts for adhesive anchors.
 5. Manufacturer's certification that its non-shrink grout does not contain aluminum, zinc, or magnesium powders as a method of expansion.
 6. Submit manufacturer's written warranty as indicated herein.
 7. Name and telephone number of grout manufacturer's representative who will give on-Site service. The representative shall have at least one year of experience with the indicated grouts.

1.05 QUALITY ASSURANCE

- A. Field Tests:
 1. Compression test specimens will be taken from the first placement of each type of grout, and at intervals thereafter selected by the Owner. The specimens will be made by the Owner or its representative.
 2. Compression tests and fabrication of specimens for cement grout and cement based non-shrink grout will be performed in accordance with ASTM C1107/C1107M at intervals during construction selected by the Owner. As a minimum, a set of 3 specimens will be made for testing at 7 Days, 28 Days, and each additional time period as appropriate.
 3. Compression tests and fabrication of specimens for topping grout and concrete/grout fill will be performed in accordance with Section 03 30 00, at intervals during construction selected by the Owner.
 4. Compression tests and fabrication of specimens for epoxy grouts will be performed in accordance with ASTM C579 at intervals during construction selected by the Owner. A set of 3 specimens will be made for testing at 7 Days and each earlier time period as appropriate.
 5. The cost of laboratory tests on grout will be paid by the Owner except where test results show the grout to be defective. In such case, the Contractor shall pay for the tests, removal and replacement of Defective Work, and re-testing, all as part of the Work.

6. The Contractor shall assist the Owner in obtaining specimens for testing and shall furnish materials necessary for fabricating the test specimens.
- B. Construction Tolerances: Construction tolerances shall be as indicated in Section 03 30 00, unless indicated otherwise.
- C. Pre-Installation Demonstration and Training:
1. Cement and Epoxy-Based Non-Shrink Grouts:
 - a. The grout manufacturer shall give a demonstration and training session for the cement based non-shrink and epoxy grouts to be used on the project, before any installation of grout is allowed.
 - b. Training session shall use a minimum of 5 bags of cement-based non-shrink class I grout mixed to fluid consistency. Tests shall be conducted for flow cone and bleed tests. Six cubes for testing at 1, 3, and 28 Days shall be made. The remaining grout shall be placed, and curing may be initiated on actual project placements such as baseplates and tie holes to provide on-the-job training for the Contractor and Owner. Contractor employees who will be doing the grouting shall participate in this training and demonstration session. The training session shall include methods for curing the grout.
 - c. The manufacturer shall mix enough cement-based non-shrink class II grout for a minimum of 15 tie holes and shall train the Contractor's employees in how to perform the Work and cure the grout. Contractor shall have the employees assisting in the mixing and sealing of the tie holes.
 - d. If the project includes patching, through bolt holes, epoxy anchors, and/or blockouts, the manufacturer shall also train the Contractor's employees in the mixing and curing of the epoxy grouts for each of these applications.
 - e. The Contractor shall transport the test cubes to an independent test laboratory, obtain the test reports, and report these demonstration and training test cube strengths to the Owner.
 2. Epoxy Anchor Grout for Adhesive Anchors:
 - a. Special inspection for all adhesive anchor installations shall be provided:
 - 1) As recommended or required by the ICC-ES or IAPMO-UES report.
 - 2) As required by the enforceable building code.
 - 3) As otherwise indicated in the Contract Documents.
 - 4) The most stringent of the above requirements shall be used. The cost of special inspection of adhesive anchors shall be paid for by the Owner.
 - b. Before installing adhesive anchors in the Work, adhesive anchor installers shall be trained and qualified at the Site by the manufacturer's representative. Training and qualification for each installer shall include at least:
 - c. Hole drilling procedure, hole preparation and cleaning techniques, adhesive injection technique and dispenser training/maintenance, rebar dowel preparation and installation, and proof loading/torquing.
 - 1) Anchors installed in both the vertical and horizontal positions in a mock-up concrete panel of adequate size and thickness. Anchors shall be tested in tension. A minimum of 3 anchors shall be tested for each installation position.
 - 2) Anchors shall be tested at 2 times the published allowable tension load or 1-1/4 times the maximum design strength of the anchors in tension as indicated in the ICC-ES or IAPMO-UES report. The test load need not exceed 80 percent of the nominal yield strength of the anchor, based on steel strength, as determined by ACI 318-19 Chapter 17.

- 3) If any of the 3 test bolts in any installation position fail to reach the test loads, the installer shall be re-tested with the same procedure. Re-testing is required only for the failed installation position.
- 4) An installer who has 3 consecutive successful bolt tests in the first or second trial is considered qualified for adhesive anchor installation for this project. The manufacturer's representative shall issue a certificate to the qualified installer, and a copy of the certificate shall be filed with the Contractor and be submitted to the Owner.
- 5) The test anchor size shall be the largest size adhesive anchor used on the project. The anchor embedment length and edge distances shall be adequate to resist the test loads listed above.
- 6) Each installer shall be re-qualified every 6 months for the duration of the project by the same qualifying procedure.
- 7) The certification of each qualified installer shall be available for verification at the Special Inspector's request.
- 8) Defective anchors noted by the Special Inspector shall be replaced and re-installed by the Contractor without any additional compensation.

1.06 SPECIAL CORRECTION OF DEFECTS PROVISIONS

A. Manufacturer's Warranty:

1. Furnish one-year warranty for Work provided under this Section.
 - a. Manufacturer's warranty shall not contain a disclaimer limiting responsibility to the purchase price of products or materials.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Application:

1. Unless indicated otherwise, grouts shall be provided as listed in below whether indicated on the Drawings or not.

Application	Type of Grout
Anchor bolts, anchor rods, and reinforcing steel required to be set in grout	Epoxy Anchor Grout
Filling blockout spaces for embedded items such as railing posts, gate guide frames, etc.	Non-Shrink - Class I (Class II where placement time exceeds 20 min.)
Under precast concrete elements	Non-Shrink - Class II
Toppings and concrete/grout fill less than 3-inches thick	Topping Grout
Toppings and concrete/grout fill greater than 3-inches thick	Structural Concrete per 03 31 00
Surface repairs unless indicated otherwise	Cement Grout
Surface repairs less than 4" in their least dimension	Non-Shrink Epoxy
Repair holes and defects in concrete members which are not water bearing and not in contact with soil or other fill material	Non-Shrink - Class I
Repair of holes and defects in concrete members which are water bearing or in contact with soil or other fill materials	Non-Shrink - Class II

Any application not listed above, where
grout is indicated

Non-Shrink - Class I, unless specifically
indicated otherwise

B. Cement Grout:

1. Cement grout shall be composed of one part of cement, 3 parts of sand, and the minimum amount of water necessary to obtain the desired consistency. Where needed to match the color of adjacent concrete, white Portland Cement shall be blended with regular cement as needed. The minimum compressive strength at 28 Days shall be 4,000 psi.
2. Cement grout materials shall be as indicated in Section 03 30 00.

C. Non-Shrink Grouts (Cement-Based):

1. General:

- a. Cement-based non-shrink grout shall be a prepackaged, inorganic, fluid, non-gas liberating, non-metallic, cement type grout requiring only the addition of water. Cement from kilns burning metal-rich hazardous waste fuel shall not be used.
- b. Manufacturer's instructions shall be printed on each bag or other container in which the materials are packaged. The specific formulation for each class of non-shrink grout shall be as recommended by the manufacturer for the particular application.
- c. Grout shall not contain chlorides or additives that may contribute to corrosion.
- d. Grout shall be formulated to be used at any consistency from fluid to plastic.
- e. Cement-based non-shrink grout shall have the following minimum properties when tested at a fluid consistency, at 28 Days:
 - 1) Minimum tensile splitting strength of 500 psi per ASTM C496.
 - 2) Minimum flexural strength of 1,000 psi per ASTM C580.
 - 3) Minimum bond strength (concrete to grout) of 1,900 psi per modified ASTM C882/C882M.

2. Non-Shrink Grout – Class I:

- a. Non-Shrink Grout – Class I shall have a minimum 28 Day compressive strength of 5,000 psi when mixed at a fluid consistency.
- b. Non-Shrink Grout – Class I shall meet the requirements of ASTM C1107/C1107M, Grade B or C, when mixed to fluid, flowable, and plastic consistencies.
- c. Non-Shrink Grout – Class I shall have a maximum early age height change of 4.0 percent expansion and shall have no shrinkage (0.0 percent) in accordance with ASTM C827/C827M. The grout when tested shall not bleed or segregate at maximum allowed water.
- d. Non-Shrink Grout – Class I shall have no shrinkage (0.0 percent) and a maximum of 0.3 percent expansion in the hardened state when tested in accordance with ASTM C1090.
- e. Furnish certification that the non-shrink property of grout is not based on gas production or gypsum expansion.
- f. Non-Shrink Grout – Class I shall be Masterflow 713 Plus by BASF, Five Star Grout by Five Star Products, Sikagrout 212 by Sika Corporation, Duragrout by L&M Construction Chemicals; High-Flow Grout by Euclid Chemical Company, CG 200 PC by Hilti, or approved equal.

3. Non-Shrink Grout – Class II:

- a. Non-Shrink Grout – Class II shall be a high precision, fluid, extended working time, grout. The minimum 28-Day compressive strength shall be 7,500 psi, when mixed at

a fluid consistency.

- b. Non-Shrink Grout – Class II shall have a maximum early age height change of 4.0 percent expansion, and shall have no shrinkage (0.0 percent) in accordance with ASTM C827/C827M.
- c. Non-Shrink Grout – Class II shall have no shrinkage (0.0 percent) and a maximum of 0.3 percent expansion in the hardened state when tested in accordance with ASTM C1090.
- d. Non-Shrink Grout – Class II shall have an extended working time of 30 minutes minimum when mixed to a fluid consistency as defined in ASTM C827/C827M at temperature extremes of 45 to 90 degrees F in accordance with ASTM C1107.
- e. Non-Shrink Grout – Class II shall meet the requirements of ASTM C1107, Grade B or C when tested using the amount of water needed to achieve fluid consistency per ASTM C939.
- f. The grout when tested shall not bleed or segregate at maximum allowed water content.
- g. Provide certification that its non-shrink property is not based on gas production or gypsum expansion.
- h. Non-Shrink Grout – Class II shall be Masterflow 928 by BASF, Five Star Fluid Grout 100 by Five Star Products, SikaGrout 212 by Sika Group, Crystex by L&M Construction Chemicals, or approved equal.

D. Non-Shrink Epoxy Grout:

- 1. Non-shrink epoxy grout shall be a flowable, non-shrink, 100 percent solids system. The epoxy grout system shall have 3 components: resin, hardener, and specially blended aggregate, each premeasured and prepackaged. The resin component shall not contain any non-reactive diluents. Resins containing butyl glycidyl ether (BGE) or other highly volatile and hazardous reactive diluents are not acceptable. Variation of component ratios is not permitted unless specifically recommended by the manufacturer. Manufacturer's instructions shall be printed on each container in which the materials are packaged.
- 2. Epoxy grout shall have a maximum early age height change of 4.0 percent expansion, and shall have no shrinkage (0.0 percent) in accordance with ASTM C827/C827M , (modified for epoxy grouts by using an indicator ball with a specific gravity between 0.9 and 1.1).
- 3. Epoxy grout shall have a negligible (less than 0.0006 in/in) length change after hardening, and a coefficient of thermal expansion less than 0.00003 in/in F when tested according to ASTM C531.
- 4. The epoxy grout shall develop a minimum compressive strength of 9,000 psi in 24 hours and 13,000 psi in seven days when tested in accordance with ASTM C579, Method B.
- 5. The mixed epoxy grout shall have a minimum working life of 90 to 120 minutes at 70 degrees F.
- 6. The effective bearing area shall be a minimum of 95 percent EBA in accordance with ASTM C1339 for bearing area and flow.
- 7. The chemical formulation of the epoxy grout shall be that recommended by the manufacturer for the particular application. Do not reduce aggregate loading or add solvents to increase flowability.
- 8. Non-shrink epoxy grout shall have the following minimum properties when tested at 7 Days:
 - a. Minimum bond strength to concrete of 3,000 psi per ASTM C882/C882M, modified.
 - b. Minimum bond strength to steel of 1,700 psi per ASTM C882/C882M, modified.

- c. Minimum flexural strength of 2,500 psi per ASTM C580.
 - d. Minimum tensile strength of 2,000 psi per ASTM C307.
9. Non-shrink epoxy grout shall be Five Star DP Epoxy Grout by Five Star Products, Inc., Masterflow 648 CP Plus by BASF, Sikadur 42 Grout-Pak by Sika Corporation, or approved equal.
 10. Epoxy Anchor Grout
 11. Epoxy anchor grout for use in concrete shall be certified for use in accordance with ICC-ES AC 308.
 12. Epoxy anchor grout shall conform to ASTM C881/C881M, Type IV, Class B & C, Grade 3 with the exception of gel time.
 13. Heat deflection temperature per ASTM D648 shall be a minimum 120 degrees F.
 14. Manufacturer shall certify that the epoxy anchor grout will maintain 100 percent of its capacity up to a short-term temperature of 110 degrees F and 50 percent of its capacity up to a short-term temperature of 150 degrees F.
 15. Grout shall come in a two (2) chambered cartridge with a metering system that provides the proper ratio of hardener and resin. The grout shall also come with a static mixer nozzle to thoroughly mix the hardener and resin together.
 16. Epoxy anchor grout shall be capable of being used in submerged applications once cured.
 17. Compressive strength per ASTM D695 shall be 10,000 psi minimum.
 18. Whenever possible, overhead anchors subject to vibration, anchors in fire-resistive construction or high fire risk areas, and anchors subject to working or operating temperatures above 100 degrees F shall be cast-in-place anchors. Whenever cast-in-place anchors cannot be used in these applications, use cement based non-shrink grout and oversized holes.
 19. Embedment of adhesive anchors/rebar shall be deep enough to develop the anchor/rebar unless otherwise noted on the Contract Documents. Embedment shall not exceed 67 percent of the member depth.
 20. Epoxy anchor grout shall be PE1000+ by Powers Fasteners; HIT-RE 500-V3 by Hilti, SET-XP by Simpson Strong-Tie, or approved equal.
- E. Topping Grout and Concrete/Grout Fill:
1. Where fill thickness is 3-inches or greater, structural concrete, as indicated in Section 03 30 00, shall be used. Omit the coarse aggregate in topping grout used in clarifiers.
 2. Grout for topping of slabs and concrete/grout fill for built-up surfaces of tank, channel, and basin bottoms shall be composed of cement, fine aggregate, coarse aggregate, water, and admixtures proportioned and be mixed as indicated. Materials and procedures indicated for normal concrete in Section 03 30 00, shall apply unless indicated otherwise.
 3. Topping grout and concrete/grout fill shall contain a minimum of 564 pounds of cement per cubic yard with a maximum water cement ratio of 0.45. Topping grout in clarifiers shall contain between 750 and 800 pounds of cement per cubic yard with a maximum water cement ratio of 0.42.
 4. Coarse aggregate shall be graded as follows:

U.S. Standard Sieve Size	Percent By Weight Passing
1/2 inch	100
3/8 inch	90 - 100
No. 4	20 - 55
No. 8	5 - 30

No. 16
No. 30

0 - 10
0

5. Final mix design shall be as determined by trial mix design as indicated in Section 03 30 00, except that drying shrinkage tests are not required.
 6. Topping grout and concrete grout/fill shall contain air-entraining agent per Section 03 30 00 .
 7. Strength: Minimum compressive strength of topping grout and concrete/grout fill at 28 Days shall be 5,000 psi.
 8. Topping grout used in clarifiers or where the fill thickness is 3 inches or greater shall contain synthetic fiber reinforcing, unless otherwise shown on the Contract Documents. Synthetic fiber reinforcing shall be in accordance with Section 03 30 00 and shall conform to ASTM C1116/C1116M , Type III.
- F. Curing Materials:
1. Curing materials shall be in accordance with Section 03 30 00, and as recommended by the manufacturer of prepackaged grouts.
- G. Consistency:
1. The consistency of grouts shall be that necessary to completely fill the space to be grouted for the particular application. Dry pack consistency is defined such that the grout is plastic and moldable but will not flow. Where "dry pack" is called for in the Contract Documents, it shall mean a grout of that consistency; the type of grout to be used shall be as indicated herein for the particular application.
 2. The slump for topping grout and concrete/grout fill shall be adjusted to match placement and finishing conditions but shall not exceed 4-inches.
- H. Measurement of Ingredients:
1. Measurements for cement grout shall be made accurately by volume using containers. Shovel measurements shall not be allowed.
 2. Prepackaged grouts shall have ingredients measured by means recommended by the manufacturer.

PART 3 EXECUTION

3.01 GENERAL

- A. Contractor shall arrange for the manufacturer of prepackaged grouts to provide on-Site technical assistance within 72 hours of request, as part of the WORK.
- B. Grout shall not be placed until base concrete or masonry has attained its design strength, unless authorized otherwise by the Owner.
- C. When cementitious grouts are used on concrete surfaces, the concrete surface shall be saturated with water for 24 hours prior to placement. Upon completion of the saturation period, excess water shall be removed with clean, oil free compressed air prior to grouting. Concrete substrate shall not be wet prior to placement of epoxy grouts.
- D. Surface preparation, curing, and protection of cement grout shall be in accordance with Section 03 30 00. The finish of the grout surface shall match that of the adjacent concrete unless otherwise indicated.
- E. Surfaces that will be in contact with grout shall be free of dirt, loose rust, oil, wax, grease, curing compounds, laitance, loose concrete, and other deleterious materials.
- F. Shade the Work from sunlight for at least 24 hours before and 48 hours after grouting.
- G. Contact the grout manufacturer's representative for assistance on hot and cold weather grouting techniques and precautions if applicable.

3.02 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Grout shall be stored in accordance with manufacturer's recommendations.

3.03 GROUTING PROCEDURES

- A. General: Mixing, surface preparation, handling, placing, consolidation, curing, and other means of execution for prepackaged grouts shall be done according to the instructions and recommendations of the manufacturer.
- B. Structural, equipment, tank, and piping support bases shall be grouted, unless indicated otherwise.
 - 1. The original concrete shall be blocked out or finished off a sufficient distance below the plate to provide for a minimum one-inch thickness of grout or other thickness if indicated.
 - 2. After the base plate has been set in position at the proper elevation by steel wedges or double nuts on the anchor bolts, the space between the bottom of the plate and the original pour of concrete shall be filled with non-shrink-type grout through a headbox of appropriate size. The mixture shall be of a fluid consistency and poured continuously into the space between the plate and the base concrete. Forms for grout shall be tight against retaining surfaces, and joints shall be sealed as recommended by the grout manufacturer to be liquid-tight. Forms shall be coated as recommended by the grout manufacturer for easy form release. Where this method of placement is not practical or where required by the Owner, alternate grouting methods shall be submitted by the Contractor for acceptance by the Owner.
 - 3. Concrete equipment pads for equipment bases that will be epoxy-grouted shall be sized so that, when the equipment base is fully grouted, the epoxy grout is stopped not less than 4-inches from the edge of the pad.
- C. Drilled Anchors and Reinforcing Bars:
 - 1. General:
 - a. Drilled anchors and reinforcing bars shall be installed in strict accordance with the manufacturer's instructions and applicable ICC-ES or IAPMO-UES report requirements. Holes shall be drilled, brushed and cleaned in accordance with the manufacturer's instructions. Drilled anchors shall not be installed until the concrete has reached the required 28 Day compressive strength. Anchors shall not be loaded until the grout has cured for the full cure time indicated by the manufacturer and reached its indicated strength in accordance with the manufacturer's instructions.
 - b. Contractor shall identify the position of reinforcing steel and other embedded items prior to drilling holes. Care shall be exercised in drilling to avoid damaging existing reinforcing or embedded items. The location of drilled holes shall be adjusted to avoid drilling through or cutting any existing reinforcing bars or embedded items. Notify the Owner if reinforcing steel or other embedded items are encountered during drilling. Take precautions as necessary to avoid damaging prestressing tendons, electrical and communications conduit, and piping.
 - c. Unless otherwise indicated, embedment shall be sufficient to develop the ultimate tensile strength of the anchor or reinforcing bar per the manufacturer's ICC-ES or IAPMO-UES report, but shall not be less than 8 diameters for threaded rod or 12 diameters for reinforcing or smooth bars.
 - d. Core drilling of holes is not allowed.
 - e. Relocation of drilled holes and adjustments or modifications to anchored or fastened items shall be considered part of the Work and shall be provided at no additional cost to the Owner.
 - f. Abandoned drilled holes shall be filled with Epoxy Anchor Grout.
 - 2. Epoxy Adhesive Anchors:

- a. Grout shall be proportioned and mixed per the manufacturer's instructions.
 - b. Unless otherwise indicated, embedment shall be sufficient to develop the ultimate tensile strength of the anchor or reinforcing bar per the manufacturer's ICC-ES or IAPMO-UES report, but shall not be less than 8 diameters for threaded rod or 12 diameters for reinforcing or smooth bars.
 - c. Holes shall be dry.
- 3. Cement Based Non-Shrink Grout used for Anchorage:
 - a. In places of high temperature or fire hazard, anchor bolts and anchor rods shall be grouted in using cement based non-shrink grout, Class I.
 - b. Unless otherwise indicated, embedment shall be sufficient to develop the ultimate tensile strength of the anchor bolt, anchor rod or reinforcing bar per the manufacturer's ICC-ES or IAPMO-UES report, but shall not be less than 16 diameters for threaded rod or 24 diameters for reinforcing or smooth bars.
 - c. When the anchor bolt or anchor rod diameter is one-inch or less, the hole diameter shall be a minimum of 2-inches. When the anchor bolt/rod diameter is greater than one-inch, the hole diameter shall be at least twice the anchor bolt/rod diameter.
 - d. Drilled holes shall be saturated with water for not less than 24 hours before installation of anchor/rod/rebar.
- 4. The non-shrink grout shall be placed in the holes in a non-sag (trowelable) consistency. The grout shall be placed in the holes before the anchor bolt/rod and then the anchor bolt/rod inserted and vibrated to ensure proper coverage.
- D. Topping Grout and Concrete/Grout Fill:
 - 1. Mechanical, electrical, and finish Work shall be completed prior to placement of topping or concrete/grout fill. To ensure bonding to the base slab, the base slab shall be given an exposed aggregate finish. Alternatively, where accepted by the Owner, the base slab shall be given a roughened textured surface by a close-spaced rake while the surface is green. After curing, high pressure washing shall expose the aggregates and produce not less than a 3/16-inch amplitude roughness. Jackhammers or chipping hammers shall not be used.
 - 2. The minimum thickness of grout topping and concrete/grout fill shall be one-inch. Where the finished surface of concrete/grout fill is to form an intersecting angle of less than 45 degrees with the concrete surface it is to be placed against, a key shall be formed in the concrete surface at the intersection point. The key shall be a minimum of 3-1/2 inches wide by 1-1/2 inches deep.
 - 3. The base slab shall be thoroughly cleaned and wetted to saturated surface dry (SSD) condition per the International Concrete Repair Institute (ICRI) - Technical Guide for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays, prior to placing topping and fill. No topping concrete shall be placed until the slab is completely free from standing pools or ponds of water. A thin coat of neat cement grout shall be broomed into the surface of the slab just before topping or fill placement. The neat cement grout shall not be allowed to dry before topping placement. If it does dry, it must be immediately removed using wet stiff brooms and reapplied. The topping and fill shall be compacted by rolling or thorough tamping, brought to established grade, and floated. Grouted fill for tank and basin bottoms where scraping mechanisms are to be installed shall be screeded by blades attached to the revolving mechanism of the equipment in accordance with the procedures outlined by the equipment manufacturer after the grout is brought to the established grade. Coat surface with evaporation retardant as needed to prevent plastic shrinkage cracks.
 - 4. Topping grout placed on sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement.

5. The surface shall be tested with a straight edge to detect high and low spots which shall be immediately eliminated. When the topping or fill has hardened sufficiently, it shall be steel troweled to a smooth surface free from pinholes and other imperfections. An approved type of mechanical trowel may be used as an assist in this operation, but the last pass over the surface shall be by hand-troweling. During finishing, no water, dry cement, or mixture of dry cement and sand shall be applied to the surface.
6. As soon as topping or fill finishing is completed, coat surface with curing compound. After the topping is set and sufficiently hard in clarifiers and where required by the Owner, the tank shall be filled with sufficient water to cover the entire floor for 14 days.

3.04 CONSOLIDATION

- A. Grout shall be placed in such a manner that the space to be grouted is completely filled.

3.05 CURING

- A. Cement-based grouts shall be cured per Section 03 30 00 and per the manufacturer's recommendations.

END OF SECTION

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SECTION 04 05 11 MORTARING AND GROUTING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section includes the preparation and installation of mortar and grout used for bond or primer coats, laying and grouting masonry units, filling the inside annular space of pipe joints, general patching, grout for riprap and flagstone slope protection, joints in precast structural members, spaces under leveling plates and equipment bases, supporting structures, grouting dowels and anchor bolts.

1.02 DEFINITIONS

- A. Mortar is a plastic mixture of cementitious materials, admixtures where specified, fine aggregate and water.
- B. Grout is a mixture of sand, water, and fine aggregate mixed to a fluid consistency.

1.03 REFERENCE STANDARDS

- A. ACI - 530.1: Specification for Masonry Structures
- B. ACI 304R: Guide for Measuring, Mixing, Transporting, and Placing Concrete
- C. ASTM C91/C91M: Standard Specification for Masonry Cement
- D. ASTM C150/C150M: Standard Specification for Portland Cement
- E. ASTM C207: Standard Specification for Hydrated Lime for Masonry Purposes
- F. ASTM C270: Standard Specification for Mortar for Unit Masonry
- G. MDOT - Michigan Department of Transportation Standard Specifications for Construction, latest edition

1.04 REFERENCE SPECIFICATIONS

- A. The latest or current ACI Standards, and the "Specifications for Masonry Structures," ACI-530.1, shall govern all mortar and grout work except where otherwise specified herein.

1.05 SUBMITTALS

- A. Manufacturer's literature shall be submitted for premixed materials.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be stored and handled as recommended in ACI 304R .
- B. When cement is stored in the open, a floor at least 6 inches above the ground and a waterproof covering shall be provided and so placed as to insure runoff in case of rain. At the time of its use the cement shall be free from lumps. Cement sacks shall be thoroughly shaken when emptying sacks into the batch. Cement salvaged by the Contractor by cleaning sacks mechanically or otherwise, or from discarded sacks of cement shall not be used.
- C. The aggregates are to be furnished, stocked and handled so that uniformity of grading will be obtained at the time of batching. The area on which stockpiles are to be built shall be thoroughly cleaned of all foreign materials and shall be firm, reasonably level, and well drained. No aggregates which have become intermixed prior to proportioning shall be used.
- D. The premixed mortar or grout shall be stored and handled in strict accordance with the manufacturer's recommendations.

1.07 JOB CONDITIONS

- A. Environmental requirements relative to temperature for mixing and placing mortar or grout shall be in accordance with Part 2 of this Section.

PART 2 PRODUCTS

2.01 PREMIXED MORTAR OR GROUT

- A. Premixed mortar or grout shall be a complete packaged mixture to which water is to be added at the job site. Mortar and grout shall be nonshrink, nonstaining.

2.02 CEMENT

- A. The type of cement to be used shall be as indicated on the Plans or as specified below:
 - 1. Portland cement: Types I, IA or III: ASTM C150/C150M.
 - 2. Masonry cement: Type N, S, or M: ASTM C91/C91M.
 - 3. Mortar: Type M or S: ASTM C270.
 - 4. Hydrated lime: Type S: ASTM C207.

2.03 AGGREGATE

- A. Fine aggregate: Type 2MS, per MDOT Section 902.08

2.04 ADMIXTURES

- A. Integral waterproofing compounds, accelerators, retarders or other admixtures not definitely mentioned in the Specifications shall not be used in mortar or grout without the approval of the Engineer. Use no admixtures containing calcium chloride.

2.05 WATER

- A. Water shall be free from oil, acid, alkali, organic matter, and any other deleterious substances. Water approved by the State Board of Health may be used without testing. Water from other sources shall be tested before using.

2.06 MIXES

- A. General:
 - 1. Water shall be added to premixed mortar or grout in strict accordance with manufacturer's recommendations to prepare a stiff or plastic mix, depending on workability needed for application.
 - 2. For job mixed mortar or grout, a mixture of cement, aggregate, water and admixtures, if required, shall be combined in proportions meeting the requirements of MDOT Section 702 to produce mortar or grout for the use indicated on the Plans and as specified herein.
 - 3. For job mixed mortar and grout the cement and aggregate shall be proportioned by weight for cubic yard (or cubic meter) batches or by volume for small batches. Shovel method of volume measuring will not be permitted. When materials are measured by volume, water shall be added in amounts necessary for the consistency required for the Work.

- B. Standard Mortar and Grout

MDOT Designation	General Use
R-1 (Grout)	Bond or Primer Coat
R-2 (Mortar)	Laying masonry units, caulking pipe joints, general patching
R-3 (Mortar)	Filler between slope protection and riprap

- C. Non-Shrinking Mortar and Grout

1. Unless otherwise indicated on the Plans or Specifications, the cement shall be Portland Type I. The materials shall be proportioned by weight, with water added in amounts to obtain necessary consistency required for the Work.

MDOT Designation

Type H-1

General Use

Joints in precast structural members, spaces under leveling plates, supporting structures, grouting dowels, and anchor bolts

2.07 MIXING

- A. The minimum mixing time shall be five (5) minutes. Consistency of mortar shall be adjusted to provide the best workability. If the mortar begins to stiffen from evaporation or absorption of a part of the mixing water, the mortar shall be retempered by adding water and remixing. Consistency of the grout shall be such that at the time of placement, it will completely fill all spaces intended to receive grout.

2.08 MIX TEMPERATURE

- A. The temperature of the mix shall be between 40 to 120 degrees Fahrenheit.

2.09 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers of premixed, nonshrink, nonmetallic grout include:
 1. Sonneborn "SonogROUT"
 2. L&M Construction Chemicals "DuragROUT"
 3. Masters Builders "Masterflow 713"
 4. Five Star Products "Five Star Grout"
 5. Engineer-approved equal.

PART 3 EXECUTION

3.01 VERIFICATION

- A. Contractor shall verify the elevation of structural member or equipment bases to be grouted, and/or location of anchoring devices as indicated on the Plans or approved Shop Drawings.

3.02 PREPARATION

- A. Surfaces to receive mortar or grout shall be prepared as follows, unless otherwise specified:
 1. Remove laitance down to sound concrete.
 2. Surface shall be properly wet cured, being free of chemical curing compound, oil, grease, dirt and loose particles.
 3. Clean bolt and/or tie holes, anchor bolts and underside of bearing plates.
 4. Saturate concrete including holes prior to grouting.
- B. When a premixed mortar or grout is used, preparation of surfaces shall be in strict accordance with manufacturer's recommendations.

3.03 INSTALLATION - GENERAL

- A. Mortar and grout shall be used within 2-1/2 hours of initial mixing. No mortar or grout shall be used after it has begun to set.
- B. Premixed mortar or grout shall be used in strict accordance with the manufacturer's recommendations.

3.04 INSTALLATION OF MASONRY UNITS

- A. Mortar joints to bond brick or block shall be no less than 3/8 inch and no greater than 1/2 inch thick. The surface of the joint shall be struck to be flush with the masonry units.

3.05 SURFACE FINISHING APPLICATIONS

- A. Nonshrink mortar shall be thoroughly compacted into all voids, holes, honeycombs, or other defects in the finish surface of concrete. The mortar shall be flush with the surrounding concrete and matching in color and texture.

3.06 GROUTING ANCHORING DEVICES

- A. Nonshrink, nonstaining mortar or grout shall be placed in the hole provided, then the anchoring device or dowel shall be set into the grout filled hole. The surface shall be flush with the surrounding concrete. No pressures or loads shall be applied to the anchoring device until the mortar or grout has attained its ultimate strength.

3.07 GROUTING PLATES AND STRUCTURAL MEMBERS

- A. Thoroughly fill the area between the foundation and plate or member with nonshrink, nonmetallic grout. If required, immediately set shims and align plate or member as required. After the grout has set hard remove forms or shims and finish with a capping mortar.

3.08 COLD WEATHER WORK

- A. General:
 - 1. No masonry units, mortar or grout Work shall be placed in contact with frozen surfaces. No mortar or grout Work shall be performed when the mean air temperature is below 40 degrees Fahrenheit unless the materials are heated and/or the Contractor provides adequate protection of the Work. All Work shall be protected against freezing for no less than 48 hours after placement.
 - 2. Application of heat to the materials shall be made in a manner which will keep these materials clean and free from injurious substances.
- B. Air Temperature 40 to 32 degrees Fahrenheit:
 - 1. Sand or mixing water shall be heated to produce mortar temperatures between 40 to 120 degrees Fahrenheit. Heating of either of the ingredients shall be to a minimum 70 to 160 degrees Fahrenheit. The ideal mortar temperature should be 70 to 80 degrees Fahrenheit.
- C. Air Temperature 32 to 25 degrees Fahrenheit:
 - 1. Sand and mixing water shall be heated to produce mortar temperatures between 40 to 120 degrees Fahrenheit. Maintain temperatures of mortar on boards above freezing. Heat sand and water to a minimum 70 to 160 degrees Fahrenheit.
- D. Air Temperature 25 to 20 degrees Fahrenheit:
 - 1. Sand and mixing water shall be heated to produce mortar temperatures between 40 to 120 degrees Fahrenheit. Maintain mortar temperatures on boards above freezing. Salamanders or other sources of heat shall be used on both sides of interior bearing walls under construction and on the inside of all exterior walls. Windbreaks shall be employed when wind is in excess of 15 mph.
- E. Air Temperature 20 degrees Fahrenheit and Below:
 - 1. Sand and mixing water shall be heated to provide mortar temperatures between 40 to 120 degrees Fahrenheit. Enclosure and auxiliary heat shall be provided to maintain air temperature above 40 to 120 degrees Fahrenheit. Temperature of units when laid shall be not less than 20 degrees Fahrenheit.

END OF SECTION



SECTION 04 05 13 MASONRY MORTARING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Contractor shall furnish tools, equipment, materials, and supplies and shall perform labor required to complete the mortar for unit masonry construction and masonry repointing work as indicated on the Contract Drawings and specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

1.03 REFERENCE STANDARDS

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
- B. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar
- C. ASTM C150/C150M - Standard Specification for Portland Cement
- D. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes
- E. ASTM C270 - Standard Specification for Mortar for Unit Masonry
- F. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar

1.04 SUBMITTALS

- A. Product Data:
 - 1. Submit manufacturer's instructions, product data and MSDS.
 - 2. Submit mortar mix design as well as data indicating proportion or property specifications used for each type of mortar including Portland cement, lime sand and coloring admixtures, if any.
- B. Samples:
 - 1. Submit cured samples of colored mortar to Architect for initial review.
- C. Manufacturer's Certificate:
 - 1. Certify that products meet or exceed specified requirements.
- D. Test Reports:
 - 1. Submit test reports for mortar indicating conformance with ASTM C270 property specifications.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver prepackaged, dry-blended mortar mix to project site in clearly labeled plastic-lined bags each bearing the name and address of the manufacturer, Production Codes or Batch Numbers, and color or formula numbers. Individual bag weight is approximately 50 pounds.
- B. Store mortar off the ground and in accordance with manufacturer's instructions to prevent contamination by foreign materials. Maintain packaged materials in a clean, dry state protected against weather, traffic and foreign materials.

1.06 QUALITY ASSURANCE

- A. Cementitious materials, aggregates and color admixtures are to be blended and packaged under factory-controlled conditions, requiring only the addition of water on site.
- B. Use approved mix designs and single source all aggregates, cement, lime and color admixtures to assure maximum consistency.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather Requirements:
- B. When ambient air temperature is below 40 degrees Fahrenheit, heat mixing water to maintain mortar temperature between 40- and 120-degrees Fahrenheit until placed. If necessary, store materials in a heated area to allow mortar temperatures to remain above 40 degrees Fahrenheit throughout the placement and finishing cycle.
 - 1. Subject to written approval of the mortar manufacturer, and in accordance with their written dosage instructions, add the recommended quantity and type of non-chloride accelerating admixture when temperatures are below 32 degrees Fahrenheit.
- C. Hot Weather Requirements:
 - 1. Under hot, dry and windy conditions use proper pre-dampening, protection and moist curing procedures as required to keep mortar moist for 72 hours following final tooling.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Portland cement: ASTM C150/C150M Type I, grey or white as required to match original mortar. Fly ash, slag and pozzolans are not permitted as substitutes for Portland cement.
- B. Hydrated Lime: ASTM C207 Type S, incorporated as a finely divided powder in uniform particle size, free of lumps, flakes or other inconsistencies.
- C. Mortar Aggregate: ASTM C144 Natural sand blend, rounded to sub-angular in shape, washed, screened and dried, with zero or near zero -270 crystalline silica content. Aggregate to be selected to match the color and texture of the original mortar aggregates as closely as possible while remaining in compliance with ASTM C144 grading and soundness requirements.
- D. Mortar Colors: Inorganic mineral oxides meeting the requirements of ASTM C797, at levels not to exceed 10% on cement weight, except for carbon black, which may not exceed 2% on cement weight.
- E. Admixtures: No admixtures shall be used without the express written consent of the Architect and the mortar manufacturer. Calcium chloride is not permitted in any mortar. Admixtures containing more than 0.1% chloride ions are not permitted.
- F. Water: Potable, free of deleterious quantities of materials which may affect mortar performance or appearance.

2.02 MIXING MORTAR

- A. Mortar shall be preblended, pre-colored and prepackaged under controlled factory conditions. Ingredients are to be batched within plus or minus 1% accuracy, except pigments which shall be weighed to a precision of 0.01%.
 - 1. Mortar shall conform to the minimum property requirements given in Table II of ASTM C270, based on 28-day laboratory testing only. Mortar type shall be as selected, based on the following criteria:
 - a. Type M: 2500 psi min.; for pavements and walls in contact with earth or below grade.
 - b. Type S: 1800 psi min.; for chimneys, parapets and load-bearing masonry constructions.
 - c. Type N: 750 psi min.; for general repointing of walls
 - d. Type O: 350 psi min.; for repointing of softer masonry or masonry where original mortar design mix was Type O.
 - e. Type K: High lime mortar; for repointing of historic masonry or structures constructed with low strength brick or sandstone.

- f. Straight lime Mortar "L": No Portland cement in mix; for masonry buildings constructed prior to 1900 and incorporating lime mortars without Portland cement.
- 2. Thoroughly mix mortar in quantities needed for immediate use, using mechanical mortar mixer or paddle mixer. Add approximately half the required water and mix mortar for a minimum of 5 minutes, and then slowly add water as needed to reach the desired working consistency. Do not exceed mix time of 10 minutes.
- 3. Add only clean, potable water at the project site. Do not add cement, lime, bonding agents, coloring admixtures, set accelerators, plasticizers, air entraining admixtures or other materials unless specifically authorized in writing.
- 4. Use a batch type mixer in accordance with ASTM C270.
- 5. Use of ready-mix mortar (ASTM C1142) is not acceptable.
- 6. Use mortar within 1-1/2 hours of mixing, after which unused mortar is to be discarded. This period shall be reduced to 30 minutes in hot weather.
 - a. Retempering is allowed in accordance with ASTM C270 if it is demonstrated that rettempering does not negatively affect color consistency.
 - b. Retempering is to be used to replace water lost to evaporation only.
 - c. Do not retemper mortars which have begun to set.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Pre-dampen masonry surfaces to receive repointing mortar for a minimum of 20 minutes prior to mortar placement.
- B. Masonry surfaces should be saturated but free of excess or standing water at time of mortar placement.
- C. Fill mortar into joints in 1/4 inch "lifts". Start by filling deeper sections, compacting each layer, packing it into the rear and corners of the joint.
- D. As soon as the mortar reaches "thumbprint" hardness, apply the next layer at 1/4 inch thickness. A minimum of 2 layers are required.
- E. When final layer is thumbprint hard, tool to specified profile. Match to adjacent, existing profile or to original profile as instructed.
- F. To avoid changing the appearance of the building, it may be necessary to slightly recess the mortar from the masonry surface. Do not flush fill joints in worn masonry if this results in a visually wider joint than the original.
- G. Remove excess mortar and smears using a stiff natural bristle brush and clean water before it has set.
- H. Wet cure tooled joints as required by lightly misting with clean water periodically for up to 3 days following installation.
 - 1. Type K and straight Lime mortars always require 3 days wet cure.
 - 2. Types O and N may require shorter wet cure periods, depending on temperature, humidity, wind and suction of the masonry.
 - a. Misting should be performed every hour or two on the first day, as required to maintain the mortar in a wet condition, and this may be reduced to every three or four hours on subsequent days.
- I. Final Cleaning:

1. Allow mortar to fully cure for a minimum of 28 days before final cleaning. Only low pressure should be used to avoid damaging newly repointed joints.

END OF SECTION



SECTION 04 20 00 UNIT MASONRY

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Contractor alone shall be fully responsible for the design, strength, safety and adequacy of shoring, bracing and methods of construction, and for the strength, consistency, finish and general quality of masonry.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 04 05 13 - Masonry Mortaring
- B. Section 05 50 00 - Metal Fabrications
- C. Section 081000

1.03 SUBMITTALS

- A. Product Data:
 - 1. Product data for each different masonry unit, accessory, and other manufactured product indicated.
- B. Shop Drawings:
 - 1. Shop drawings for stone trim in form of cutting and setting drawings showing sizes, profiles, and locations of each stone trim unit required.
 - 2. Shop drawings for reinforcing detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315, Details and Detailing of Concrete Reinforcing, showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.
- C. Test Reports:
 - 1. Material test reports from a qualified independent testing laboratory employed and paid by the Contractor indicating and interpreting test results relative to compliance of the following proposed masonry materials with requirements indicated:
 - a. Mortar complying with property requirements of ASTM C270.
 - b. Grout mixes. Include description of type and proportions of grout ingredients.
 - c. Masonry units.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry materials to project in undamaged condition.
- B. Store and handle masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air-dried condition.
- C. Store cementitious materials off the ground, under cover, and in dry location.
- D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- E. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.

1.05 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide unit masonry that develops the following installed compressive strengths (f'm):
 - 1. For concrete unit masonry: f'm - 1500 psi

1.06 PROJECT CONDITIONS

- A. Protection of Masonry: During erection, cover tops of walls, projections, and sill with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
 - 2. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Remove immediately any grout, mortar, and soil that comes in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings.
- D. Cold-Weather Construction: Comply with referenced unit masonry standard for cold-weather construction and the following:
 - 1. Do not lay masonry units that are wet or frozen.
 - 2. Remove masonry damaged by freezing conditions.
- E. Hot-Weather Construction: Comply with referenced unit masonry standard.

PART 2 PRODUCTS

2.01 GENERAL

- A. Comply with referenced unit masonry standard and other requirements specified in this Section applicable to each material indicated.

2.02 CONCRETE MASONRY UNITS

- A. Comply with requirements indicated below applicable to each form of concrete masonry unit required.
- B. Provide special shapes where indicated and as follows:
 - 1. For lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.
 - 2. Square-edged units for outside corners, except where indicated as bullnose.
- C. Size: Provide concrete masonry units complying with requirements indicated below for size that are manufactured to specified face dimensions within tolerances specified in the applicable referenced ASTM specification for concrete masonry units.
 - 1. Concrete Masonry Units shall be manufactured to specified dimensions of 3/8 inch less than nominal widths by nominal heights by nominal lengths indicated on drawings.
- D. Provide Type II, non-moisture-controlled units.
- E. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.
- F. Hollow Load-Bearing Concrete Masonry Units:
 - 1. Standard: ASTM C90.

2. Unit Compressive Strength: Provide units with minimum average net area compressive strength not less than the unit compressive strengths required to produce concrete unit masonry construction of compressive strength indicated.
 3. Weight Classification: Lightweight.
- G. Solid Load-Bearing Concrete Masonry Units:
1. Standard: ASTM C145.
 2. Unit Compressive Strength: Provide units with minimum average net area compressive strength not less than the unit compressive strengths required to produce concrete unit masonry construction of compressive strength indicated.
 3. Weight Classification: Lightweight.

2.03 MORTAR AND GROUT MATERIALS

- A. Portland Cement: Comply with ASTM C150. Type I or II; Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce required mortar color.
- B. Masonry Cement: Comply with ASTM C91. For colored aggregate mortars use masonry cement of natural color or white as required to produce mortar color indicated.
- C. Ready-Mixed Mortar: Cementitious materials, water, and aggregate complying with requirements specified in this article, combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C1142.
- D. Hydrated Lime: Comply with ASTM C207, Type S.
- E. Aggregate for Mortar: Comply with ASTM C144, except for joints less than 1/4 inch use aggregate graded with 100 percent passing the No. 16 sieve.
- F. Aggregate for Grout: Comply with ASTM C404.
- G. Water: Clean and potable.
- H. Available Products: Subject to compliance with requirements.

2.04 REINFOR

- A. General: Provide reinforcing steel complying with requirements of referenced unit masonry standard and this article.
- B. Steel Reinforcing Bars:
 1. Billet steel complying with ASTM A615.
 2. Epoxy-coated billet steel complying with ASTM A 615 and ASTM A775.
- C. Deformed Reinforcing Wire: Comply with ASTM A496.
- D. Plain Welded Wire Fabric: Comply with ASTM A185.
- E. Deformed Welded Wire Fabric: Comply with ASTM A497.

2.05 JOINT REINFORCEMENT

- A. General: Provide joint reinforcement complying with requirements of referenced unit masonry standard and this Section, formed from the following:
 1. Stainless steel wire, Type 304 complying with ASTM A 580, for exterior walls; and galvanized carbon steel wire, coating class as required by referenced unit masonry standard, for interior walls.
- B. Description: Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:

1. Wire Diameter for Side Rods: 0.1875 inch.
2. Wire Diameter for Cross Rods: 0.1875 inch.
- C. Subject to compliance with requirements, provide joint reinforcement by one of the following manufacturers:
 1. AA Wire Products Co.
 2. Dur-O-Wal, Inc.
 3. Heckman Building Products, Inc.
 4. Hohmann & Barnard, Inc.
 5. Masonry Reinforcing Corp. of America.
 6. National Wire Products Industries.
 7. Southern Construction Products, Inc.

2.06 TIES AND ANCHORS

- A. General: Provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of referenced unit masonry standard and of this article.
- B. Galvanized Carbon Steel Wire: ASTM A82, coating class as required by referenced unit masonry standard for application indicated.
- C. Galvanized Carbon Steel Wire: Coating class shall be as required by referenced unit masonry standard for wire ties and anchors in interior walls and shall comply with ASTM A82, unless otherwise indicated.
- D. Stainless Steel Wire: Type 304, for wire ties and anchors in exterior walls complying with ASTM A580,
- E. Stainless Steel Wire: Type 304 with a diameter of 0.1875 inch and in compliance with ASTM A580,
- F. Steel Plates and Bars: Hot-dip galvanized to comply with ASTM A123 or ASTM A153, Class B3, as applicable to size and form indicated.
- G. Subject to compliance with requirements, provide products by one of the following manufacturers:
 1. AA Wire Products Co.
 2. Dur-O-Wal, Inc.
 3. Heckman Building Products, Inc.
 4. Hohmann & Barnard, Inc.
 5. Masonry Reinforcing Corp. of America.
 6. National Wire Products Industries.
 7. Southern Construction Products, Inc.

2.07 BENT WIRE TIES

- A. Contractor shall furnish and install individual units prefabricated from bent wire to comply with requirements indicated below:
 1. Tie Shape for Hollow Masonry Units Laid with Cells Vertical: Rectangular with closed ends and not less than 4 inches wide.
 2. Tie Shape for Solid Masonry Unit Construction: Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches long.

3. Type for Masonry Where Coursing Between Wythes Align: Unit ties bent from one piece of wire.
4. Type for Masonry Where Coursing Between Wythes Does Not Align: Adjustable ties composed of two parts, one with pintles, the other with eyes, maximum misalignment 1-1/4 inches.

2.08 MISCELLANEOUS ANCHORS

- A. Unit Type Masonry Inserts in Concrete: Cast iron or malleable iron inserts of type and size indicated or required.
- B. Dovetail Slots: Furnish dovetail slots, with filler strips, of slot size indicated, fabricated from 0.0336-inch (22-gage) sheet metal.

2.09 POST-INSTALLED ANCHORS

- A. Anchors shall be capable of sustaining, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E488, conducted by a qualified independent testing laboratory.
 1. For cast-in-place and post-installed anchors in concrete, anchors shall be capable of sustaining, without failure, a load equal to 4 times loads imposed by masonry.
 2. For post-installed anchors in grouted concrete masonry units, anchors shall be capable of sustaining, without failure, a load equal to 6 times loads imposed by masonry.
- B. Corrosion Protection:
 1. Carbon steel components zinc-plated to comply with ASTM B633, Class Fe/Zn 5 (5 microns) for Class SC 1 service condition (mild).
 2. Stainless steel components complying with ASTM F593 and ASTM F594, Group 1 alloy 304 or 316 for bolts and nuts; alloy 304 or 316 for anchor.

2.10 EMBEDDED FLASHING MATERIALS

- A. Sheet metal flashing shall be fabricated in accordance with the requirements specified in 07 6000, Flashing and Sheet Metal, and the following:
 1. Stainless Steel: 0.0156 inch (28 gage) thick.
- B. Vinyl sheet flashing shall be flexible sheet flashings especially formulated from virgin polyvinyl chloride with plasticizers and other modifiers to remain flexible and waterproof in concealed masonry applications, black in color and of thickness indicated below:
 1. Thickness: 30 mils.
 2. Application: Use where flashing is fully concealed in masonry.

2.11 MISCELLANEOUS MASONRY ACCESSORIES

- A. Nonmetallic Expansion Joint Strips: Pre-molded filler strips complying with ASTM D1056, Type 2 (closed cell), Class A (cellular rubber and rubber-like materials with specific resistance to petroleum base oils), Grade 1 (compression-deflection range of 2-5 psi), compressible up to 35 percent, of width and thickness indicated, formulated from the following material:
 1. Neoprene.
 2. Urethane.
 3. Polyvinyl chloride.
- B. Preformed Control Joint Gaskets: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall:
 1. Styrene-Butadiene Rubber Compound: ASTM D 2000, Designation 2AA-805.
 2. Polyvinyl Chloride: ASTM D 2287, General Purpose Grade, Type PVC-65406.

- C. Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Plastic Weep Hole/Vent: One-piece flexible extrusion manufactured from ultraviolet-resistant polypropylene co-polymer, designed to weep moisture in masonry cavity to exterior, sized to fill head joints with outside face held back 1/8 inch from exterior face of masonry, in color selected from manufacturer's standard.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine conditions for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry. For the record, prepare a written report listing conditions detrimental to performance of unit masonry.
- B. Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.

3.02 INSTALLATION

- A. Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.
- B. Build chases and recesses as shown or required to accommodate items specified in this and other Sections of the Specifications. Provide not less than 8 inches of masonry between chase or recess and jamb of openings and between adjacent chases and recesses.
- C. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.
- D. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting where possible.
- E. Match coursing, bonding, color, and texture of new masonry with existing masonry where indicated.

3.03 MORTAR BEDDING AND JOINTING

- A. Lay hollow concrete masonry units as follows:
 - 1. With full mortar coverage on horizontal and vertical face shells.
 - 2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
 - 3. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.
- B. Cut joints flush for masonry walls to be concealed or to be covered by other materials, unless otherwise indicated.

3.04 HORIZONTAL JOINT REINFORCEMENT

- A. General: Provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcing a minimum of 6 inches.
- B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.
- C. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, pipe enclosures, and other special conditions.

3.05 ANCHORING MASONRY TO STRUCTURAL MEMBERS

- A. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.
- B. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.
- C. Space anchors as indicated, but not more than 24 inches on center vertically and 36 inches on center horizontally.

3.06 MOVEMENT (CONTROL AND EXPANSION) JOINTS

- A. General: Install control and expansion joints in unit masonry where indicated. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.
- B. Form control joints in concrete masonry as follows:
 - 1. Fit bond breaker strips into hollow contour in ends of block units on one side of control joint. Fill the resultant core with grout and rake joints in exposed faces.
 - 2. Install preformed control joint gaskets designed to fit standard sash block.
 - 3. Install special shapes designed for control joints. Install bond breaker strips at joint. Keep head joints free and clear of mortar or rake joint.
- C. Form expansion joints in brick made from clay or shale as follows:
 - 1. Build flanges of metal expansion strips into masonry. Lap each joint 4 inches in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints, if any.
 - 2. Build flanges of factory-fabricated expansion joint units into masonry.
 - 3. Build in joint fillers where indicated.
 - 4. Form open joint of width indicated but not less than 3/8 inch for installation of sealant and backer rod specified in Division 7 Section "Joint Sealers." Maintain joint free and clear of mortar.
- D. Build in horizontal pressure-relieving joints where indicated; construct joints by either leaving an air space or inserting nonmetallic 50 percent compressible joint filler of width required to permit installation of sealant and backer rod specified in Division 7 Section "Joint Sealers." Locate horizontal pressure-relieving joints beneath shelf angles supporting masonry veneer and attached to structure behind masonry veneer.

3.07 LINTELS

- A. Install steel lintels where indicated.
- B. Provide masonry lintels where shown and wherever openings of more than 1'-0" for brick size units and 2'-0" for block size units are shown without structural steel or other supporting lintels.
- C. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.08 FLASHING/WEEPING HOLES

- A. Install embedded flashing in masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in the wall, in accordance with Section 07 6000.
 - 1. Prepare masonry surfaces so that they are smooth and free from projections that could puncture flashing.
 - 2. Place through-wall flashing on sloping bed of mortar and cover with mortar.
 - 3. Seal penetrations in flashing with adhesive/sealant/tape as recommended by flashing manufacturer before covering with mortar.

4. Install reglets and nailers for flashing and other related construction where shown to be built into masonry.
- B. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashings and as follows:
 1. Form weep holes with by keeping head joints free and clear of mortar; spacing holes 24 inches on center.
 2. In insulated cavities/air spaces cover cavity/air space side of open weep holes with copper or plastic insect screening before placing insulation in cavity.

3.09 INSTALLATION OF REINFORCED UNIT MASONRY

- A. General: Install reinforced unit masonry to comply with requirements of referenced unit masonry standard.
- B. Temporary Formwork: Construct formwork and shores to support reinforced masonry elements during construction. Construct formwork to conform to shape, line, and dimensions shown. Make sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
- C. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.
- D. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

3.10 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.
- B. Pointing:
 1. During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar.
 2. Point-up all joints including corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.
- C. Final Cleaning:
 1. After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - a. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - b. Test cleaning methods on sample wall panel; leave 1/2 panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - c. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
 - d. Wet wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
 - e. Clean brick by means of bucket and brush hand-cleaning method using the following masonry cleaner:
 - 1) Job-mixed detergent solution.
 - 2) Job-mixed acidic solution.

- 3) Proprietary acidic cleaner; apply in compliance with directions of acidic cleaner manufacturer.
- f. Protection: Provide final protection and maintain conditions that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

END OF SECTION



SECTION 31 11 00 CLEARING AND GRUBBING

PART 1 GENERAL

1.01 SCOPE

- A. This section includes clearing and grubbing work indicated on the Plans and as required, complete with cutting and removal of trees, shrubs, vegetation, stumps, logs, brush, roots and undergrowth, and disposal of materials.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 57 13 - Temporary Erosion and Sediment Control
- C. Section 01 89 00 - Site Construction Performance Requirements
- D. Section 31 22 00 - Grading
- E. Section 31 23 13 - Subgrade Preparation

1.03 SOIL EROSION AND SEDIMENTATION CONTROL

- A. Contractor, at Contractor's expense, shall provide, maintain and remove such temporary and/or permanent soil erosion and sedimentation control measures as specified on the Plans or as determined by the Engineer.
- B. Measures shall prevent surface runoff from carrying excavated materials into the waterways, to reduce erosion of the slopes, and to prevent silting in of waterways downstream of the Work.
- C. Measures should include provisions to reduce erosions by the wind of all areas stripped of vegetation, including material stockpiles.
- D. Comply with requirements of Section 01 57 13.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 CLEARING

- A. Trees, stumps, brush, hedges, and other vegetation occurring within the contract limits as defined on the Plans or as directed by the Engineer shall be cut off flush with the ground and shall be completely removed.

3.02 CLEARING AND GRUBBING

- A. Trees, stumps, brush, shrubs, hedges, roots, corduroy, logs, matted roots, other vegetation and debris occurring within the contract limits as defined on the Plans or as directed by the Engineer, shall be completely removed. Depth of removal shall be in accordance with the requirements specified below.
 - 1. Depth of Removal in Excavation Areas
 - a. For excavation areas within roadways, parking lots, and other paved areas, the trees, stumps, and roots shall be removed to a depth of not less than 12 inches below the subgrade elevation.
 - b. In all other excavation areas, the trees, stumps, and roots shall be removed to a depth of not less than 12 inches below the finish surface elevation.
 - c. Unless otherwise indicated on the Plans or as designated by the Engineer .
 - 2. Depth of Removal in Embankment Areas

- a. Within embankment areas for roadways, parking lots, and other paved areas where the top of finished grade is 5 feet or less in height above the existing ground, the trees, stumps, and roots shall be removed to a depth of not less than 12 inches below the existing ground.
- b. Within embankment areas for roadways, parking lots, and other paved areas where the top of finished grade is more than 5 feet in height above existing ground, the trees and stumps shall be cut off flush with the existing ground surface.
- c. For embankment areas other than roadways, parking lots, and other paved areas, the trees and stumps shall be cut off flush with the existing ground surface,
- d. Unless otherwise indicated on the Plans or as designated by the Engineer.

3.03 SELECTIVE CLEARING

- A. Selective clearing shall consist of removing and disposing of dead, diseased, poorly formed, or otherwise undesirable trees, undergrowth, stumps, uprooted trees and debris. Trees to be removed will be marked and the area where the undergrowth is to be removed will be indicated on the Plans or designated by the Engineer.
- B. Selective Clearing, Type I
 - 1. Trees and stumps shall be cut off at an elevation not more than 4 inches above the existing ground level.
- C. Selective Clearing, Type II
 - 1. Trees and stumps shall be chipped or ground down to an elevation approximately 4 inches below proposed ground level.

3.04 REMOVAL OF TREES, STUMPS, AND OTHER VEGETATION

- A. Where trees cannot be felled without danger to traffic or injury to other trees, structures or property, they shall be cut down in sections. Removal of stumps and roots may be accomplished by the use of a shredding machine meeting the approval of the Engineer.

3.05 REMOVING CORDUROY

- A. Logs, stumps, poles, brush, and other unsatisfactory material occurring in the contract limits at or below the surface of the ground and within the depth of 4 feet below the proposed plan grade shall be removed and shall be disposed of by the Contractor.
- B. When material is disposed of outside of the contract limits, disposal shall be as specified in Section 01 89 00.
- C. Burial of trees, stumps and other vegetation, will not be permitted, except at disposal areas indicated on the Plans or as determined by the Engineer. Trees and stumps buried in these areas shall have a minimum cover of 2 feet.

3.06 HOLES AND TRENCHES

- A. Holes and trenches remaining after the clearing or grubbing operations in embankment areas, shall have the sides broken down or leveled, and shall be refilled with acceptable material.
 - 1. Material shall be moistened and properly compacted in layers by tampers or rollers to the density required under roadways, parking areas, and other special areas, as determined by the Engineer.
 - 2. The same construction procedure shall be applied to all holes and trenches remaining in excavation areas where the depth of holes exceeds the depth of proposed excavation.

3.07 SALVAGING TIMBER

- A. Trees required to be removed and having a diameter of 4 inches or more are classed as merchantable timber. On right-of-way, fee simple, merchantable timber shall become the property of the Contractor, unless otherwise specified in the Contract Documents.

1. When such material is placed outside of the right-of-way, the Contractor shall obtain and provide the Engineer with written permission from the property owner on which the timber is to be placed.
- B. Merchantable timber to be removed from areas outside of right-of-ways, fee simple, shall be cut and piled for the use of property owner, except where the Contractor provides the Engineer with a written agreement from the property owner that he does not desire the salvaged timber.
Where the property owner has signed such an agreement, the salvaged timber will become the property of the Contractor.
- C. When such material is placed outside the contract limits, the Contractor shall obtain and provide the Engineer with written permission from the owner of the property on which the timber is to be placed. Timber from 4 to 12 inches in diameter may be left in full tree lengths or cut to commercial lengths, at the option of the Contractor. Timber 12 inches or more in diameter shall be cut into commercial lengths and piled separately from other timber.

END OF SECTION



SECTION 31 22 00 GRADING

PART 1 - GENERAL

1.01 SCOPE

- A. This Section includes site grading as indicated on the Plans, complete with removing and salvaging topsoil, rough grading, finish grading, adjusting structures, and reconstructing structures.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 57 13 - Temporary Erosion and Sediment Control
- C. Section 01 89 00 - Site Construction Performance Requirements
- D. Section 31 11 00 - Clearing and Grubbing
- E. Section 31 23 13 - Subgrade Preparation
- F. Section 31 23 16 - Structural Excavation and Backfill
- G. Section 32 92 19 - Seeding
- H. Section 32 92 23 - Sodding

1.03 SOIL EROSION AND SEDIMENTATION CONTROL

- A. Contractor, at Contractor's expense, shall provide, maintain and remove such temporary and/or permanent soil erosion and sedimentation control measures as specified on the Plans or as determined by the Engineer.
- B. Measures shall prevent surface runoff from carrying excavated materials into the waterways, to reduce erosion of the slopes, and to prevent silting in of waterways downstream of the Work.
- C. Measures should include provisions to reduce erosion by the wind of all areas stripped of vegetation, including material stockpiles.
- D. Comply with requirements of Section 01 57 13.

1.04 REFERENCE STANDARDS

- A. ASTM D698: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).
- B. Michigan Department of Transportation (MDOT), Standard Specifications for Construction, latest edition.

PART 2 - PRODUCTS

2.01 GRANULAR MATERIAL

- A. Class II granular material meeting the requirements of MDOT Section 902.

2.02 AGGREGATE BASE COURSE

- A. 21AA dense graded aggregate conforming to MDOT Section 902.

PART 3 - EXECUTION

3.01 SITE GRADING

- A. Sites shall be graded as specified on the Plans or as determined by the Engineer. Contractor shall carry out the grading operation to prevent standing water and soil saturation detrimental to structures and improvements.

- B. Provisions shall be made to preserve and protect trees and other vegetation specified on the Plans or determined by the Engineer as not to be removed.

3.02 REMOVING AND SALVAGING TOPSOIL

- A. Topsoil encountered along the route of the construction shall be pushed back and preserved for use in restoration following completion of the construction. The topsoil must remain on each given parcel and lot throughout the Project including the existing road right-of-way adjoining the parcel or lot where it existed.
- B. Removal of topsoil from the Project or movement of topsoil from one portion of the Project for use in another portion of the Project will not be allowed.
- C. If there is insufficient working area, the topsoil may be removed, stockpiled and later replaced on the original lot or parcel. Contractor shall furnish the Engineer with written permission obtained from the property owner of the property on which the topsoil is to be stockpiled, prior to commencing the stockpiling operation.
- D. Topsoil shall be salvaged in an amount equivalent to the quantity required by the Plans. Topsoil salvaged in excess of that required by the Plans or as required by the Engineer will be disposed of by the Contractor at Contractor's expense.
- E. Before removing topsoil, vegetation shall be reduced to a height of approximately 4 inches and all such vegetation and all brush, stones, rocks, and any other objectionable litter or foreign material shall be removed and disposed of before the ground is broken for topsoil removal.
- F. Equipment and methods of operations shall be such as to avoid the lifting of the subsoil. If soil or weather conditions are unsuitable, the Contractor shall cease stripping until stripping can resumed in a suitable manner.
- G. Topsoil shall be removed within the grading limits for cuts and shall be removed to a width and depth specified on the Plans or as determined by the Engineer.
- H. Topsoil shall be stockpiled within the limits of construction in areas designated on the Plans, or in areas out of the way of construction as determined by the Contractor.
- I. Stockpiles shall be located and shaped so as to avoid diversion of storm water runoff, either in or out of the limits of construction, towards buildings, creation of standing water or interference of controlled irrigation.
- J. Contractor shall not place topsoil around trunks and root areas of trees to be preserved.
- K. Topsoil shall be kept separate from other excavated materials that are to be used for embankment and shall be completely removed from any designated area prior to the beginning of regular excavation or placing embankment in the area.
- L. Topsoil stockpiles shall be located as near the original location as possible and no payment will be made for overhaul.
- M. After the completion of construction, the topsoil shall be screened through a 5/8 inch maximum size mesh screen, spread, graded, raked and prepared for seeding or sodding.

3.03 EXISTING SAND ON-SITE

- A. In those instances where the construction takes place within private easements, the sand shall not be removed from each parcel or lot. Sand encountered in existing road right-of-way may be used for construction purposes throughout the Project providing it meets the requirements for the material it is intended to be used for.
- B. Removal of sand from the Project will not be allowed, except for the volume displaced by the new construction.
- C. If there is insufficient working area, the sand may be removed, stockpiled and replaced on the original lot or parcel. Contractor shall furnish the Engineer with written permission obtained from the property owner of the property on which the sand is to be stockpiled, prior to commencing

the stockpiling operations.

3.04 ROUGH GRADING

- A. The site shall be graded as necessary to comply with the Plans or as determined by the Engineer. The subgrade shall be roughly established by cut or fill, approximately parallel to proposed finished grades and to elevations which allow for thickness of topsoil and installation of site or roadway improvements.
- B. In fill areas all debris shall be removed from the area to be filled. Material detrimental to site improvement shall be removed from the site and acceptably disposed of as specified in Section 01 89 00.
- C. Original ground shall be scarified and benched or otherwise treated to provide adequate bond and to prevent slippage of fill.
- D. Fill material shall be free of debris or other detrimental material and shall have a moisture content within 2% optimum moisture when placed. Fill shall be compacted to a density not less than 95% of the maximum unit weight and placed in layers no less than 9 inches and no greater than 15 inches. The maximum unit weight shall be determined by ASTM D698, Method B.
- E. If possible fills or embankments shall be constructed when the ground is frost-free and there is favorable weather. However if winter grading is necessary, all ice and snow shall be removed from the surface of the ground before the fill or embankment is placed.
- F. No frozen material will be allowed in the fill area or in the embankment being constructed.
 - 1. Frozen material on a partially completed fill shall be removed before placing any additional fill. Frozen material shall be stockpiled outside the grading limits until thawed.
 - 2. Thawed material from the stockpiled frozen material may be used in the fill and embankment areas.

3.05 FINISH GRADING

- A. Subgrade shall be smoothed parallel to proposed finished grades and elevations specified on the Plans. Subgrade shall be scarified to assure bond with the topsoil prior to spreading of the topsoil.
- B. Topsoil shall be spread uniformly to provide a smooth, even surface at a finish grade specified on the Plans or acceptable to the Engineer. After spreading, the topsoil shall be compacted lightly as necessary to minimize settlement. Final grades shall not vary more than 0.1 foot from the elevations indicated on the Plans.
- C. Finished grading shall be done when the ground is frost-free and weather is favorable.

3.06 ADJUST STRUCTURES

- A. Structures to be adjusted shall be as called for on the Plans or as indicated by the Engineer. Adjustment of structures shall apply where the elevation of the casting is either raised 12 inches or less, or lowered 6 inches or less.
- B. For Rehabilitation/Resurfacing Projects
 - 1. For structures in existing pavement, the pavement shall be sawcut a minimum of 5-foot by 5-foot unless otherwise shown on the plans.
 - a. For structures in concrete pavement, the structure shall be adjusted, backfilled and compacted as noted below. Six inches of aggregate base course, unless otherwise noted on the plans, shall be placed below the proposed concrete pavement.
 - 1) In areas of new concrete pavement, the concrete pavement around the structure shall be poured integral with the rest of the pavement.

- 2) For resurfacing projects, expansion or epoxy anchored hook bolts shall be placed 18 inches on center around the edges of the existing concrete pavement, unless otherwise shown on the plans. The concrete pavement, minimum 8 inches thick, shall be replaced around the structure to the grade of the adjoining concrete pavement.
- b. For structures in bituminous pavement, the pavement shall not be sawcut until after the bituminous base or leveling courses have been completed. The structure shall be adjusted, backfilled and compacted as noted below.
 - 1) Six inches of aggregate base course, unless otherwise noted on the plans, shall be placed below the proposed pavement. A minimum of 8 inches of concrete pavement, unless otherwise noted on the plans, shall be placed to the elevation of the adjoining bituminous base or leveling courses.
 - 2) Bituminous wearing course around the structure shall be placed integral with the wearing course on the remainder of the project.
- C. For Bituminous Reconstruction or New Construction Projects
 1. The frame and cover on new and existing structures shall be removed and the structure plated prior to placing the bituminous base or leveling courses.
 2. Bituminous base and leveling courses shall be placed over the plated structures.
 3. Prior to placing the bituminous wearing course, the bituminous base and leveling courses shall be sawcut a minimum of 5-foot by 5-foot unless otherwise shown on the Plans. The structure shall be adjusted, backfilled and compacted as noted below.
 4. Six inches of aggregate base course, unless otherwise noted on the Plans, shall be placed below the proposed pavement. A minimum of 8 inches of concrete pavement, unless otherwise noted on the plans, shall be placed to the elevation of the adjoining bituminous base course.
 5. Bituminous wearing course around the structure shall be placed integral with the wearing course on the remainder of the project.
- D. Sawcutting, removal and replacement of concrete and bituminous pavement, and aggregate base course, shall be incidental to the adjusting the structure unless otherwise noted in the Contract Documents.
- E. Existing frame and cover shall be carefully removed and stored, and shall be reinstalled on the same structure, unless a new frame and cover are called for on the Plans.
- F. Brick courses or concrete adjustment rings shall be removed or installed as necessary to adjust the structure's frame and cover to the proper elevation.
- G. Brick or concrete adjustment rings shall be set in mortar or installed as shown on the Plans and as determined by the Engineer.
- H. The outside surface of the new brick or block structures shall receive a masonry plaster coat, a minimum of 1/2 inch thick.
- I. The structure shall be properly backfilled with Granular Material compacted in place, and meeting the approval of the Engineer.
- J. The flow in the entire system shall be maintained, at the Contractor's expense, while performing any part of the Work. Also, the structure shall be cleaned and all unsuitable material shall be disposed of at the Contractor's expense.

3.07 RECONSTRUCT STRUCTURES

- A. Structures to be reconstructed shall be as called for on the Plans or as determined by the Engineer. Reconstruction of structures shall apply where the elevation of the casting must be raised in excess of 12 inches, lowered in excess of 6 inches, or to rebuild portions of the existing structure which are deteriorated.

B. For Rehabilitation/Resurfacing Projects:

1. For structures in existing pavement, the pavement shall be sawcut a minimum of 5-foot by 5-foot unless otherwise shown on the plans.
 - a. For structures in concrete pavement, the structure shall be reconstructed, backfilled and compacted as noted below. Six inches of aggregate base course, unless otherwise noted on the Plans, shall be placed below the proposed concrete pavement.
 - 1) In areas of new concrete pavement, the concrete pavement around the structure shall be poured integral with the rest of the pavement.
 - 2) For resurfacing projects, expansion or epoxy anchored hook bolts shall be placed 18 inches on center around the edges of the existing concrete pavement, unless otherwise shown on the plans. The concrete pavement, minimum 8 inches thick, shall be replaced around the structure to the grade of the adjoining concrete pavement.
 - b. For structures in bituminous pavement, the pavement shall not be sawcut until after the bituminous base or leveling courses have been completed.
 - 1) The structure shall be reconstructed, backfilled and compacted as noted below.
 - 2) Six inches of aggregate base course, unless otherwise noted on the Plans, shall be placed below the proposed pavement. A minimum of 8 inches of concrete pavement, unless otherwise noted on the Plans, shall be placed to the elevation of the adjoining bituminous base or leveling courses.
 - 3) The bituminous wearing course around the structure shall be placed integral with the wearing course on the remainder of the Project.

C. For Bituminous Reconstruction or New Construction Projects:

1. Frame and cover on all new and existing structures shall be removed and the structure plated prior to placing the bituminous base or leveling courses.
 2. Bituminous base and leveling courses shall be placed over the plated structures.
 3. Prior to placing the bituminous wearing course, the bituminous base and leveling courses shall be sawcut a minimum of 5-foot by 5-foot unless otherwise shown on the Plans. The structure shall be reconstructed, backfilled and compacted as noted below. Six inches of aggregate base course, unless otherwise noted on the plans, shall be placed below the proposed pavement.
 4. A minimum of 8 inches of concrete pavement, unless otherwise noted on the plans, shall be placed to the elevation of the adjoining bituminous base course.
 5. The bituminous wearing course around the structure shall be placed integral with the wearing course on the remainder of the Project.
- D. Sawcutting, removal and replacement of concrete and bituminous pavement, and aggregate base course, shall be incidental to the reconstructing the structure unless otherwise noted in the Plans.
- E. The existing frame and cover shall be carefully removed and stored, and shall be reinstalled on the same structure unless a new frame and cover are called for on the Plans.
- F. Existing corbel entrance sections or precast concrete chimney type entrance shall be removed along with any additional brick courses or precast concrete sections necessary to achieve the amount of reconstruction called for on the Plans or as determined by the Engineer.
- G. The necessary brick work and precast concrete sections shall be installed to meet the design grade.

- H. Manhole steps shall be furnished and shall be installed, as necessary, so that maximum spacing is 24 inches. Brick or concrete adjustment rings shall be set in mortar or installed as shown on the Plans and as determined by the Engineer.
- I. The outside surface of the new brick or block structures shall receive a masonry plaster coat, a minimum of 1/2 inch thick. The structure shall be properly backfilled with granular material, compacted in place, and meeting the approval of the Engineer.
- J. The flow in the entire system shall be maintained, at the Contractor's expense, while performing any part of the Work. The structure shall be cleaned and unsuitable material shall be disposed of at the Contractor's expense.

END OF SECTION

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SECTION 31 23 13 SUBGRADE PREPARATION

GENERAL

1.01 SCOPE

- A. This Section includes preparing subgrade for pavement construction complete with excavation, embankments, proof rolling, subgrade undercut and backfill, subgrade stabilization fabric, subbase, right-of-way ditching, right-of-way restoration, field quality control, and appurtenances.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 57 13 - Temporary Erosion and Sediment Control
- C. Section 01 89 00 - Site Construction Performance Requirements
- D. Section 31 11 00 - Clearing and Grubbing
- E. Section 31 22 00 - Grading
- F. Section 31 23 19 - Dewatering
- G. Section 31 35 00 - Slope Protection
- H. Section 32 31 00 - Fences and Gates
- I. Section 32 90 00 - Planting
- J. Section 32 92 19 - Seeding
- K. Section 32 92 23 - Sodding
- L. Section 34 71 13 - Guardrails

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. ASTM D1557: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))
 - 2. ASTM D4491/D4491M: Standard Test Methods for Water Permeability of Geotextiles by Permittivity
 - 3. ASTM D4533/D4533M: Standard Test Method for Trapezoid Tearing Strength of Geotextiles
 - 4. ASTM D4751: Standard Test Methods for Determining Apparent Opening Size of a Geotextile
 - 5. ASTM D4632/D4632M: Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
 - 6. ASTM D6241: Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile- Related Products Using a 50-mm Probe
 - 7. American Association of State Highways and Transportation Officials
 - 8. Michigan Department of Transportation (MDOT), Standard Specifications for Construction, latest edition.

1.04 ALLOWABLE TOLERANCES

- A. Finish subgrade surface shall be shaped to conform to plan grade and cross section within a tolerance of 1 inch in 10 feet.

1.05 SUBMITTALS

- A. Test Reports:
 - 1. Testing lab shall provide the Engineer with two (2) certified copies of the sieve analysis of the backfill material.
 - 2. Testing of the material and the certification of the test results shall be performed by a testing laboratory approved by the Engineer.
 - 3. Testing lab shall provide the Engineer with two (2) certified copies of the compaction and moisture tests of the backfill and subgrade materials.
 - 4. Testing of the materials and the certification of the test results shall be performed by a testing laboratory approved by the Engineer.
- B. Samples:
 - 1. Submit sample of the proposed subgrade stabilization fabric measuring not less than 1 syd in area, and the manufacturer's certification that the proposed fabric meets or exceeds therequirements listed in Part 2 of this Section.
 - 2. Submissions shall be made not later than 10 working days prior to any installation.

1.06 PRODUCT DELIVERY STORAGE AND HANDLING

- A. Geotextile fabric shall be furnished and stored in a wrap that will protect the geotextile from ultraviolet radiation and abrasion. Geotextile shall be covered with the aggregate base as per plan within two (2) weeks of its placement.

1.07 SOIL EROSION AND SEDIMENTATION CONTROL

- A. Contractor shall provide, maintain and remove such temporary and/or permanent soil erosion and sedimentation control measures as specified on the Plans or as determined by the Engineer.
- B. Measures shall prevent surface runoff from carrying excavated materials into the drain, to reduce erosion of the slopes, and to prevent silting in of drain downstream of the Work.
- C. Measures should include provisions to reduce erosions by the wind of areas stripped of vegetation, including material stockpiles.
- D. Comply with requirements of Section 01 57 13.

PRODUCTS

2.01 GRANULAR MATERIALS

- A. Granular Material shall conform to the requirements for Class II granular material as specified in MDOT Section 902.

2.02 AGGREGATE MATERIALS

- A. Aggregate materials, used for undercut backfill shall be crushed limestone, natural aggregate, blast furnace slag, or crushed concrete, meeting the requirements of 21AA, 21A, or 22A as specified in MDOT Section 902. Crushed concrete shall be free of all steel and other deleterious materials.

2.03 SUBGRADE STABILIZATION FABRIC

- A. Subgrade stabilization fabric shall be composed of synthetic fibers formed into a woven fabric. The fibers shall be composed of 85% propylene or ester polymers. The geotextile shall conform to the following requirements listed below:

Property	Test Procedure	Test Result
Grab Tensile	ASTM D4632/D4632M	270 lbs. (min)
Elongation	ASTM D4632/D4632M	15% (min)
Trapezoidal Tear	ASTM D4533/D4533M	100 lbs. (min)
CBR Puncture Strength	ASTM D6241	900 lbs. (min)
Apparent Opening Size	ASTM D4751	40 – 70 U.S. Sieve
Permittivity	ASTM D4491/D4491M	0.05 per sec (min)

2.04 SEPARATOR FABRIC

- A. Furnish geotextiles of either woven or nonwoven polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride. Geotextile must have the minimum required strength values in the weakest primary direction. Contractor may use nonwoven geotextile that is one or a combination of the following:
 1. Needle punched, heat bonded, or resin bonded
- B. Furnish a manufacturer's certified report of test or analysis that shows the geotextile delivered meets the requirements of this specification to the Engineer at least 15 days before use in the Work. Mark the delivered geotextile to clearly identify it with the applicable test report furnished to the Engineer.
- C. If using sewn seams, furnish a field sewn seam sample produced from the geotextile and thread sewn with the equipment that will be used on the project, before incorporating into the work.
- D. Furnish geotextile conforming to the following physical properties:

Test	Method	Value
Minimum grab tensile strength	ASTM D4632/D4632M	170 lb
Minimum puncture strength	ASTM D6241	350 lb
Maximum apparent opening size	ASTM D4751	No. 70 sieve
Minimum permittivity	ASTM D4491/D4491M	0.35 s-1

1. Numerical values represent minimum/maximum average roll values. Average test results from all rolls in a lot must conform to the tabulated values.

EXECUTION

3.01 REMOVING STRUCTURES

- A. Structures and sewers to be removed shall be called for on the Plans or as determined by the Engineer. Removal or abandonment of structures shall be in accordance with Section 01 89 00.

3.02 HOLES

- A. Earth removed during any phase of the excavation or removal operations, resulting in a hole or void, shall be replaced by backfilling to the proposed subgrade with a suitable Granular Material approved by the Engineer.
- B. Material shall be compacted to 95% of its maximum unit weight.
- C. The furnishing, placing and compacting of the backfill material shall be at the Contractor's expense.

3.03 SALVAGING AND STOCKPILING TOPSOIL

- A. Topsoil, within the grading limits for cuts, and where the fill is less than 5 feet in height to the top of proposed road, shall be removed to a depth and width specified on the Plans.
- B. Topsoil from peat and muck areas shall not be removed.

- C. Topsoil salvaged in excess of that required by the Plans will be disposed of by the Contractor at Contractor's expense.
- D. Removing and salvaging topsoil shall be in accordance with Section 31 22 00.

3.04 PREPARING ROADWAY SUBGRADE

- A. Muck, peat and other unsuitable material within the roadway shall be removed, displaced or otherwise treated, as shown on the Plans or as directed by the Engineer.
- B. Deposits of frost heave material within lines 2 feet outside the proposed roadbed shall be removed to a depth of 3 feet below the surface of the earth grade, unless otherwise shown on the Plans or as determined by the Engineer.
- C. Ice and snow shall be removed from the surface of the ground before the embankment is placed.
- D. Muck, peat, frost heave material and other unsuitable material shall be disposed of outside the highway limits or shall be spread uniformly in low places beyond the roadway limits when so approved by the Engineer.
- E. Old road surfacing or gravel, crushed stone, or other nonrigid type surfacing, occurring within the area of the roadbed and underlying proposed embankment less than 1 foot in depth, and which is not to be salvaged and incorporated in the new Work, shall be plowed or scarified full depth, spread and compacted to form a uniform foundation, before any new embankment is placed.
- F. Old pavement and other rigid structures, occurring within the area of the roadbed and underlying the proposed embankment less than 1 foot in depth and which are not to be incorporated into the new Work, shall be broken up, removed and disposed.

3.05 SUBGRADE

- A. Area to be paved shall be excavated and smoothed to the line, grade and cross section as indicated on the Plans.
- B. Subgrade between the lines 2 feet on either side of the proposed edge of pavement or curb shall be compacted to 95% of the maximum unit weight for a depth of 7 inches, by rolling with a roller weighing not less than 10 tons.
- C. Subgrade shall be completed ahead of placing forms or paving a distance equal to the distance of one day's average paving operation. Prior to the paving operation, the subgrade shall be shaped and compacted to the Plan cross section by approved mechanical means.

3.06 PAVEMENT EXCAVATION

- A. Pavement excavation shall consist of Work required to construct the earth grade and its appurtenances true to the lines, grades, and cross sections called for on the Plans and in accordance with these Specifications.
- B. Excavation shall consist of the following items, any of which or all of which may be included or incidental to it; removing trees, stumps, hedges, roots, culverts, sewers, miscellaneous structures, roadway excavation, removing of asphalt or concrete pavements, curbs, curb and gutters, sidewalks, end headers, removing aggregate surfaces, salvaging and stockpiling topsoil, subgrade undercut, excavation for structures, trimming and finishing earth grade, fine grading, right-of-way ditching and restoration, and the disposal of unsuitable material.
- C. Large stones, trees, stumps, brush, shrubs, logs, matted roots, other vegetation and debris occurring between lines 3 feet outside the grading limits or as otherwise shown on the Plans shall be completely removed and properly disposed of as specified in Section 31 11 00.
- D. Earth and other existing materials shall be excavated for the full depth and width of the cross section as shown on the Plans. Material shall be excavated sufficiently for setting of forms or slip-form equipment. Excavation shall be limited to 3,000 linear feet of right-of-way unless additional lengths are requested in writing and approved by the Engineer.

- E. Excess excavated material shall be removed from the project by the Contractor along approved routes to disposal sites approved by the Owner. Disposal of excess excavation and maintenance of the dump sites shall be considered incidental to the price paid for excavation and shall be as specified in Section 01 89 00.

3.07 BORROW EXCAVATION

- A. Materials which are secured from locations outside of the project limits for the purpose of completing embankments and other items, will be considered as borrow excavation. Borrow pits and the materials to be removed therefrom shall be subject to the inspection of the Engineer and shall be secured by the Contractor, unless otherwise provided.
- B. Borrow excavation will be measured by volume in cubic yards compacted in place, based on the neat lines called for on the Plans or as authorized by the Engineer. To facilitate the accurate measurement of borrow quantities, unless otherwise specified in the Contract Documents, the Contractor shall perform all the regular excavation and grading with existing materials for any designated area and the Engineer will cross section these areas prior to the Contractor furnishing and placing the required borrow material. Engineer will then resection the completed area and compute the volume of borrow material in its compacted-in-place state. Borrow material placed beyond the neat lines called for on the Plans or which is not authorized by the Engineer in writing will not be measured and computed as borrow excavations. Measurement of borrow material by truck count will not be acceptable.
- C. Public and private roads used by the Contractor between the source of borrow and the Project shall be maintained by the Contractor, at Contractor's expense, including repairs of any damage caused by Contractor's operations. Also included is the application of a dust palliative when necessary, as determined by the Engineer.

3.08 EMBANKMENTS

- A. Embankments shall be constructed with sound earth. The materials shall be deposited and compacted by either the Twelve Inch Layer Method, or the Controlled Density Method. The Controlled Density Method will be required unless the Twelve Inch Layer Method or some other method is specifically called for on the Plans.
- B. The topsoil shall be stripped from the entire fill area. The depth of the topsoil to be removed shall be as shown on the Plans or as determined by the Engineer. After the topsoil is removed, the entire area upon which the embankment is to be constructed shall be compacted to not less than 90% of the maximum unit weight, to a depth of 9 inches.
- C. Where stones are prevalent, the material shall be carefully placed so that all large stones will be well distributed and the crevices completely filled with smaller stones, earth, sand or gravel so as to form a solid embankment. Rock or fragmental material of such size as would prohibit it from being placed in layers of the specified depth shall not be placed in the embankment. In no case shall stones over 3 inches in diameter be placed within 12 inches of the surface of the earth grade within the areas between lines 2 feet outside of the edges of proposed roadbed.
- D. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material.
- E. Construction requirements for the two (2) methods of placing and compacting embankments are as follows:
 - 1. Twelve-Inch Layer Method:
 - a. The material shall be deposited and spread in layers not more than 12 inches depth, loose measure, parallel to the finished grade and extending to the full width of the embankment. The material shall be deposited by operating the conveying equipment over the layer being placed, insofar as feasible.
 - b. Each layer shall be compacted to not less than 95% of the maximum unit weight as determined at the existing moisture content. The operation of compacting shall be continued until each layer is compacted to the required density for its full width.

2. Controlled Density Method:

- a. The material for the embankment shall be deposited and spread in layers not more than 9 inches in depth, loose measure, and extending to the full width of the embankment, except that granular material may be spread and compacted in layers not more than 15 inches in thickness if the specified density is obtained.
 - b. The material for embankments of 5 feet or less and the bottom 4 feet of embankments of more than four 4 feet above the surface of the ground upon which the embankment is to be constructed shall have not more than the optimum moisture content at the time of compaction.
 - c. The material for that part of the embankment more than 5 feet above the surface of the ground upon which the embankment is to be constructed shall have a moisture content of not greater than 3% above optimum at the time of compaction, except that the moisture content of the top 3 feet of the embankment shall not exceed optimum.
- F. If granular material is used to construct the embankment, it shall be at a moisture content below saturation.
- G. If the material contains an excess of moisture, it shall be dried to the required moisture content before being compacted.
- H. Each layer of material containing the required amount of moisture shall be compacted to not less than 95% of its maximum unit weight, unless otherwise specified, before the succeeding layer is started.
- I. When the original ground upon which the embankment is being placed, or any section of compacted embankment, or the soil in cut sections becomes rutted or distorted by the Contractor's equipment, the method of operation shall be changed to eliminate this condition. Contractor shall reshape and recompact any areas so rutted or distorted at his own expense. This shall be done before any succeeding layers are placed.

3.09 ROUGH GRADING

- A. Contractor shall rough grade as close as possible to finished subgrade leaving a minimum to be removed in fine grading.
- B. Any excavated material removed during grading and stored along the line of Work between curb and sidewalk on improved lawns shall not be left longer than 48 hours. Lawns or otherwise improved areas shall be left in a neat and clean state within the specified 48 hours.
- C. During the excavation operation, including the placing of the subbase, the Work area shall be kept free of water. A dewatering system shall be provided and maintained by the Contractor at Contractor's expense. The dewatering system shall remain in operation until the paving is completed.

3.10 PROOF ROLLING

- A. After removal of topsoil or other overburden and after construction of embankments, proof roll the existing subgrade with six passes of a minimum 15 ton pneumatic-tired roller. Operate the roller in a systematic manner to assure the number of passes over all areas, and at speeds between 2.5 and 3.5 miles per hour.
- B. When proof rolling under structures, one-half of the passes made with the roller shall be in a direction perpendicular to the other passes.
- C. Proof rolling shall be done in the presence of the Engineer. Rutting or pumping shall indicate unsatisfactory material and that material shall be undercut as determined by the Engineer, and replaced with the appropriate fill material.
- D. Perform proof rolling only when weather conditions permit. Do not proof roll wet or saturated subgrades. Materials degraded by proof rolling a wet or saturated subgrade shall be replaced by the Contractor as determined by the Engineer at no cost to the Owner. Notify the Engineer 3 days prior to proof rolling.

3.11 SUBGRADE UNDERCUT EXCAVATION

- A. Unsuitable subgrade excavation shall be the operation of:
 - 1. removing unsuitable soils as determined by the Engineer, below the level of the ground after topsoil has been stripped in fill areas where the embankment is to be 5 feet or less in height to plan grade, or;
 - 2. the removal of unsuitable soils below the subgrade elevation, as determined by the Engineer in cut areas after the subgrade has been established.
- B. In fill areas, after topsoil has been stripped in accordance with this Section, the Engineer will inspect the embankment area to certify the adequacy of the native soils and to determine the extent of any additional excavation of unsuitable soils prior to placing the first lift of the embankment.
- C. In cut areas after the subgrade elevation has been established by the mass grading operation, the Engineer will inspect the subgrade to determine the extent of any additional excavation of unsuitable soils.
- D. The areas excavated of unsuitable material, unless otherwise specified in the Contract Documents, shall be backfilled with nonfrost heaving material similar to the adjacent soil. However, in areas as determined by the Engineer where free water due to seepage is present, the excavation shall be backfilled with MDOT Granular Material, Class II and drainage shall be provided. The backfill shall be compacted to not less than 95% of the maximum unit weight, unless otherwise specified.

3.12 SUBGRADE STABILIZATION FABRIC

- A. Place Subgrade Stabilization Fabric on prepared subgrade or subbase in the manner and at the location as called for on the plans. The fabric shall be laid smooth and free of tension stress, wrinkles or creases.
- B. Fabric strips shall be placed to provide a minimum overlap of 24 inches for each joint. Fabric shall be placed so that the upper strip will overlap the next lower strip.
- C. Should the geotextile be damaged during construction, the torn or punctured section shall be repaired by placing a piece of fabric that is sufficiently large to cover the damaged area plus 24 inches to adjacent undamaged geotextile in all directions.

3.13 GEOTEXTILE SEPARATOR FABRIC

- A. Before placing the geotextile, smooth, shape, and compact the subgrade to the required grade, section, and density. After placing the geotextile on the subgrade, do not allow traffic or construction equipment to travel directly on the geotextile.
- B. Roll the geotextile out on the roadway and pull taut manually to remove wrinkles. Join separate pieces of geotextile by overlapping or sewing. Place the geotextile in the overlapped joints so it overlaps at least 18 inches.
- C. Engineer may require the use of weights or pins to prevent the wind from lifting the geotextile.
- D. After placing, do not expose the geotextile longer than 48 hours before covering.
- E. Place backfill material over the geotextile by back dumping with trucks and leveling with a crawler dozer. Do not use construction equipment that causes ruts deeper than 3 inches. Fill ruts with additional material. Do not smooth ruts without adding additional material. Cover damaged areas with a patch of geotextile using a 3 foot overlap in all directions.

3.14 TRIMMING AND FINISHING EARTH GRADE

- A. After the earth grade has been constructed to the required grade, all stones and rocks more than 3 inches in diameter, appearing on the surface of the subgrade shall be removed.
- B. Earth grade and the subgrade shall be trimmed to the grade called for on the Plans. Subgrade, where a subbase or base course is required, shall be trimmed to the established grade within $\pm$

0.1 foot. Where a subbase or base course is not required, the subgrade shall be trimmed to the established grade within $\pm 3/4$ inch.

- C. The earth grade outside the subgrade shall be trimmed, all irregularities made smooth and the entire site or roadway completed to the required lines, grades, and cross sections. Backslopes and fill slopes shall be finished as either Class A or Class B slopes. Class A slopes shall be required unless otherwise specified in the Contract Documents.
 - 1. Class A Slopes:
 - a. Class A slopes shall be finished to the average slopes shown on the Plans with no variations at any point more than 0.1 foot above or below the established grade measured at right angles to the slopes.
 - 2. Class B Slopes:
 - a. Class B backslopes shall be finished to the average slopes shown on the Plans with no variations at any point more than 0.5 foot above or below the established grade measured at right angles to the slope.
 - b. Class B fill slopes shall be finished to within 0.2 foot of the established grade and cross section from the outside shoulder line for a distance of 3 feet down the slope. The remainder of the completed fill slope shall conform to the requirements for Class B backslopes.
 - 3. The degree of finish of the slopes shall be that obtainable from machine operations. The smoothness of surface finish ordinarily associated with template or string line and hand operations will not be required, but abrupt variations will not be permitted.
 - 4. Debris except sod, leaf mold and rotted forest litter shall be removed and loose clods of earth extending beyond the slope tolerance specified shall be broken or removed.
 - 5. Where waste earth or other surplus material is deposited on fill slopes, the slopes may be flattened or otherwise altered as directed by the Engineer, to produce a uniform cross section which blends with the topography and presents a pleasing appearance.
- D. Where trees or other restrictions do not interfere, the tops of backslopes, bottoms of fill slopes and all other angles in the lines of the cross section shall be rounded to form vertical curves as shown on the Plans or as determined by the Engineer. Transitions in length of vertical curves shall be gradual and shall present a uniform and attractive appearance. When ditches are constructed in peat, vertical curves may be omitted.

3.15 SUBBASE

- A. Granular material for subbase shall be evenly spread and compacted as specified in MDOT Section 301.
- B. The thickness of each layer placed shall be determined by the required density obtained but shall not exceed 15 inches in depth, loose measure.
- C. The subbase shall be constructed to the alignment, grade and cross section shown on the Plans. Should the subgrade at any time prior to or during the placing of the subbase become soft or unstable such that rutting occurs in the subgrade, or if the subgrade material is forced up into the subbase material, the operation shall immediately cease and the mixed material shall be removed and disposed of. The subgrade shall be corrected and new subbase material placed and compacted. This Work shall be considered incidental to the construction of the Project.

3.16 SCARIFY, RE-GRADE AND COMPACT EXISTING SUBGRADE

- A. The existing subgrade (base) shall be scarified to a depth of 9 inches within the limits as shown on the plans. The subgrade shall then be re-shaped to the cross section as shown on the plans and compacted to 95% of its maximum unit weight by rolling with a roller weighing not less than 10 tons.

3.17 ROADWAY DITCHING

- A. Ditching shall be constructed at the locations called for on the Plans or as determined by the Engineer. The ditch may be shaped by machine grading or another method approved by the Engineer to achieve the cross section, line and grade shown on the Plans.
- B. The excess material from the ditch construction shall be disposed of by the Contractor at Contractor's expense.
- C. The ditch section shall be graded to receive topsoil and seed, topsoil and sod, or _____.
 - 1. Topsoil, seed, fertilizer and mulch shall conform to the requirements specified on the Plans and in Section 32 92 19.
 - 2. Topsoil and sod shall conform to the requirements specified on the Plans and in Section 32 92 23.
- D. Contractor, at Contractor's expense, shall furnish, place and compact any additional material needed to construct the ditch at the location and cross sections called for on the Plans.

3.18 RIGHT-OF-WAY RESTORATION

- A. The right-of-way shall be restored in accordance with the type and location specified on the Plans. The right-of-way may be shaped by machine grading or another method approved by the Engineer to achieve the cross section, line and grade shown on the Plans.
- B. Excess material from the right-of-way restoration operation shall be disposed of by the Contractor at Contractor's expense, as specified in Section 01 89 00.
- C. The right-of-way shall be graded to receive topsoil and seed, topsoil and sod, or _____.
 - 1. Topsoil, seed, fertilizer and mulch shall conform to the requirements specified on the Plans and in Section 32 92 19.
 - 2. Topsoil and sod shall conform to the requirements specified on the Plans and in Section 32 92 23.
- D. Contractor, at Contractor's expense, shall furnish, place, and compact any additional fill, meeting the approval of the Engineer, needed to construct the right-of-way to the cross sections called for on the Plans.

3.19 MACHINE GRADING

- A. The Work of machine grading shall consist of light grading of such character that, in general, the excavation from ditches and roadbed will be utilized in shaping shoulders and adjacent shallow fills and the work can be performed by a blade grader or similar equipment. Machine grading shall apply on the sections shown on Plans or specified in the Contract Documents.
- B. Work shall include all necessary scarifying, plowing, discing, moving and shaping the earth to develop the cross section shown on Plans.
- C. Ditches shall be in reasonably close conformity with the line and grade as shown on the Plans or as directed and must drain runoff waters to outlets shown on the Plans or designated by the Engineer.
- D. The roadbed shall be finished to grade with a blade grader or equivalent equipment.
- E. Intersections, approaches, entrances, and driveways shall be graded as shown or as directed, except that loading and hauling of earth will not be required as part of this Work.

3.20 MAINTENANCE AGGREGATE

- A. Contractor shall furnish and install MDOT 21A, 21AA or 22A maintenance aggregate to maintain pedestrian and traffic access. Aggregate shall be placed and compacted to maintain access in areas as determined by the Engineer.

- B. Maintenance aggregate will be incidental to the Project unless otherwise specified in the Contract Documents.

3.21 TESTING

- A. During the course of the Work, the Engineer may require testing for compaction, sieve analysis and moisture content of the backfill and subgrade materials.
- B. Taking of samples and the testing required shall be performed by a testing laboratory suitable to the Owner and approved by the Engineer.
- C. Engineer shall determine the location and number of samples to be made. The testing laboratory shall furnish the Engineer with two (2) certified copies of the results of all tests.
- D. Testing procedures shall conform to current MDOT Standards for Construction .
- E. Maximum unit weight when used as a measure of compaction or density of soils shall be understood to mean the maximum unit weight per cubic foot (or cubic meter) as determined by ASTM D1557, Method D, modified to include all the material passing the 1 inch sieve.

3.22 DEFECTIVE WORK

- A. Any portion of the backfill, subbase or subgrade which is deficient in the specified density shall be corrected by methods meeting the approval of the Engineer.
- B. Any extra testing or sampling required by the Engineer, because of deficiencies, shall be at the Contractor's expense.

END OF SECTION



SECTION 31 23 33 TRENCHING AND BACKFILLING

GENERAL

1.01 SCOPE

- A. This Section includes open trench construction for utility installation, complete with trenching, sheeting, bracing, bedding, bedding materials, backfilling, backfill materials, and compaction.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 57 13 - Temporary Erosion and Sediment Control
- B. Section 01 89 00 - Site Construction Performance Requirements
- C. Section 31 11 00 - Clearing and Grubbing
- D. Section 31 22 00 - Grading
- E. Section 31 23 16 - Structural Excavation and Backfill
- F. Section 31 23 19 - Dewatering
- G. Section 32 92 19 - Seeding
- H. Section 32 92 23 - Sodding
- I. Section 33 11 00 - Water Utility Distribution Piping
- J. Section 33 30 00 - Sanitary Utility Sewerage Piping
- K. Section 33 34 00 - Sanitary Utility Force Mains
- L. Section 33 41 00 - Storm Utility Drainage Piping

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. ASTM C94/C94M: Standard Specification for Ready-Mixed Concrete
 - 2. ASTM C150/C150M: Standard Specification for Portland Cement
 - 3. ASTM C595/C595M: Standard Specification for Blended Hydraulic Cements
 - 4. ASTM C618: Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
 - 5. ASTM C1479/C1479M: Standard Practice for Installation of Precast Concrete Sewer, Storm Drain, and Culvert Pipe Using Standard Installations
 - 6. ASTM D1557: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))
 - 7. ASTM D2321: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
 - 8. American Association of State Highway Transportation Officials
 - 9. Michigan Department of Transportation (MDOT), Standard Specifications for Construction, latest edition

1.04 TEST REPORTS

- A. Testing laboratory shall provide the Engineer with two (2) certified copies of the test results of the compaction of the backfill.

- B. Testing for compaction and the certification of the test results shall be performed by a testing laboratory approved by the Engineer.

1.05 MIX DESIGN

- A. Submit mix designs for any concrete or flowable fill mixtures to be used on the Project. Include certified test results for seven day and 28 day strengths, together with any technical information for admixtures.

1.06 SOIL EROSION AND SEDIMENTATION CONTROL

- A. Contractor, at Contractor's expense, shall provide, maintain and remove such temporary and/or permanent soil erosion and sedimentation control measures as specified on the Plans or as determined by the Engineer.
- B. Measures shall prevent surface runoff from carrying excavated materials into the drain, to reduce erosion of the slopes, and to prevent silting in of drain downstream of the Work.
- C. Measures should include provisions to reduce erosions by the wind of all areas stripped of vegetation, including material stockpiles.
- D. Comply with requirements of Section 01 57 13.

PRODUCTS

2.01 GRANULAR MATERIALS CLASS II

- A. Granular Material Class II shall conform to the requirements for granular material Class II, as specified in MDOT Section 902 except as follows. The granular material shall be natural bank run sand with a maximum size of 1-1/2 inches.

2.02 CRUSHED STONE BEDDING

- A. Crushed, angular, natural stone material, meeting the requirements of 21AA coarse aggregate as specified in MDOT Section 902. Crushed concrete and slag are not allowed.

2.03 CONCRETE

- A. Concrete shall conform to MDOT Section 1004 ; use 3,000 psi strength; Type IA cement; MDOT 6A coarse aggregate; MDOT 2NS fine aggregate; 3 inch maximum slump; no admixtures without Engineer's approval.

2.04 FLOWABLE FILL FOR BACKFILLING

- A. Materials
 - 1. Fly Ash shall have a maximum loss on ignition of 12% and meet the other requirements of ASTM C618 (Class F).
 - 2. Water shall meet the requirements of ASTM C94/C94M.
 - 3. ASTM C150/C150M or ASTM C595/C595M, Type I or Type IA.
- B. Mixture (Strength 100 to 120 psi)
 - 1. Fly Ash: 2,000 lbs per cyd min
 - 2. Cement: 70 lbs per cyd min
 - 3. Water: Sufficient water to produce desired flowability 700 lbs per cyd
- C. The temperature of the flowable fill mix as manufactured and delivered shall be at least 50 degrees Fahrenheit.
- D. The flowable fill can be mixed by pugmill, central concrete mixer, ready mix truck, turbine mixer, or other acceptable equipment or method.

EXECUTION

3.01 DEWATERING

- A. The area within the vicinity of the trenching operation shall be dewatered in accordance with Section 31 23 19 prior to the trenching operation.
- B. Depth of the dewatering shall be sufficient to allow the trench excavating operation including backfilling and compacting to proceed in a dry condition.

3.02 TRENCH EXCAVATION

- A. Open cut trench excavation shall include the site clearing and grubbing, the excavating of all materials encountered, the supporting and protecting of all structures and/or utilities encountered above and below the ground surface, and the removal of water from the construction site.
- B. The trenching operation shall commence at the downstream or outlet end of the new Work and proceed upstream, unless otherwise specified on the Plans or directed by the Engineer.
- C. The trench shall be excavated in reasonably close conformity with the lines and grades specified on the Plans or as established by the Engineer.
- D. The excavated materials shall be temporarily stored along the trench in a manner that will not cause damage to trees, shrubs, fences, improvements, utilities, private property, public property or traffic. The excavated materials shall not be placed at such locations that will endanger the trench banks by imposing loads thereon.
- E. For rigid pipe, the trench shall be of sufficient width to provide adequate working space to permit the installation of the pipe and the compaction of the bedding material under and around the pipe. However, for rigid pipe, the width of the trench from below the pipe bedding to 12 inches above the top of the pipe shall not exceed the following dimensions:

Diameter of Pipe	Width of Trench
6 thru 12 inch pipe	30 inches wide
15 thru 36 inch pipe	outside diameter plus 16 inches
42 thru 60 inch pipe	outside diameter plus 20 inches
over 60 inch pipe	outside diameter plus 24 inches

- 1. To support the additional load of the backfill when the maximum trench width as specified for rigid pipe is exceeded, the Contractor shall install, at Contractor's expense, concrete encasement which shall completely surround the pipe and shall have a minimum thickness at any point of 1/4 of the outside diameter of the pipe or 4 inches whichever is greater; or at Contractor's expense, install another type bedding, approved by the Engineer. The concrete encasement shall consist of 3,000 psi strength concrete.
- F. For flexible pipe, the minimum width shall be not less than the greater of either the pipe outside diameter plus 16 inches or the pipe outside diameter times 1.25, plus 12 inches. The maximum trench width for flexible pipe shall not exceed the minimum width by more than 6 inches.
 - 1. To support the additional load of the backfill when the maximum trench width as specified for flexible or semi-rigid pipe is exceeded, the Contractor shall install, at Contractor's expense, crushed stone bedding material to the full width between undisturbed trench walls or at least 2.5 pipe diameters on each side of the pipe.
- G. When, through the Contractor's construction procedure or because of unsuitable existing ground conditions, it becomes impossible to maintain alignment and grade properly, the Contractor, at Contractor's expense, shall excavate below the normal trench bottom grade and shall fill the void with a large size aggregate or 3,000 psi (21 MPa) concrete as approved by the Engineer to ensure that the pipe when laid in the proper bedding will maintain correct alignment and proper grade.

- H. Trench excavations, including those for shafts and structures, shall be adequately braced and/or sheeted where necessary to prevent caving or squeezing of the soil.

3.03 SHEETING, SHORING, AND BRACING

- A. Contractor shall furnish, place and maintain sheeting, shoring, and bracing of the trench and/or shaft as may be required for safety of the workmen and for protection of the new Work or adjacent structures, including pavement, curbs, sidewalks, pipe lines, and conduits next to or crossing the trench; and for the protection and safety of pedestrian and vehicular traffic.
- B. Contractor shall be responsible for the complete design of all sheeting, shoring and bracing Work. The design shall be appropriate for the soil conditions; and shall be of such strength, quality, dimension and spacing as to prevent caving or loss of ground or squeezing within the neat lines of the excavation; and shall effectively restrain movement of the adjacent soil.
- C. Prior to installing the sheeting, shoring or bracing, the Contractor shall submit plans for this Work to the Engineer for informational purposes only.
- D. Sheeting, shoring, bracing, and excavation shall conform to the current federal or state regulations for safety.
- E. Where indicated on the Plans and where necessary in the Work, install and leave sheeting, shoring, and bracing in place. No additional compensation shall be paid to Contractor for sheeting, shoring or bracing left in place.
- F. Supports for pipes, conduits, etc. crossing the trench shall conform to the requirements of the owners of such facilities and if necessary, shall be left in place.
- G. Furnishing, placing, bracing, maintaining, and removing of sheeting, shoring, and trenching materials shall be at the Contractor's expense.
- H. Contractor shall not remove the trench sheeting, shoring and bracing until the pipe has been properly bedded, and the trench backfilled to sufficiently support the external loads.
- I. Sheeting, shoring, and bracing material shall not come in contact with the pipe, but shall be installed so that no concentrated loads or horizontal thrusts are transmitted to the pipe.

3.04 PIPE BEDDING

- A. Install and compact in 6 inch layers. Particular care shall be taken to assure filling and tamping all spaces under, around, and above the top of the pipe. Work in and around pipe by hand to provide uniform support.
- B. Rigid Pipe Bedding:
 - 1. Rigid pipe bedding shall conform to ASTM C1479, except as noted.
 - 2. Class R-A:
 - a. Pipe shall be bedded in crushed stone bedding material placed on the trench bottom. Bedding shall have a minimum thickness beneath the pipe of 4 inches or 1/4 of the outside diameter of the pipe, whichever is greater; and shall extend up the sides of the pipe to the horizontal centerline.
 - b. The top half of the pipe shall be covered with a monolithic plain concrete arch having a thickness of at least 4 inches or 1/4 of the inside diameter of the pipe, whichever is greater, at the pipe crown; and a minimum width equal to the outside diameter of the pipe plus 8 inches or 1-1/4 of the diameter of the pipe, whichever is greater.
 - 3. Class R-B:
 - a. Pipe shall be bedded in crushed stone bedding material placed on the trench bottom. Bedding shall have a minimum thickness beneath the pipe of 4 inches or 1/8 of the outside diameter of the pipe, whichever is greater, and shall extend up the sides of the pipe to the horizontal centerline.

- b. Backfill from pipe horizontal centerline to a level not less than 12 inches above the top of the pipe shall be granular material Class II. This material shall be placed in 6 inch layers with each layer thoroughly compacted by mechanical means with the finished compacted material a minimum of 12 inches above the top of pipe.
 - 4. Class R-C:
 - a. Pipe shall be bedded in granular material Class II placed on the trench bottom. Bedding shall have a minimum thickness beneath the pipe of 4 inches or 1/8 of the outside diameter of the pipe, whichever is greater, and the bedding shall extend to a level not less than 12 inches above the top of the pipe.
 - b. This material shall be placed in 6 inch layers with each layer thoroughly compacted by mechanical means with the finished compacted material a minimum of 12 inches above the top of pipe.
- C. Flexible Pipe Bedding:
- 1. Flexible pipe bedding shall conform to ASTM D2321, except as noted. A continuous and uniform bedding shall be provided in the trench for all buried pipe.
 - 2. Class F-I:
 - a. Pipe shall be bedded in crushed stone bedding material placed on the trench bottom. The bedding shall have a minimum thickness beneath the pipe of 4 inches and shall extend up the sides of the pipe until the top of pipe is covered by a minimum thickness of 12 inches.
 - b. Where allowable trench widths are exceeded, bedding shall be used to the full width between undisturbed trench walls. Concrete cradle bedding shall not be used.
 - 3. Class F-II:
 - a. Pipe shall be bedded in crushed stone bedding material placed on the trench bottom. Bedding shall have a minimum thickness beneath the pipe of 4 inches or 1/8 of the outside diameter of the pipe, whichever is greater; and shall extend up the sides of the pipe to the horizontal centerline.
 - b. Backfill from pipe horizontal centerline to a level not less than 12 inches above the top of the pipe shall be granular material Class II. This material shall be placed in 6 inch layers with each layer thoroughly compacted by mechanical means with the finished compacted material a minimum of 12 inches above the top of pipe.
 - c. Where allowable trench widths are exceeded, bedding shall be used to the full width between undisturbed trench walls. Concrete cradle bedding shall not be used.
 - 4. Class F-III:
 - a. Pipe shall be bedded in granular material Class II placed on the trench bottom. Bedding shall have a minimum thickness beneath the pipe of four 4 inches or 1/8 of the outside diameter of the pipe, whichever is greater, and the bedding shall extend to a level not less than 12 inches above the top of the pipe. This material shall be placed in 6 inch layers with each layer thoroughly compacted by mechanical means with the finished compacted material a minimum of 12 inches above the top of the pipe.
 - b. Where allowable trench widths are exceeded, bedding shall be used to the full width between undisturbed trench walls. Concrete cradle bedding shall not be used.

3.05 BACKFILLING TRENCHES

- A. Backfill material shall be placed on sections of bedded pipes only after such pipe bedding and backfill materials have been approved by the Engineer.
- B. The trench backfilling shall follow the pipe laying as closely as possible. However, at no time shall the pipe laying in any trench precede backfilling of that trench by more than 100 feet,

unless otherwise directed by the Engineer.

- C. Backfilling shall not be done in freezing weather except by permission of the Engineer. Frozen materials shall not be used in trench backfilling.
- D. The following trench backfill specifications are for use in that portion of the trench beyond the scope of the pipe bedding requirements which normally stops at a point 12 inches above the top of pipe. Backfill material to be placed above pipe bedding shall be free of cinders, ashes, refuse, boulders, roots, stumps, trees, timbers, brush, debris, or other extraneous materials which in the opinion of the Engineer, are unsuitable. Rocks or stones having a dimension larger than 6 inches shall not be placed within three 3 feet of the top of the pipe. Large stones may be placed in the remainder of the trench backfill only if well separated and arranged so that no interference with backfill settlement will result.
- E. The type and method of backfilling is dependent on its location and function and shall conform to the following requirements:
 - 1. Trench B:
 - a. Trenches under road surfaces, pavement, curb, driveway, sidewalk and where the trench edge is within three 3 feet of the pavement and as noted on the plans shall be backfilled with natural bank run sand meeting the requirements of granular material Class II, unless otherwise indicated on the Plans.
 - b. Trenches under pavement to be constructed in the near future, as noted or shown on the Plans, shall be backfilled with natural bank run sand, meeting the requirements of granular material Class II, unless otherwise indicated on the Plans.
 - c. Where a pipe is installed under an existing or proposed utility, the backfill between the two shall be natural bank run sand meeting the requirements of granular material Class II, unless otherwise indicated on the Plans, constructed as herein specified.
 - d. The material shall be placed in uniform layers that can be adequately compacted and tested from the surface of that layer and shall be compacted to 95% of the materials maximum unit weight, unless otherwise specified on the Plans or by the Engineer.
 - 2. Trench A;
 - a. All other trenches shall be backfilled with suitable excavated material placed in uniform layers that can be adequately compacted and tested from the surface of that layer.
 - b. Each layer shall be thoroughly compacted by approved mechanical methods to a density equivalent to the undisturbed adjacent soil or 90% of its maximum unit weight, whichever is less.
 - 3. Unless otherwise specified on the Plans or as directed by the Engineer, the trench backfill shall be carried to the adjacent existing ground or proposed grade whichever is higher.
 - 4. Where any backfill or bedding as shown on the plans or specified is to be flowable fill, care shall be used to avoid displacing any pipes or structures due to fluid pressure. Pipes in backfill areas may need to be secured to avoid the buoyancy effect.

3.06 COMPACTING BACKFILL

- A. Compaction of the backfill will not be paid for separately, but shall be considered incidental to the Work of installation of the pipe and backfilling and shall include all the Work of manipulating the soil to obtain the specified densities. No additional compensation will be allowed for any delay required to obtain the specified moisture content or the specified density.

3.07 CLEANUP

- A. Immediately following the placing and compacting of the backfill, the excess material shall be removed and disposed of by the Contractor, at Contractor's expense, as specified in Section 01 89 00. The construction area shall be leveled and left in a neat workmanlike condition.

- B. At a seasonally correct time, approved by the Engineer, the disturbed area shall be raked, having topsoil placed thereon and restored.
 - 1. Restoration with seed, fertilizer and mulch shall be the requirements of Section 32 92 19 .
 - 2. Restoration with sod shall be in accordance with Section 32 92 23.

3.08 FIELD TESTING

- A. During the course of the Work, the Engineer may require testing for compaction or density of the backfill. The taking of samples and the testing required shall be performed by a testing laboratory suitable to the Owner and approved by the Engineer.
- B. The maximum unit weight, when used as a measure of compaction or density of soils, shall be understood to mean the maximum unit weight per cubic foot or per cubic meter as determined by ASTM D1557, Method C.

3.09 DEFECTIVE WORK

- A. Any portion of the trench backfill which is deficient in the specified density shall be corrected by methods meeting the approval of the Engineer.
- B. Any extra testing or sampling required because of deficiencies shall be at the Contractor's expense.

END OF SECTION

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SECTION 32 11 23 AGGREGATE BASE COURSES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section includes aggregate base courses complete with aggregate materials constructed in preparation for paving or aggregate surfacing.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 89 00 - Site Construction Performance Requirements
- C. Section 31 23 13 - Subgrade Preparation
- D. Section 32 12 16 - Bituminous Paving

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. ASTM D98: Standard Specification for Calcium Chloride
 - 2. ASTM D1557: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))
 - 3. Michigan Department of Transportation (MDOT), Standard Specifications for Construction, latest edition

1.04 ALLOWABLE TOLERANCES

- A. The finished surface shall be shaped to conform to plan grade and cross section within a tolerance of 3/4 inch in 10 feet.

1.05 TEST REPORTS

- A. The testing lab shall provide the Engineer with two (2) certified copies of the test results of the thickness of the compacted aggregate. The core drilling, testing for thickness and the certification of the test results shall be performed by a testing laboratory approved by the Engineer.

1.06 STOCKPILING AGGREGATE

- A. Aggregate shall be deposited in stockpiles in such a manner that the material may be removed from the stockpile by methods which will provide aggregate having a uniform gradation.
- B. Stockpiling of aggregate, in excess of 4 feet in depth, on the completed subbase or aggregate surface will not be permitted, except with the approval of the Engineer.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Comply with the requirements for aggregate base or surfacing installations due to outside ambient air temperatures specified in Part 3 of this Section.

PART 2 PRODUCTS

2.01 DENSE-GRADED AGGREGATE

- A. Dense-graded aggregate gradation shall conform to Series 21 and 22, as specified in MDOT Section 902.05.

2.02 CALCIUM CHLORIDE ADDITIVES

- A. Calcium chloride additives shall conform to ASTM D98 and as specified in MDOT Section 922.12.

2.03 WATER

- A. Water used for compaction and dust control shall be reasonably clean and free from substances injurious to the finished product. Potable water from sources approved by Michigan State Department of Public Health may be used.

PART 3 EXECUTION

3.01 EXCAVATION VERIFICATION

- A. Prior to the placing of any aggregate material, examine the excavation for the grades, lines, and levels required to receive the new Work.
- B. Ascertain that excavation and compacted subgrades or subbases are adequate to receive the new Work.
- C. Correct defects and deficiencies before proceeding with the Work.

3.02 SUBGRADE CONDITIONS

- A. Prior to the placing of any aggregate material, examine the subgrade or subbase to ascertain that it is adequate to receive the aggregate to be placed.
- B. If the subgrade or subbase remains wet after all surface water has been removed, the Engineer may require the installation of edge drain.

3.03 EXISTING IMPROVEMENTS

- A. Investigate and verify locations of existing improvements, including structures, to which the new Work will be in contact. Necessary adjustments in line and grade, to align the new Work with the existing improvements must be approved by the Engineer, prior to any changes.

3.04 PREPARATION OF SUBGRADE OR SUBBASE

- A. Subgrade or subbase shall be fine graded to the cross section indicated on the Plans, and shall be thoroughly compacted prior to the placing of the aggregate material.

3.05 INSTALLATION - GENERAL

- A. Width, thickness, and type of aggregate materials shall be indicated on the Plans or as directed by the Engineer.
- B. No aggregate material shall be placed until the subgrade, or subbase, or existing aggregate surface has been approved by the Engineer.

3.06 INSTALLATION OF AGGREGATE BASE COURSE

- A. Aggregate base course shall be placed by a mechanical spreader or other approved means in uniform layers to such a depth that when compacted, the course will have the thickness shown on the Plans.
- B. The depth of any one layer, when compacted, shall not be more than 8 inches. If the required compaction cannot be obtained for the full depth of the aggregate base course, the thickness of each course shall be reduced, or, with the approval of the Engineer, adequate equipment shall be used to compact the aggregate to the required unit weight.
- C. Subgrade or subbase shall be shaped to the specified crown and grade and maintained in a smooth condition. If hauling equipment causes ruts or holes in the subgrade or subbase, the hauling equipment will not be permitted on the subgrade or subbase, but shall be operated on the aggregate base course behind the spreader.
- D. Aggregate shall be compacted to at least 95% of maximum unit weight by the use of approved pneumatic-tired compaction equipment or vibratory compactors.

- E. Optimum moisture content shall be maintained until the prescribed unit weight is obtained and each layer shall be compacted until the maximum unit weight is attained before placing the succeeding layer.
- F. When approved by the Engineer, additional water may be applied to the aggregate by an approved means to aid in the compaction and shaping of the material.
- G. Motor graders, trimmers or other approved equipment shall be used to shape the aggregate base course, and maintain it, until the surface course is placed.
- H. When hauling material over the base course, subbase or subgrade, the Contractor shall limit the weight and speed of Contractor's equipment to avoid damage to the subgrade, subbase or aggregate base course. If the subgrade, subbase or aggregate base course becomes rutted due to the Contractor's operation, the subgrade, subbase or base course shall be removed and replaced until acceptable to the Engineer, at the Contractor's expense.
- I. With the approval of the Engineer, chloride additives may be used by the Contractor to facilitate his compaction and maintenance of the aggregate surface. The amount and method of combining the chloride additives are at the option of the Contractor and are at Contractor's expense.

3.07 MAINTENANCE DURING CONSTRUCTION

- A. Aggregate base course and aggregate surface shall be continuously maintained in a smooth and firm condition during all phases of the construction operation.
- B. Contractor, at Contractor's expense, shall provide additional materials needed to fill depressions or bind the aggregate.

3.08 TEMPERATURE LIMITATIONS

- A. Aggregate materials shall not be placed when there are indications that the mixtures may become frozen before the maximum unit weight is obtained.
- B. In no case shall the aggregate be placed on a frozen subgrade or base course unless otherwise approved by the Engineer.

3.09 TESTING

- A. During the course of the Work, the Engineer may require testing for compaction or density and for thickness of material. Testing and coring required shall be performed by a testing laboratory acceptable to the Owner and approved by the Engineer. The cost for testing and coring shall be at the expense of the Owner.
- B. When thickness tests are done, a minimum of one depth (thickness) measurement will be made every 400 feet per traffic lane. The lane width shall be as indicated on the Plans or as determined by the Engineer.
 - 1. If two (2) lanes are constructed simultaneously, only one test is necessary to represent both lanes.
 - 2. For areas such as intersections, entrances, cross-overs, ramps, widening strips, acceleration and deceleration lane, at least one depth measurement will be taken for each 1200 square yards of such areas or fraction thereof.
- C. Location of the depth measurement will be at the discretion of the Engineer.
- D. Maximum unit weight shall be understood to mean the maximum unit weight per cubic foot as determined by ASTM D1557, Method A.

3.10 DEFECTIVE WORK

- A. Thickness:
 - 1. Measurements of aggregate base course thickness will be made to the nearest 1/4 inch.

- a. Depths may be 1/2 inch less than the thickness indicated on the Plans provided that the average of all measurements taken at regular intervals shall be equal to or greater than the specified thickness.
 - b. In determining the average in place thickness, measurements which are more than 1/2 inch in excess of the thickness indicated on the Plans will be considered as the specified thickness plus 1/2 inch.
 - 2. Locations of the depth measurements will be as specified herein unless otherwise determined by the Engineer. Sections found to be deficient in depth shall be corrected by the Contractor using methods approved by the Engineer.
- B. Weight
- 1. When the aggregate material is measured by weight in tons, the pay weights for aggregates will be the scale weight of the material, including admixtures, unless the moisture content is more than 6 percent .
 - a. Moisture tests will be made at the start of weighing operations and at any time thereafter when construction operations, weather conditions or any other cause may result in a change in the moisture content of the material.
 - b. If the tests indicate a moisture content in excess of 6 percent, the excess over 6 percent will be deducted from the scale weight of the aggregate until such time as moisture tests indicate that the moisture content of the material is not more than 6 percent.

END OF SECTION

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SECTION 32 13 13 CONCRETE PAVING

GENERAL

1.01 SCOPE

- A. This Section includes both plain and reinforced portland cement concrete paving complete with concrete material admixtures, joints, forms, equipment requirements, field quality control and appurtenances required to complete the portland cement concrete paving Work indicated on the Plans.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 5000: Temporary Facilities and Controls
- C. Section 31 2313: Subgrade Preparation
- D. Section 32 1123: Aggregate Base Courses
- E. Section 32 1723: Pavement Markings
- F. Section 32 9219: Seeding

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications.
 - 1. AASHTO M 33M: Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
 - 2. AASHTO M 324: Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
 - 3. AASHTO T 26: Standard Method of Test for Quality of Water to Be Used in Concrete
 - 4. ASTM A615/A615M: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - 5. ASTM A706/A706M: Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
 - 6. ASTM A996/A996M: Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
 - 7. ASTM A1064/A1064M: Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
 - 8. ASTM C33/C33M: Standard Specification for Concrete Aggregates
 - 9. ASTM C94/C94M: Standard Specification for Ready-Mixed Concrete
 - 10. ASTM C143/C143M: Standard Test Method for Slump of Hydraulic-Cement Concrete
 - 11. ASTM C150/C150M: Standard Specification for Portland Cement
 - 12. ASTM C172/C172M: Standard Practice for Sampling Freshly Mixed Concrete
 - 13. ASTM C260/C260M: Standard Specification for Air-Entraining Admixtures for Concrete
 - 14. ASTM C309: Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
 - 15. ASTM C494/C494M: Standard Specification for Chemical Admixtures for Concrete

16. ASTM C618: Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
17. ASTM C989/C989M: Standard Specification for Slag Cement for Use in Concrete and Mortars
18. ASTM D98: Standard Specification for Calcium Chloride
19. ASTM D994/D994M: Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
20. ASTM D1751: Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
21. ASTM D5893/D5893M: Standard Specification for Cold Applied Single Component Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements
22. ASTM D6690: Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
23. American Concrete Paving Association
24. MDOT: Michigan Department of Transportation, Standard Specifications for Construction, latest edition.

1.04 MATERIAL REPORTS

- A. At the request of the ENGINEER, the CONTRACTOR shall provide the ENGINEER with certification that the various materials to be used conform to the Standards referred to in the Specifications.
- B. The CONTRACTOR shall submit a list of his source of material supply to the ENGINEER for review prior to placing any order.
- C. The CONTRACTOR shall provide the ENGINEER, prior to the actual delivery of the ready-mixed concrete, the mix design as required by ASTM C94/C94M .

1.05 THICKNESS AND COMPRESSIVE STRENGTH REPORTS

- A. The testing lab shall provide the ENGINEER with two (2) certified copies of the test results of the thickness and compressive strength of the concrete. The core drilling, testing for thickness and compressive strength, and the certification of the test results shall be performed by a testing laboratory approved by the ENGINEER.

1.06 WATER QUALITY TEST REPORTS

- A. The testing lab shall provide the ENGINEER with two (2) certified copies of the test results of the quality of water to be used in the concrete. The sampling and testing of water quality shall be in accordance with AASHTO T 26 requirements, and the certification of the tests' results shall be performed by a testing laboratory approved by the ENGINEER.

1.07 REQUEST FOR MATERIAL VARIANCE

- A. All requests for variances in the materials, as specified, shall be made in writing to the ENGINEER.
- B. Two (2) copies of the request shall be submitted for the ENGINEER's review and approval.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Comply with the requirements for concrete installation due to outside ambient air temperatures specified under Part 3 of this Section.
- B. Comply with the requirements for protecting new Work against damage from rain, as specified under Part 3 of this Section.
- C. Comply with the requirements for protecting new Work against damage from cold weather, as specified under Part 3 of this Section.

PRODUCTS

2.01 CEMENT

- A. Cement shall be low alkali, air-entraining Portland cement conforming to ASTM C150/C150M, Type IA or Type IIIA.

2.02 FINE AGGREGATES

- A. The fine aggregate gradation shall conform to ASTM C33/C33M and to fine aggregate, 2NS, as specified in MDOT, Section 902.08.

2.03 COARSE AGGREGATE

- A. The coarse aggregate gradation shall conform to ASTM C33/C33M and to coarse aggregate, 6A, or 6AA as specified in MDOT, Section 902.03.

2.04 WATER

- A. Water to be used for mixing and curing concrete shall be reasonably clean and free from oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product.
- B. Waters from sources approved by the Michigan Department of Public Health as potable may be used without testing.
- C. Water requiring testing shall be tested in accordance with the current Method of Test for Quality of Water to be used in Concrete, AASHTO T-26, and specified in MDOT, Section 911.

2.05 CONCRETE ADMIXTURES

- A. Air-Entraining Admixtures
 - 1. Air-entraining admixtures for concrete shall conform to ASTM C260/C260M and as specified in MDOT, Section 903.01.
- B. Concrete Accelerators
 - 1. Chemical admixtures, other than calcium chloride, for accelerating the set of Portland cement concrete shall conform to ASTM C494/C494M, Type C or Type E.
 - 2. Calcium chloride in flake or pellet form shall conform to ASTM D98, Type S, Grade 1 or grade 2, flake or pellet form, and as specified in MDOT, Section 903.04.
 - 3. Calcium chloride in solution form shall conform to MDOT, Section 903.04.
- C. Water-Reducing and Water-Reducing Retarding Admixtures
 - 1. Water-reducing admixtures and water-reducing retarding admixtures shall conform to ASTM C494/C494M, Type A or Type D, except that neither type of admixture shall contain calcium chloride, and as specified in MDOT, Section 903.02.
- D. Pozzolanic Admixtures
 - 1. Fly Ash shall conform to ASTM C618, Type F, and as specified in MDOT, Section 901.07.
 - 2. Ground granulated blast furnace slag shall conform to ASTM C989/C989M, Grade 100, minimum

2.06 CONCRETE CURING COMPOUNDS

- A. White membrane curing compound for curing concrete shall conform to ASTM C309, Type 2, Class B Vehicle, and as specified in MDOT, Section 903.06.
- B. Transparent membrane curing compound for curing base course concrete shall conform to ASTM C309, Type 1-D, Class B Vehicle, and as specified in MDOT, Section 903.06.

2.07 LANE TIE BARS

- A. Bar reinforcement for pavement tie bars shall conform to ASTM A706/A706M, or ASTM A615/A615M, Grade 60, and as specified in MDOT, Section 914.09.

2.08 STEEL WELDED WIRE FABRIC

- A. Welded steel wire fabric for concrete mesh reinforcement shall conform to ASTM A1064/A1064M, and as specified in MDOT Section 905.06, and shall be fabricated as shown on the Plans.

2.09 DOWEL BARS

- A. Dowel Bars and basket assemblies for Transverse expansion and contraction joints shall be ASTM A615/A615M Grade 40 and conform to MDOT Section 914.07.

2.10 STEEL HOOK BOLTS

- A. Hook bolts shall conform to ASTM A706/A706M, or Grade 60 of ASTM A615/A615M, or ASTM A996/A996M. Hook bolts shall be 5/8 inch diameter. Along the edge of existing concrete, expansion anchored hook bolts shall be used.

2.11 JOINT FILLERS

- A. Fiber joint filler material for expansion joints shall conform to ASTM D1751, and as specified in MDOT, Section 914.03.
- B. Bituminous premolded joint filler material shall conform to ASTM D994/D994M and also AASHTO M 33M.
- C. Polyethylene premolded joint filler for pressure relief joints shall be a flexible, low-density, expanded, extruded polyethylene plank. The polyethylene plank shall be formed by the expansion of polyethylene base resin in an extrusion process and shall be homogeneous, closed-cell and multi-cellular.

2.12 JOINT SEALANTS

- A. Hot-poured type joint sealant shall conform to AASHTO M324 or ASTM D6690 Type II and as specified in MDOT, Section 914.04.
- B. Cold-applied, single component type, joint sealant shall conform to ASTM D5893.

2.13 CONCRETE MIX

- A. Concrete shall yield a minimum compressive strength of 3500 PSI when cured in a moist room at a temperature within a range of 65 to 75 degrees F for a period of 28 days.
- B. Mixes shall be a nominal 564 lbs/cyd mix except that a minimum of 25% Type F Fly Ash shall be used in the mix. The CONTRACTOR shall provide documentation from actual mixes used on projects showing 28 day compressive strength of not less than 3500 PSI when tested under field conditions.
 - 1. Water reducers, additional fly ash, ground granulated blast furnace slag (GGBFS), and other pozzolans, may be used when approved by the ENGINEER. The fly ash quantity may not exceed 40%; GGBFS quantity shall be not less than 25% not more than 40%.
 - 2. Maximum total replacement of cement shall not exceed 40%. GGBFS and Fly Ash must replace cement on a pound for pound basis.
- C. Cement shall be air-entraining Portland cement ASTM C150/C150M, Type IA. If high-early strength concrete is desired, Type IIIA is required.
- D. High early strength concrete shall be 4500 PSI, 658 lbs/cyd with a water reducer. Water cement ratio shall be between 0.38 and 0.39.
- E. The air content of the concrete shall be dependent on the maximum size aggregate as follows:

Maximum Size of Aggregate	Air by Volume (%)
1-1/2 to 2-1/2 inch	5
3/4 to 1 inch	6
3/8 to 1/2 inch	7-1/2

- F. The slump of the concrete shall be between 1-1/2 to 2-1/2 inch where machine methods are used for striking off and consolidating the concrete. If the ENGINEER permits hand finishing, the slump may be increased to 3-1/2 inch.
- G. Ready-mixed concrete shall be in accordance with ASTM C94/C94M, Alternate 2, and shall yield a minimum compressive strength of 3500 PSI when cured in a moist room at a temperature within a range of 65 to 75 degrees F for a period of 28 days.
- H. The ENGINEER shall be provided with the mix design for review and approval, prior to the actual delivery of the concrete.

EXECUTION

3.01 VERIFICATION OF EXCAVATION AND FORMING

- A. Prior to the installation of any concrete, examine the excavation and forms for the grades, lines, and levels required to receive the new Work. Ascertain that all excavation and compacted subgrades are adequate to receive the concrete to be installed.
- B. Correct all defects and deficiencies before proceeding with the Work.

3.02 VERIFICATION OF SUBGRADE CONDITIONS

- A. Prior to the installing of any concrete, examine the subgrade to ascertain that it is adequate to receive the concrete to be installed. If the subgrade remains wet after all surface water has been removed the ENGINEER may require the installation of edge drain.

3.03 EXISTING IMPROVEMENTS

- A. Investigate and verify location of existing improvements, including structures, to which the new Work is to be connected. Make necessary adjustments in line and grade to align the new Work with the existing improvements after approval by the ENGINEER.

3.04 BATCH PLANT

- A. An adequate site for the batch plant shall be obtained by the CONTRACTOR, at his expense. The site shall be maintained, and the plant operated in accordance with the conditions and requirements established by the community in which the plant is located.

3.05 FINE GRADING

- A. The subgrade shall be fine graded to the cross section shown on the Plans and shall be thoroughly compacted prior to the placing of forms or concrete.

3.06 INSTALLATION - GENERAL

- A. The width, thickness, and type of concrete pavement shall be specified on the Plans or as approved by the ENGINEER.
- B. At street intersections, curb drops, conforming to the current rules and regulations of Act 8, Michigan PA 1973, shall be provided for the construction of sidewalk ramps.
- C. Curb drops for sidewalk ramps and driveway approaches shall be provided as specified in locations called for on the Plans or as approved by the ENGINEER.
- D. Construction operations shall be restricted to the existing right-of-way. If additional area is required, the CONTRACTOR shall furnish the ENGINEER with written permission from the property owner for any part of the operation he conducts outside the established right-of-way.

- E. The CONTRACTOR shall maintain traffic access at all intersections. Vehicle access shall also be maintained to all commercial and public properties and elsewhere as designated by the ENGINEER.

3.07 FORMS

- A. Except when paving with a slip-form paver, forms shall be used and shall be made of metal, having an approved section, which shall insure their rigidity under impact, thrust and weight of the heaviest machine carried on them. The thickness of the metal shall be not less than 1/4 inch, except that a minimum thickness of 3/16 inch will be permitted if the form is a trapezoidal cross section.
- B. Forms shall have a minimum length of ten 10 feet and a depth not less than the edge thickness of the Work prescribed, except the subgrade may be a maximum of 1 inch lower than the bottom of the forms when approved by the ENGINEER. The width of the base in direct bearing on the soil shall be not less than 0.75 of the form depth except that a width of less than 8 inches will not be permitted.
- C. Each 10 feet section of form shall have at least three (3) stake pockets. The forms shall be straight, free from distortion, and shall show no vertical variation greater than 1/8 inch in 10 feet lengths from the true plane surface on the top of the form when tested with a 10 feet straightedge; and shall show no lateral variation greater than 1/4 inch from the true plane surface on the vertical face of the form when tested with a straightedge.
- D. Approved wood or flexible forms and hand finishing will be required on all pavement where the radius for the edge of the pavement is less than 200 feet.
- E. The method of connection between form sections shall be such that a locked joint is formed free from vertical movement in excess of 1/8 inch and from horizontal movement in excess of 1/4 inch under the impact, thrust and weight of the heaviest machine carried on the forms.
- F. Sufficient forms shall be provided so that it will not be necessary to remove them in less than 12 hours, or longer if required, after the concrete has been placed.

3.08 EQUIPMENT REQUIREMENTS

- A. Approved, mechanical concrete placing and finishing equipment shall be used for concrete paving except for gapped areas or where otherwise approved by the ENGINEER.
- B. The CONTRACTOR shall furnish sufficient equipment for the placing of concrete pavement. The equipment shall be on the job site and ready for normal operation before the paving operation is started. All equipment shall be in good working order. The equipment shall be subject to inspections and testing during construction.
- C. The equipment shall be of sufficient capacity that the paver can operate continuously and obtain a rate of production that insures good workmanship and eliminates overloading of equipment or frequent interruptions or delays.
- D. Equipment operating on or near the pavement shall be equipped with rubber-tired wheels.
- E. Subgrade Roller or Compactor
 - 1. This equipment shall be self-propelled steel-wheeled or a pneumatic-tired roller weighing not less than 8 tons or a self-propelled vibratory compactor of adequate size to compact the subgrade to the required density.
- F. Subgrade Planer
 - 1. A steel-shod subgrade planer supported by two (2) flanged wheels resting on the side forms may be used for trimming the subgrade in small areas when approved by the ENGINEER.
 - 2. The steel-shod template shall be adjustable to fit the shape of the bottom of the pavement and shall have adequate connection to a rigid frame to maintain the crown.

3. The planer shall be of sufficient weight to plane off all high spots encountered.
- G. Base Trimmer
1. For slip-form construction, a powered, self-propelled base trimmer will be required. This base trimmer shall be capable of trimming the base to the required cross section.
- H. Water Supply Equipment
1. The pumps and pipe lines shall be such capacity and nature as to insure an ample supply and adequate pressure of water, simultaneously, for all the requirements of machinery, mixing, sprinkling subgrade, and all other requirements of the Work.
 2. Water may be supplied in tank wagons to augment inadequate pipe lines or to replace them entirely if a sufficient number of units are employed.
- I. Finishing Machine
1. The finishing machine shall be power driven and of an approved type which will strike off and compact the concrete with a screeding and troweling action. The machine shall be capable of finishing the concrete in the manner specified herein, and shall provide a minimum of two (2) oscillating screeds.
 2. A combination concrete spreader/finishing machine (i.e.: Pav-Saver®) may be used for residential streets not exceeding 100 feet in length and 18 feet in width or when approved by the ENGINEER.
 - a. The combination type machine must have suitable automatic vibrators, strike-off bars, augers, screeds, finishing pan, etc., in accordance with the requirements of this section, to produce a densely compacted, homogeneous concrete slab, true to line, grade and cross section.
- J. Concrete Spreader
1. An approved concrete spreader with a strike-off board or a separate strike-off shall be used to level each layer of concrete, before placing of reinforcement, and before finishing the concrete.
 - a. It shall have sufficient weight and rigidity to retain its shape under working conditions to properly strike off the concrete.
 - b. Two separate spreaders are not required where an approved mesh depresser type machine is used.
 2. A concrete spreader is not required for the construction of residential street concrete pavement when approved by the ENGINEER.
- K. Vibratory Screed
1. An approved hand-propelled vibratory screed shall be provided for use in gapped areas at driveways and intersections, and where machine methods are not feasible to screed and consolidate the concrete.
 - a. Gaps finished by this method shall be limited to one (1) joint spacing in length and one (1) single lane width.
 2. The screed shall consist of a steel-shod strike board having a minimum thickness of two 2 inches and equipped with a gasoline engine capable of producing at least 5,000 vibrations per minute.
 3. Other vibratory screeds may be approved by the ENGINEER.
- L. Membrane Sprayer
1. A mechanically-pumped pressure sprayer capable of applying a continuous uniform film of curing compound will be required.

2. The equipment shall provide adequate stirring of the compound during application.

M. Slip-Form Paving Equipment

1. When pavement is placed by the slip-form method, the slip-form paving equipment shall spread, consolidate, screed, and mechanically float the freshly-placed concrete in such a manner that only a minimum of hand finishing will be necessary to provide a dense and homogeneous pavement.
2. The machine shall be equipped to vibrate the concrete for the full width and depth of the pavement being placed.

N. Floats

1. The mechanical float shall be a combination float finisher. Where a mechanical float is an integral part of a slip-form paver, a separate mechanical float will not be required.
2. A float finisher shall consist of a machine having two (2) screeds and be equipped with a suspended pan float. The second screed and the pan float shall be suspended in such a manner that they operate independently of the side forms.
3. A mechanical float will not be required for the construction of residential street concrete pavement.

O. Footbridge

1. A movable bridge shall be provided when necessary to satisfactorily finish the pavement or construct joints. The bridge shall be designed and constructed so that it will not come in contact with the concrete.

P. Transverse Float

1. This float shall be made of metal and shall be at least 10 feet in length and of the box or channel type with a floating face at least 6 inches in width. It shall be constructed so as to be light in weight, rigid and free from warps.

Q. Vibrator

1. The vibrator for consolidating the concrete along the faces of the forms and adjacent to joints shall be an approved electric or mechanical vibrator of an internal type, not less than 2 inches in diameter. It shall have minimum frequency of 5,000 vibrations per minute for a tube 2 inches in diameter, 3,600 vibrations per minute for a tube 4 inches in diameter, or a proportionate frequency for an intermediate size.
2. At least two (2) vibrators shall be provided for each concrete paving unit on the project.
3. The vibrators used adjacent to the forms in conventional paving shall be connected with the equipment on which they are mounted such that vibration of the concrete will start automatically with the forward movement of the equipment and stop automatically whenever forward movement stops.

R. Form Tamper

1. A mechanical form tamper of approved design will be required on all projects. It shall be capable of thoroughly and uniformly compacting the soil under the forms.

S. Strike-Off for Reinforcement

1. An approved strike-off shall be used to level the concrete before placing the pavement reinforcement. It shall be adjustable and shall be supported by two (2) flanged wheels on each end which rest on the side forms.
2. It shall have sufficient weight and rigidity to retain its shape under working conditions and properly strike off the concrete.
3. An approved hand strike-off resting on the forms shall be used for irregular areas.

4. The strike-off may be a part of the concrete spreader or a finishing machine.
- T. Lane Tie Bar Installer
1. When not placed on approved chairs, lane tie bars shall be installed by use of an approved mechanical device.
- U. Reinforcement Carrier
1. Reinforcement not placed on chairs shall be transferred from the hauling equipment to a movable bridge which spans the pavement being cast or placed by other approved means which will not result in contamination of the concrete.
 2. The bridge shall be capable of carrying the reinforcement load without appreciably deflecting the forms.
- V. Joint Filling and Sealing Equipment
1. The equipment for filling and sealing joints shall be available for inspection and testing at least 48 hours prior to its use.
 2. The sealing machine shall include a mechanical mixer capable of mixing the sealing components into a uniform, homogeneous mass.
 3. The heating kettle for hot poured sealing material shall be of the indirect-heating or double boiler type, using oil as the heat transfer medium.
 - a. It shall have a thermostatically controlled heat source, a built-in automatic agitator, and thermometers installed to indicate both the temperature of the melted sealing material and that of the oil bath.
 - b. The CONTRACTOR shall demonstrate that the equipment proposed for use will consistently produce a joint sealer of proper pouring consistency.
 4. The hot-poured sealing material shall be applied directly from the heating kettle; the kettle shall be equipped with a pressure pump, hose and nozzle suitable for forcing the sealing material to the bottom of the joint and completely filling the joint.
 - a. The rate of application shall be controlled so as to completely fill the joint and not spill the material on the surface of the pavement.
 - b. The hose and nozzle shall maintain the temperature of the sealing materials so that the loss in temperature is not more than 10 degrees F between the nozzle and the heating tank.
 - c. Heat from a direct flame on the nozzle shall not be used to maintain the proper temperature of the sealing material.
 - d. The heating equipment shall be mounted on rubber-tired wheels, and only rubber-tired equipment shall be used to move the heating equipment on the pavement.
 5. Cold applied sealing compound shall be applied by means of pressure equipment that will force the material to the bottom of the joint and completely fill the joint without overflowing onto the surface of the pavement.
- W. Preformed Neoprene Joint Sealing Equipment
1. Equipment for applying the lubricant and installing the preformed joint seal may be either power or hand operated equipment suitable for installing the joint seal as recommended by the manufacturer.
- X. Sandblasting Equipment or Power Wire Brush
1. Sandblasting equipment shall be of proper size and capacity to obtain the cleaning specified and shall operate at a nozzle pressure adequate for the performance of the

Work.

2. Nozzles shall be of proper diameter in relation to the width of joint and shall be replaced as necessary due to enlargement by wear.
3. A power wire brush may be used in place of sandblasting equipment.

Y. Air Compressors

1. Air compressors shall be portable and capable of furnishing sufficient air to maintain a nozzle pressure adequate to remove all loose fragments of concrete and foreign material from the joints.
2. Suitable traps shall be employed to maintain the compressed air free of oil and moisture.

Z. Power Broom

1. A mechanical broom with pickup suitable for cleaning the pavement will be required.

AA. Concrete Saw

1. Two (2) self-propelled concrete saws which are adequately powered to cut hardened concrete to a minimum depth as shown on the Plans will be required. The minimum thickness of the saw blade shall be 3/16 inch.
2. Saws shall be equipped with suitable guards.

BB. Miscellaneous Equipment

1. All other small tools to completely and satisfactorily finish the Work, including straightedges for testing pavement and forms, shall be provided by the CONTRACTOR.

3.09 PLACEMENT OF FORMS

- A. Forms shall be placed and checked for line and grade at least 500 feet in advance of placing concrete.
- B. Forms shall be adequately staked and braced to resist the pressure of concrete and the thrust of the equipment.
- C. Forms shall have uniform bearing on the subgrade throughout their entire length and width.
- D. After setting the forms to grade, thoroughly tamp both the inside and outside with an approved mechanical form tamper.
- E. Forms shall be thoroughly cleaned before they are placed.
- F. Forms shall be neatly and tightly joined, and shall be securely staked by at least three (3) stakes per form.
- G. Forms shall be oiled before concrete is placed against them.
- H. Forms shall be checked for line and grade, after being set.
- I. Forms showing a variance from the staked line by more than 1/4 inch or from the staked grade by more than 1/8 inch in 10 feet shall be adjusted.
- J. Where the use of flexible forms are required, sufficient back bracing shall be provided to prevent undue deflection of the forms during placement of the concrete.

3.10 PLACING CONCRETE

- A. Placing of concrete should not commence or continue until the condition of the subgrade has been approved by the ENGINEER.
- B. The concrete shall be spread or distributed as soon as placed. If a mechanical spreader is not used, the concrete shall be deposited in a manner that requires a minimum of re-handling to avoid segregation and separation of materials. The concrete shall be deposited to a height sufficiently above grade so that when consolidated and finished it shall conform to the required

finished grades.

- C. Concrete along the faces of forms and adjacent to joints shall be consolidated and compacted to fill all voids.
- D. Forms shall not be vibrated to consolidate the concrete.
- E. When the pavement is placed in two (2) layers, the first layer may be cast 3 to 6 inches narrower on each side than the proposed pavement slab, so that the full depth of pavement, at the edges, will be cast with the second layer.
- F. The equipment shall vibrate concrete placed full depth for the complete width and depth of the pavement being placed. For concrete placed in two (2) layers, only the second layer will be required to be vibrated.
- G. The placing of concrete shall be continuous as much as possible between transverse joints.
- H. Whenever a temporary halt in operation occurs, the concrete and unfinished end of the slab shall be covered with wet burlap or plastic.
- I. If the interruption of Work continues for more than 20 minutes, a construction joint shall be placed, provided the proposed construction joint is 15 feet or more from the last joint for reinforced pavement and at least 10 feet or more from the last joint in plain concrete pavement.
 - 1. Sections of pavement shorter in lengths will not be permitted and, if constructed, shall be removed and replaced at the CONTRACTOR's expense.
- J. Integral curbs, where specified or required, shall be constructed monolithic with the pavement slab. The curb material shall be placed before the pavement has started its initial set and shall be of the same mix as the concrete pavement.
- K. Base and back forms will be required when constructing straight curbs, and back forms with templates of the required curb shape shall be used when constructing rolled and mountable curbs. The curb concrete shall be spaded sufficiently to eliminate all voids and tamped to bring the mortar to the surface, after which the curb shall be given a final finish to match the texture of the pavement.
- L. After removing forms, any visible areas of honeycomb or minor defects shall be immediately filled with mortar, having one part of Portland cement and two parts fine aggregate, and shall be applied with a wooden float.
- M. Where adjacent pavement lanes are constructed in separate pours, no equipment shall be operated upon recently placed concrete until the pavement has attained at least 85% of the design strength as determined by testing cores taken from the project, or until the pavement is 14 days old, at the option of the ENGINEER.
- N. Any equipment wheels operating on the pavement, shall operate at least 1 foot from the edge of the pavement. The equipment wheels shall be rubber-tired.
- O. The paver shall not be permitted on the new slab until the pavement has attained full design strength. The paver shall not operate on any new slab without using wood mats having an approved thickness and width to insure that the pavement will not be marked or structurally damaged.
- P. Pavers are not permitted to operate on residential streets.
- Q. If the curing compound is damaged, it shall be repaired by spraying additional curing compound on the damaged areas as soon as the Work is completed.
- R. The filler strip on pavement widening projects shall be poured as soon as possible but not later than the first working day following the placing of the slab.
- S. At all intersections and where access is required to property along the Project, construction shall be completed by gapping the proposed pavement. Load transfer, contraction, or end-of-pour joint devices shall be placed at the gapped ends of the pavement.

- T. In lieu of pavement gapping, the CONTRACTOR may elect to place a temporary bridge, of a design approved by the ENGINEER, to provide access. Furnishing, placing, maintaining, and removing the bridge shall be at the CONTRACTOR's expense.

3.11 PLACING PAVEMENT REINFORCING

- A. Where reinforcement is required, the sheets or mats shall be placed at the depth below the surface of the finished pavement, as shown on the Plans.
- B. Pavement reinforcement shall be shipped and delivered to the Work in flat sheets or mats.
- C. Adjacent sheets or mats shall be lapped, as indicated on the Plans, and shall be fastened to each other in no less than two (2) places in each pavement lane.
- D. Where the width of pavement varies, the reinforcement requirements shall be the same as called for on the Plans. Split sheets or mats may be used to conform to the particular pavement configuration. Side laps shall not be less than the spacing of the longitudinal wires or bars.
- E. On widening Projects where the pavement slab is less than 6 feet in width, 1/2 inch diameter longitudinal reinforcing bars may be substituted for standard reinforcement, providing the bars are spaced not more than 12 inches center-to-center. The first bar shall be not more than 3 inches from the edges of the widened slab, and the bars shall be lapped a minimum of 12 inches.
- F. Reinforcement shall be installed by one of the following methods:
1. Chairs upon which reinforcement is to be mounted shall support the reinforcement and shall have such bearing on the base that there will be no undue penetration of the base. The maximum spacing of the chairs shall be sufficient to maintain the reinforcement at the specified depth. The reinforcement shall be placed directly from the hauling unit unto the chairs.
 2. When reinforcement is placed between two (2) layers of concrete, the first layer shall be mechanically spread and struck off to the required depth below the proposed finished surface. The reinforcement shall be placed directly from the carrier onto the struck off concrete.
 3. Any area where the use of the mechanical spreader or mechanical strike-off is not feasible, the reinforcement shall be mounted on chairs.

3.12 JOINTS

- A. All longitudinal and transverse joints shall conform to the details and shall be constructed at the locations shown on the Plans or as directed by the ENGINEER.
- B. All joints shall be constructed true to line with their faces perpendicular to the surface of the pavement.
- C. Transverse joints shall be constructed at right angles to the centerline of the pavement, unless otherwise called for on the Plans or as determined by the ENGINEER. The joints shall not vary more than 1/4 inch from a true line.
- D. The surface of the pavement adjacent to all joints shall be finished to a true surface. Where indicated on the Plans, joints shall be edged to the radius shown or a minimum 1/4 inch radius. The surface across the joints shall be tested with a 10 foot straightedge as the joints are finished and any irregularities shall be corrected before the concrete has hardened.
- E. When pavement is laid in partial width slabs, transverse joints in the succeeding slabs shall be placed in line with the like joints of the first slab. In the case of widening existing pavements, transverse joints shall be placed as shown on the Plans, or as directed by the ENGINEER.
- F. Keyways, where required, shall be accurately formed with templates of metal, wood, or paper securely pinned in place. The gauge or thickness of the material in the templates shall be such that the full keyway, as specified, is formed in the correct location.

G. Longitudinal Joints

1. Longitudinal joints shall be a longitudinal lane tie joint with tie bars or a bulkhead construction joints with hook bolts. Where called for on the Plans a keyway shall be constructed in the bulkhead construction joint.
 - a. Longitudinal Lane Tie Joint (D)
 - 1) Longitudinal lane tie joints with tie bars shall be planes of weakness formed by sawing a groove in the hardened concrete according to the alignment, width and depth shown on the Plans.
 - 2) Tie bars of the type, diameter and length called for on the Plans, shall be placed at the required depth parallel to the finished surface, at right angles to the joint and at the uniform spacing also called for on the Plans or as approved by the ENGINEER.
 - 3) Bar chairs shall be used to support the lane tie bars or the lane tie bars may be installed by use of a mechanical device, approved by the ENGINEER. The placing of lane tie bars in the concrete by hand methods will not be permitted.
 - 4) The joint shall be sawed as soon as the concrete will not spall or not more than three (3) days after placement, and shall be completed before traffic of any kind uses the pavement. Immediately following the sawing of the joint, the slurry resulting from the sawing operation shall be completely removed from the joint, and the immediate area by flushing with a jet of water under pressure.
 - 5) The joint shall be blown out with a jet of compressed air to remove the flushing water.
 - (a) After the joint is dry it shall be cleaned out with a jet of compressed air with a working pressure of at least 90 psi and then shall be sealed in accordance with these specifications with an application of an approved hot or cold applied type joint sealing compound.
 - (b) The sealing compound shall be applied with approved pressure type equipment with the nozzle extending into the groove and the groove shall be filled until the sealer overlaps the pavement about 1/8 inch.
 - b. Longitudinal Bulkhead Construction Joint (D)
 - 1) Longitudinal bulkhead construction joints with hook bolts shall be used in part-width construction of concrete pavement and elsewhere as shown on the Plans, or as approved by the ENGINEER. The size, spacing, and depth of the hook bolts below the surface of the pavement shall be as shown on the Plans.
 - 2) For slip-form paving, lane ties of an approved type may be substituted for hook bolts and shall be spaced at 30 inch centers, unless otherwise indicated on the Plans.
 - (a) Lane ties for slip-form paving shall be placed in the concrete with a pneumatic powered installer or equipment producing equal results.
 - (b) Lane ties, which are not set with adequate consolidation of the concrete or are not within 30 degrees of being perpendicular to the pavement edge in a horizontal plane, shall be replaced with drilled-in expansion-anchored lane ties.
 - 3) Where a bulkhead joint is to be constructed, hook bolts and couplings shall be attached to the forms and shall be held in position during the placing and finishing of the concrete so as to permit the removal of the pavement forms without damage to the concrete or hook bolt assembly. The ends of the couplings shall be protected so that the concrete, dirt or other materials cannot

enter the couplings and prevent a satisfactory connection with either hook bolt.

- 4) Where hook bolts or lane ties are installed for use in future pavement widening, in curb, or curb and gutter construction, a rust preventive oil shall be inserted into the open end of the couplings immediately after removal of the pavement forms by means of a hand operated pump in sufficient quantity to completely cover the internal threads.
 - (a) After application of the protective oil a neoprene or plastic plugs shall be inserted into the ends of the couplings to completely seal the opening without protruding outside of the couplings more than 3/8 inch.
- 5) The concrete shall be edged with a tool having the radius of curvature and depth of lip shown on the Plans. The second pour of concrete shall be edged with a longer lipped edging tool than that used on the first concrete pour.
- 6) After the concrete has cured for the required time, all extraneous material shall be removed from the joint and the joint then sealed with an approved hot-poured or cold-applied elastic-type compound. The use of sandblasters and a jet of compressed air will be required to clean the joint before sealing.

H. Transverse Joints

1. Transverse joints shall be contraction joints, plane of weakness joints, dummy joints, expansion joints, construction joints, end-of-pour joints and pressure relief joints.
 - a. Contraction Joints (C)
 - 1) Contraction joints shall consist of a load transfer unit and a joint groove formed by sawing. Contraction joints shall be constructed as indicated on the Plans and shall be spaced a maximum of every 57' - 3" or as provided for elsewhere.
 - 2) The load transfer unit shall be epoxy coated dowel bars, spaced and arranged in the positions indicated on the Plans, accurately held in place by an approved metal device so as to be perpendicular to the plane of the cross section of the pavement and parallel to the centerline at a depth from the surface equal to 1/2 the thickness of the slab.
 - 3) This device shall consist of connected transverse and longitudinal members arranged to hold each dowel so firmly that its final position after concreting operations shall not vary more than 1/8 inch per foot of length from its designated line and grade. The device shall permit the joint to be completely assembled alongside the Work, and it shall be sufficiently rigid so that the joint can be lifted into place on the subgrade as a unit.
 - 4) One end of each dowel bar shall be free to move in the slab as the concrete contracts and expands.
 - (a) To accomplish this, 2/3 the length of each dowel shall be thoroughly lubricated with liquid asphalt. The liquid asphalt coating shall be applied to a sawed end of the dowel bar or, in the case of dowel bars with sheared ends, a metal cap shall be placed on the coated end of the dowel bar.
 - (b) The asphalt coating shall be sufficiently dry before using the dowels so that it will not be removed by handling and placing the dowels in the joint.
 - (c) The bars shall be installed so that the alternate bar on each side of the joint shall be the coated end of the bar.
 - b. Plane of Weakness Joints (WT)
 - 1) Plane of Weakness joints shall be placed in plain concrete pavements only and is to be constructed immediately after the finishing operation has been completed. A groove shall be formed in the plastic concrete with a metal

- forming bar to the depth indicated on the Plans.
- 2) A premolded bituminous filler strip shall be placed in the groove formed by the metal bar, from a bridge operating on the pavement forms.
 - 3) The concrete shall then be floated against the sides of the filler, and the joint edged to a 1/8 inch radius.
- c. Plane of Weakness Joint for Concrete Base Course (WTB)
- 1) Dummy joints shall be placed in reinforced concrete pavements only where called for on the Plans.
 - 2) They shall be constructed immediately after the finishing operation has been completed by forming a groove in the plastic concrete with a metal forming strip into which expanded polystyrene or other approved temporary filler is placed.
 - 3) The material shall be installed flush with the surface of the pavement and the area on both sides of the joint shall be finished. Transverse joints with a temporary filler shall not be edged.
 - 4) The pavement reinforcement shall be continuous through this joint.
- d. Expansion Joints (E) and (E1)
- 1) Expansion joints (E1) shall consist of a load transfer unit and a premolded fiber filler and shall be used on reinforced concrete pavements or where shown on the plans.
 - 2) Expansion joints (E) shall consist of a premolded fiber filler without the load transfer unit and shall be used for joints in concrete capping, end connections with structures or existing pavements, plain concrete pavements, and other places where shown on the Plans or where installation of the load transfer unit is not feasible; as approved by the ENGINEER.
 - 3) The load transfer units shall be assembled and the epoxy coated bars lubricated with liquid asphalt. The liquid-asphalt-coated end of each bar shall be provided with a close fitting metal cap.
 - 4) The fiber filler shall extend the full depth and width of the joint.
 - (a) After installation, the top shall be not less than 1/2 inch and no more than 1 inch below the finished surface.
 - (b) It shall be furnished in lengths not less than the lane widths being poured. Where additional partial lengths are necessary, the minimum length of load transfer unit and premolded fiber filler shall be sufficient to span two (2) dowel bar spacings.
 - (c) Where more than one (1) section is allowed and used in a joint, the sections shall be securely joined together.
 - 5) For expansion joints in curb lanes with integral curb or separate curb and gutter, the fiber filler used in the pavement shall extend completely through the curb section. The fiber filler placed in the curb above the slab shall be 1 inch in width.
 - 6) During installation, the joint shall be held in place by an approved installing device which shall be securely staked.
 - (a) The top edge of the filler shall be protected, while the concrete is being placed, by a metal channel cap of at least 10-gage material having flanges not less than 1-1/2 inches in depth.
 - (b) The channel cap shall be shaped to the proposed crown of the pavement and shall extend over the full length of the filler.

e. Pressure Relief Joints (PR)

- 1) The method of constructing a pressure relief joint shall be as indicated on the Plans.
- 2) The pressure relief joint material shall be a flexible, low-density, expanded, extruded polyethylene plank. This joint material shall be cut off to 1/2 inch below the top of the pavement surface and shall extend entirely through and to within 1/2 inch of the face and top of the curb.

f. End of Pour Joints and Construction Joints

- 1) End of pour joints in reinforced pavement shall be formed by placing a bulkhead and installing a load transfer device, as specified for contraction joints, except that the ends of the dowel bars shall not be lubricated. The load transfer device shall be so installed that each dowel bar will be embedded in the concrete for 1/2 of its length.
 - 2) When the next pour is made, a space for hot-poured rubber joint filler shall be provided by placing a temporary filler in the fresh concrete.
 - 3) End-of-pour joints shall be constructed using 2-piece dowels and a bulkhead, and shall be placed where it is anticipated that three (3) days or more will elapse between the casting of adjacent pours.
 - 4) Construction joints and end-of-pour joints shall be sealed as specified for transverse contraction joints.
 - 5) End of pour joints in plain concrete pavements shall be formed by placing a bulkhead, fiber keyway, and installing 1/2 inch diameter deformed bars, 30 inches in length, at 18 inch intervals across the end of the pavement.
 - 6) The pavement across the end of both slabs shall be thickened and the joint shall be edged and sealed.
2. All transverse joints in a concrete pavement shall extend entirely through the integral curb or separate curb and gutter. The material used to construct the joint in the curb shall be of the same kind as provided for the pavement.
 3. Bituminous fiber filler shall be used to construct the expansion joints in the integral curb of reinforced concrete pavements.
 - a. The thickness of the fiber filler material in the curb above the gutter shall be 1 inch.
 - b. The joint material shall be precut so as to conform to the geometric shape and cross-sectional area of the curb, and shall be placed in intimate contact with the filler material in the pavement.
 - l. The edges of all transverse joints in the integral curb shall be rounded with an approved finishing tool, having a radius of 1/4 inch.

3.13 CONSOLIDATING AND FINISHING

- A. The sequence of operations after the placing of concrete shall be:
 1. striking off and consolidating,
 2. floating,
 3. edging,
 4. and final finishing with burlap drag.
- B. Mechanical methods shall be employed to strike off and consolidate or compact the concrete, except in gapped areas or where the pavement width will not permit the use of machine methods. Gaps less than one (1) joint opening in length may be finished by hand methods,

provided they are finished in single-lane widths.

- C. Strike off, consolidate and compact the concrete to such an elevation that when all finishing operations are completed, the surface will conform to the required finished grade and cross section.
 - 1. At least 4 inches of concrete above the finished pavement grade shall be maintained ahead of the screed for its entire length.
 - 2. In consolidating the surface of the pavement, on residential street construction when a single screed finishing machine is used, it shall operate over each section of the pavement twice.
 - 3. Only sufficient mortar shall be worked to the surface to provide a dense smooth finish.
 - 4. Excessive operation of the machine over a given area will not be permitted. Segregated particles of coarse aggregate which may collect in front of the screed shall be thoroughly mixed by hand with the mass of concrete already on the subgrade.
- D. If it is not possible to use mechanical equipment on irregular areas, an approved, self-propelled vibratory screed shall be employed to strike off and properly consolidate the concrete surface to the required finish grade.
 - 1. The entire area of the pavement shall be consolidated to insure an absence of voids.
 - 2. Where it is not possible to use a vibratory screed, a hand strike board of an approved design, will be permitted.
 - a. Strike-off boards shall be moved forward with a combined longitudinal and transverse motion, with neither end raised from the side forms during the process.
 - b. A slight amount of excess concrete shall be kept in front of the front edge at all times.
 - c. When striking off and consolidating by hand, pours will be limited to single lanes or 1/4 of intersections.
- E. After striking off and consolidating, the surface shall be made uniform by longitudinal or transverse floating by a mechanical method unless the pavement is permitted to be constructed in single lane widths.
- F. Where mechanical floating is an integral part of the operation of a slip-form paver, separate mechanical floating methods will not be required.
- G. Mechanical longitudinal floating will not be required for residential street construction.
- H. When mechanical equipment is not used for floating, a transverse float at least 10 feet in length shall be operated across the pavement by starting at the edge and slowly moving to the center and back again to the edge. The float shall then be moved ahead 1/2 of its length and the operation repeated.
- I. Care shall be taken to preserve the crown and cross section of the pavement.
- J. The float finishing operation shall not proceed until the concrete has attained a consistency so that no excess concrete is carried ahead of the float but the entire surface can be floated and sealed.
- K. Immediately following the float finishes and while the concrete is still plastic, the CONTRACTOR shall test the slab surface for trueness by means of a 10 foot straightedge or acceptable float.
 - 1. The straightedge shall be placed at the center of the slab with the blade parallel to the centerline and pulled slowly and uniformly to the edge. This operation shall be repeated until the surface of the concrete is free from irregularities and makes contact at all points with the bottom of the straightedge. The straightedge shall then be moved forward 1/2 its length and the operations repeated.

2. Depressions found in the surface shall be filled with fresh concrete and consolidated by floating with a long-handled float not less than 10 foot in length. This float may also be used to smooth sections of the surface that may have become rough or torn by dragging with the straightedge.
- L. For pavement constructed by the slip-form method, the edge settlement shall be determined as soon as practical after paving operations begin. Edge settlement in excess of 3/8 inch shall be corrected before the concrete has hardened.
1. When edge settlements in excess of 1/4 inch persist, paving shall be suspended and operational corrections made before the ENGINEER will permit the resumption of paving. If the CONTRACTOR consistently fails to construct pavement within these tolerances, the use of slip-form methods shall be discontinued and pavement placed by means of conventional forms.
 2. When paving is accomplished by the slip-form paving method, all mortar paste shall be wiped from the sides of the slab.
 3. The surface shall then be tested for smoothness with the straightedge. During this operation, the contact of the straightedge with the concrete shall be uniform over the entire length tested. At the time of testing, the surface shall be free from soft mortar or excessive water. The testing straightedge shall be used for this purpose only.
- M. Where the float finisher method is not utilized, as soon as the hand floating is completed, all laitance, surplus water, and inert material shall be worked entirely off the pavement and the surface made smooth by dragging with a rigid straightedge 10 foot in length and the surface shall be tested.
- N. As soon as all excessive moisture has disappeared and while it is still possible to produce a uniform surface of gritty texture, the pavement shall be finished by dragging a seamless strip of damp burlap or cotton fabric, not less than 5 feet nor more than 6 feet in width, over the full width of the pavement.
1. The burlap or cotton drag shall be pulled by a bridge supported on a pavement forms. The fabric shall be renewed as often as necessary to obtain the required texture.
- O. Immediately after the initial finishing with burlap, the edges of the slab and all specified joints shall be finished with an edging tool to the radii indicated on the Plans. The pavement shall then be given a final finish by dragging the damp burlap or cotton fabric over that portion of the pavement disturbed by the edging operation.

3.14 SURFACE REQUIREMENTS

- A. All high spots in the surface, exceeding 1/8 inch from the straightedge but not more than 1/2 inch in 10 feet shall be removed or reduced by rubbing with a carborundum brick and water until contact with coarse aggregate is made. If contact with coarse aggregate is made before reaching an acceptable tolerance, such high spots shall be removed by an approved surface-grinding machine before acceptance of the pavement.
- B. High spots in excess of 1/2 inch in 10 feet will be evaluated by the ENGINEER and if the Work is rejected, it shall be removed and replaced at the CONTRACTOR's expense.
- C. The CONTRACTOR shall take immediate steps to eliminate the cause of the defective surface.

3.15 CURING

- A. After the finishing operations have been completed and immediately after the free water has left the surface, the surface of the slab shall be completely coated and sealed with a uniform layer of white membrane curing compound.
- B. The compound shall be applied in a continuous uniform film by means of mechanically pumped pressure sprayer equipment at a rate of 1 gallon per 200 sft of surface. The curing compound shall not be thinned.

- C. The equipment shall provide adequate stirring of the compound during application. The equipment for applying the compound must be on the Project and approved by the ENGINEER before Work is started.
- D. Hand-spray equipment will be permitted only for the application of the curing compound over the sides of the slab, and for any minor damaged areas.
- E. If rain falls on the newly coated pavement before the film has dried sufficiently to resist damage, or if the film is damaged in any other way, the CONTRACTOR will be required to apply a new coat of material to the affected areas.
- F. The treated surface shall be protected by the CONTRACTOR from injury for a period of at least seven (7) days. All traffic, either foot or otherwise, will be considered as injurious to the film of the applied compound. A minimum of foot traffic will be permitted on the dried film as necessary to properly carry on the Work including the removal of any high spots, provided any damage to the film is immediately repaired by the application of a second coat of the compound.
- G. Immediately after the forms are removed, the entire area of the side of the slab shall be coated with the curing compound at the rate specified for the pavement surfacing.
- H. The CONTRACTOR shall provide on the Project sufficient burlap or polyethylene coverings for the protection of the pavement in case of rain or breakdown of the spray equipment. Failure to provide proper curing will be considered as sufficient cause for immediate suspension of the concreting operations.

3.16 REMOVAL OF FORMS

- A. Forms may be removed from freshly placed concrete after it has set for 12 hours, provided it can be done without damage to the pavement or curb edge. If during form removal the pavement or curb edge is being damaged, the form removal shall cease until the concrete has attained greater strength.
 - 1. The period of time for removing forms may be increased or decreased when approved by the ENGINEER.
- B. Immediately after removal of the forms, the ends of all joints shall be cleaned, and any visible areas of honeycomb or minor defects shall be filled with mortar, composed of 1-part Portland cement and two (2) parts fine aggregate from the same source as used in the pavement, applied with a wooden float.
 - 1. Immediate steps shall be taken by the CONTRACTOR to correct the conditions contributing to these defects.
- C. The sides of the pavement shall be sprayed with curing compound immediately upon removal of the forms, except where honeycombed areas are to be pointed, and then immediately cured.
- D. Forms and pins shall not be placed on new pavement that is being cured with membrane.

3.17 SAWING JOINTS

- A. All contraction joints, longitudinal lane-tie joints with tie bars, and end of pour joints shall be sawed.
- B. Joints shall be sawed before any traffic is permitted on the pavement.
 - 1. The concrete saw will be permitted on the pavement to saw the joints, but the water supply truck will not be permitted on the pavement until the compressive strength is not less than 3,000 psi.
 - 2. When permitted on the pavement, the water supply truck must be kept a minimum of 50 feet behind the sawing operation.
- C. At least two (2) approved concrete saws shall be available for use at all times, and one saw shall be capable of sawing a joint groove 2-1/2 inch deep.

- D. The saw cut for transverse end-of-pour joints shall be made to receive the joint sealing material.
- E. Longitudinal lane-tie joints with the tie bars shall be sawed in accordance with the alignment and dimensions indicated on the Plans.
- F. For joints formed in one operation, the joint groove shall be sawed before any transverse cracks develop. Raveling or spalling along the joint shall be repaired as specified elsewhere in this Section.
- G. Transverse contraction joints shall be sawed in two stages:
 - 1. Stage 1 sawing
 - a. The first stage shall be a relief cut directly over the center of the load transfer assembly. The initial relief cut shall be made as soon as the saw can be placed on the freshly poured concrete, and the sawing shall continue as long as the pavement can support the saw without making or appreciably raveling of the joint.
 - b. When water is not used in the sawing operation, membrane curing compound shall be applied immediately.
 - c. When water is used in the sawing operation, the slurry resulting from the sawing operation shall be completely removed from the cut and from the immediate area by flushing with a jet of water. Additional membrane curing compound shall be applied within 12 hours after the relief cut has been made.
 - 2. Stage 2 Sawing
 - a. Second stage sawing of joints shall not start until the concrete has cured for a minimum of 48 hours. The joint groove shall be centered over the relief cut and sawed to the specified dimensions shown on the Plans plus any increase in width of the relief cut due to shrinkage or contraction. Groove width tolerance shall be $\pm 1/16$ inch.
 - b. Joints sawed without the use of water shall be blown clean of all foreign material by a jet of compressed air.
 - c. If water was used in the sawing operation, the slurry resulting from the sawing operation shall be completely removed from the groove and the immediate area by flushing with a jet of water and then blown dry with compressed air.
- H. All transverse joint grooves shall receive a final cleaning with a jet of compressed air adequate to remove all foreign material, just prior to permanent sealing.
- I. If the specified seal is not installed within seven days of final sawing, the joint groove shall be temporarily sealed with a suitable material or device to prevent the infiltration of foreign material.
- J. Traffic shall not be permitted over the full width joint grooves prior to the installation of either the permanent seal or temporary seal.

3.18 PATCHING JOINTS

A. General

- 1. After the joints have been sawed and cleaned, they shall be inspected for spalls and voids.
- 2. All loose, unsound or damaged concrete shall be removed to the satisfaction of the ENGINEER.
- 3. Spalls and voids will be classified as minor, intermediate or major spalls and shall be repaired accordingly.

B. Minor Spalls

1. Any spalls or voids which have increased the specified size of the joint groove beyond any of the following limits, but less than 36 square inches, shall be repaired by patching with an approved epoxy mortar before the seal is installed.
 - a. Spalls which extend more than 1/4 inch from the joint face and over 1/2 inch below the surface of the pavement.
 - b. Spalls which extend more than 1/4 inch from the joint face and 2 inches or more in length, regardless of the depth of spall below the surface of the pavement.
 - c. Void areas larger than 1/2 inch in diameter in the upper 1 inch of the joint face or larger than 1 inch in diameter regardless of location.
2. The spalled concrete surface shall be thoroughly cleaned by sandblasting, power-wire brushing, or hand-wire brushing. The patch area shall then be blown clean with a jet of compressed air.
3. A heavy polyethylene sheet or a rigid material shall be inserted into the joint groove and held tightly against the joint face that is to be patched.
4. The concrete shall be clean and dry when the epoxy resin mortar is placed. The surface shall be made free of frost by heating with a clean source of heat, approved by the ENGINEER, until dry. Care shall be taken not to damage the concrete by heating.
5. The epoxy binder will be a mixture of two (2) parts epoxy resin to one (1) part curing agent by volume, or as approved by the ENGINEER.
6. The epoxy resin compound shall be mixed in a clean metal or polyethylene container with approved stirrer operating at 250 to 500 rpm. While the epoxy resin is being mixed, the curing agent compound shall be gradually added. The mixture shall then be stirred for a minimum of three (3) minutes until it is uniform.
7. After the epoxy binder is thoroughly mixed, a small portion shall be reserved for priming.
 - a. Dry MDOT 2NS sand shall be uniformly blended into the balance of the mixture to give an epoxy mortar of stiff or trowellable consistency. One part of mixed binder to about 3.5 parts of dry sand, by volume, will usually give a workable mix.
8. The spalled surface shall be primed with the freshly mixed epoxy binder scrubbed into the surface with a suitable applicator to insure complete wetting and coverage of all areas to which the epoxy mortar must bond.
9. Immediately after priming, the epoxy mortar shall be placed in the spalled area and finished to the shape of the original pavement surface. If the bond coat is not tacky when the mortar is placed, a second application shall be made. The edge of the patch shall conform with the rest of the joint groove.
10. Dry MDOT 2NS sand shall be sprinkled onto the fresh epoxy mortar surface to eliminate any gloss. After the epoxy mortar has cured sufficiently so that it will not be damaged during sealing operations, the polyethylene insert shall be carefully removed.
11. All joints shall receive a final cleaning with a jet of compressed air to remove all foreign material.
12. When the temperature of the air and the pavement is above 50 degrees F, the hot poured elastic type joint seal may be placed on the day following the placing of the epoxy resin mortar patch. When the temperature of the air and the concrete is below 50 degrees F, the time of curing required for the epoxy mortar shall be as determined by the ENGINEER.

C. Intermediate Spalls

1. Any spalls larger than 36 square inches, but not extending below the reinforcing mat, shall be repaired by sawing and chiseling out the unsound concrete and patching with Portland cement mortar.

2. A saw cut at least 1 inch deep shall be made parallel to the joint groove at the outer extremity of the spalled area. The concrete shall be chipped out to the saw cut so that a vertical face is present at the back of the repair area, and the two ends of the repair area shall be trimmed to approximately vertical faces.
3. The area to be repaired shall be sandblasted to remove all loose particles and then blown clean with a jet of compressed air to remove the sand and all other foreign materials.
4. The repair area shall be flushed with clean water and the excess water shall be blown out with compressed air.
5. A heavy polyethylene sheet or a rigid material shall be inserted into the joint groove and held tightly against the joint face that is to be patched.
6. The bottom and vertical faces of the repair area shall be primed with a grout of creamy consistency made with a 1:1 mixture of Portland cement and MDOT 2NS sand with water.
7. The prime coat will be scrubbed into the surface with a suitable applicator to insure complete wetting and coverage of all areas to which the Portland cement mortar must bond.
8. The cement grout shall be carefully applied to the rough surfaces of the spall area and shall be applied immediately prior to placing of fresh mortar so that the prime coat is wet when covered by mortar.
9. The Portland cement patching material shall be tamped into the repair area and finished level to the pavement surface.
 - a. This Portland cement mortar shall consist of 1-part Portland cement to two (2) parts MDOT 2NS sand with a water content of not more than 4 gallons per sack of cement.
 - b. A liquid air-entraining agent to maintain an air content of 8% to 11% shall be added.
 - c. Calcium chloride in an amount of one (1) percent of the cement content may be added as an accelerator, if approved by the ENGINEER.
10. The edge of the patch at the joint face shall conform with the rest of the joint groove.
11. White membrane curing compound shall be sprayed on the patch surface immediately after the mortar is cast and finished.
12. After 72 hours the polyethylene form shall be carefully removed and all patched joints shall receive a final cleaning with a jet of compressed air to remove all foreign material.

D. Major Spalls

1. When a joint is damaged beneath the depth of the reinforcing mat, it shall be considered a major repair. These major repairs shall be handled on an individual basis under the direction of the ENGINEER.

3.19 SEALING JOINTS

- A. All transverse expansion, contraction, construction, and longitudinal bulkhead construction joints shall be filled and sealed with an approved hot-poured elastic type compound.
- B. Longitudinal lane-tie joints shall be pressure filled and sealed with either an approved hot-poured or cold-applied elastic type compound. These sealing compounds shall not be placed when the atmospheric or pavement temperatures are less than 50 degrees F or when the weather is rainy or foggy.
- C. After the shoulders are completed and the pavement has cured, the joints and pavement surfaces on each side of the joints shall be cleaned of all extraneous matter.
 1. The cleaning shall be done by sandblasting or other methods approved by the ENGINEER that will be equally effective in cleaning the concrete.

2. The dust and sand present after the sandblasting or cleaning shall be removed by a jet of compressed air. Hand tools shall be used to remove stones and other foreign materials from the joint groove.
- D. Immediately after the joints are cleaned with the compressed air, and with the surface of the concrete in the joint dry, the joint shall be sealed with an approved hot-poured elastic type compound.
- E. The hot-poured compound shall be melted in an approved double boiler type kettle. Direct heating will not be permitted. Also, any sealing material heated in excess of the safe heating temperature shall not be used in the Work.
- F. During the process of pouring the joints, the ENGINEER may, at his discretion, require that sufficient compound be taken from the melting unit to make flow tests.
- G. The ENGINEER may require the CONTRACTOR to modify his method of heating or of charging the heating unit with compound that will produce satisfactory results.
- H. Pouring shall be from the melting kettle equipped with an approved pressure pump hose and nozzle.
- I. When authorized by the ENGINEER, the sealing compound may be poured with a hand-type pouring pot for curbs and short miscellaneous joint lengths, provided a satisfactory joint is obtained.
- J. Pouring of the sealing compound shall be done so as to fill the joint to 1/4 inch below top of pavement. Any sealing compound spilled on the surface of the pavement shall be removed immediately.
- K. After the first pour has cooled to the temperature of the pavement and settled, a second pour shall be made to bring the sealing compound to 1/4 inch of the surface of the pavement.
- L. Traffic shall not be permitted over the poured joint until the compound has hardened sufficiently to resist pickup.
- M. To protect hot-poured and cold-applied sealing compound while it is curing and to prevent pickup by traffic, the sealed joint shall be covered with a strip of paper, 1-1/2 inches wide, or other approved means, immediately following application of the compound. The paper strip shall be left in place until worn off by traffic.

3.20 TRAFFIC CONTROL

- A. Provide all measures necessary to protect and maintain traffic and to protect the Work in accordance with Section 01 5000, Temporary Facilities and Controls, and with the Michigan Manual of Uniform Traffic Control Devices (M.M.U.T.C.D.).

3.21 PROTECTION AGAINST RAIN

- A. The CONTRACTOR shall adequately protect the new concrete from the effects of rain before the concrete has sufficiently hardened.
- B. For this Work, the CONTRACTOR shall have available on the job site at all times enough burlap or 6 mil thick polyethylene film to cover and protect one day's Work.
- C. When rain appears eminent, all operations shall stop and personnel shall begin covering.
- D. As soon as the rain ceases, the concrete shall be uncovered and the surface burlap dragged where necessary.
- E. Curing compound shall be applied to any areas where the compound has been disturbed or washed away. Protection of the new concrete against rain shall be at the CONTRACTOR's expense.

3.22 COLD WEATHER PROTECTION

- A. Any time there is a danger of freezing temperatures, the CONTRACTOR shall have available on-site a sufficient amount of clean, dry straw or hay or polyethylene film or other approved materials to cover at least one (1) day's production. Cold weather protection shall be at the CONTRACTOR's expense. The source of the temperature shall be taken from forecasts prepared by the local weather bureau, recognized as the Official Weather Bureau for the area the new Work is being constructed. The predicted low temperature shall be that forecast to occur during the next 24 hours.
- B. Frozen material shall not be charged into the mixer at any time.
- C. Frost or ice shall be removed from the forms and any steel used in the pavement, prior to placing concrete.
- D. Concrete shall not be placed directly upon a frozen subgrade. The subgrade shall be covered with a layer of straw or hay 12 inches in thickness to protect it against freezing. The straw or hay shall be removed from the finished subgrade immediately ahead of paving operations and piled along the line of construction for use in covering the finished pavement. Prior to the placing of concrete, the subgrade shall be cleaned of loose straw and otherwise prepared in a manner satisfactory to the ENGINEER. Other covering materials as approved by the ENGINEER may be used to prevent subgrade freezing.
- E. To accelerate hardening of the concrete when the temperature of the air in the shade and away from artificial heat is between 40 and 45 degrees F, calcium chloride shall be added to the mix at the rate approved by the ENGINEER. The calcium chloride shall be spread on the materials immediately before discharging into the drum of the mixer. A method approved by the ENGINEER, shall be used for measuring the amount of dry calcium chloride to be added to each batch of concrete. The calcium chloride shall not be placed in contact with the cement.
- F. Immediately after finishing of the concrete and as soon as hardening of the concrete will permit, the pavement shall be covered and the protective covering shall remain in place until the concrete has developed a compressive strength of not less than 3,000 psior for a minimum period of 14 days or as approved by the ENGINEER.
- G. The protective covering shall be placed around and over the forms and it shall extend beyond the edge of the pavement for a distance at least equal to the depth of covering required.
- H. When removing forms, the protective covering should be removed for as short a time as possible and should be replaced promptly to prevent loss of heat.
- I. The mixing and placing of concrete shall stop in sufficient time each day to permit finishing of the concrete and the placing of the required protective covering during daylight hours.
- J. The requirements specified herein for the curing and protection of concrete in cold weather are minimum requirements, and the CONTRACTOR shall be responsible for the quality and strength of the concrete placed. Any concrete injured by frost action shall be removed and replaced at the CONTRACTOR's expense.
- K. Between October 15 and May 15, when the predicted low temperature is to be below 35 degrees F at any time within 72 hours after placing the pavement, the pavement shall be protected and such protective covering shall remain in place until the concrete has developed a compressive strength of not less than 3,000 psi, or for a minimum period of 14 days, unless otherwise authorized by the ENGINEER.
- L. Special Protection
 - 1. No pavement may be placed between October 15 and May 15, unless it is specifically provided for in the Contract Documents, or authorized by the ENGINEER, except that in no case shall concrete be placed when the predicted high temperature is to be below , without written permission of the ENGINEER. When paving is permitted during the period, the following requirements shall apply:

- a. The temperature of the concrete at the time it is placed on the subgrade shall be not less than 50 degrees F, nor more than 85 degrees F.
- b. In order to maintain a mix temperature between 50 and 85 degrees F the mixing water or the aggregates, or both, shall be heated as required by the ENGINEER. The water and the aggregates shall be heated to a temperature of not more than 150 degrees F.
 - 1) The heating of aggregates shall be done by the use of steam pipe under the aggregate piles, or by free steam discharged into the aggregate piles, or by steam pipe in the batching bins.
 - 2) The heating of the water and the aggregates shall be controlled so that there will not be any large differences in temperature from batch-to-batch.
- c. When there is any danger of the predicted low temperature dropping below 35 degrees F all the necessary materials for covering and protecting the concrete, equipment for heating the water and aggregates, when required, and calcium chloride shall be on the Project and available for immediate use for the required method of curing and cold weather protection before any pavement is placed.
- d. For predicted low temperatures from 35 to 25 degrees F either 1-layer of waterproof paper blankets or 12 inches of loose dry straw or hay shall be placed.
- e. For predicted low temperatures of 25 to 20 degrees F 1-layer of waterproof paper blankets and 12 inches of loose dry straw or hay shall be placed.
- f. For predicted low temperatures less than 20 degrees F the minimum requirement for cold weather protection will be 1-layer of waterproof paper blankets and 12 inches of loose dry straw or hay overlaid with a waterproof protective covering consisting of tarpaulins, paper blankets, polyethylene sheeting or other approved material.
- 2. When temperature are such that special protection is required as specified above, all concrete placed within the proceeding 72 hours shall be similarly protected.
- 3. When special protection is started, it shall be continued until design strength is reached in accordance with the above requirements unless warmer temperatures prevail for a period of at least 48 hours. Permission to eliminate special protection for such a period shall be as approved by the ENGINEER.
- M. Protection of the new concrete against cold weather including ordinary and special protection shall be at the CONTRACTOR's expense.

3.23 CONCRETE TEMPERATURE LIMITATIONS

- A. Concrete shall not be placed when the temperature of the concrete at the point of placement is above 90 degrees F.

3.24 CURB DROP

- A. Curb drops shall be provided for existing and future sidewalk ramps, for approaches for existing driveways and at other locations as determined by the ENGINEER.
- B. Curb drops for sidewalks shall be in accordance with the current rules and regulations of Act 8, Michigan PA 1973, as amended. Curb drops for drive approaches shall be centered with the existing driveway at the property line.
- C. The width of the residential curb drop shall be equal to the width of the driveway determined at the property line plus four feet. Unless otherwise approved by the ENGINEER, the minimum width of the residential curb drop shall be 14 feet.

3.25 SHOULDERS

- A. The shoulders shall be constructed according to the lines, grades, and cross section shown on the Plans and as specified for the particular type of shoulder material required. The shoulders shall be done in such sequence with the surfacing operations that they will be completed not

more than seven (7) days after the expiration of the curing period, unless otherwise directed by the ENGINEER.

- B. Aggregate shoulders, when called for, shall be constructed according to the requirements specified under Section 32 1123, Aggregate Base Courses.

3.26 CLEANUP

- A. After the concrete has gained sufficient strength, but no sooner than within 12 hours, the fixed forms shall be removed and the spaces on both sides shall be immediately backfilled with sound earth of topsoil quality.
- B. The backfill shall be compacted, leveled and left in a neat, workmanlike condition.
- C. At a seasonally correct time approved by the ENGINEER, the disturbed area shall be raked, have topsoil placed thereon, and fertilized and seeded per the requirements of Section 32 9219, Seeding, sodded in accordance with Section 32 9223, Sodding, or _____

3.27 OPENING PAVEMENT

- A. The ENGINEER reserves the right to require that curing operations be discontinued when the concrete has reached 85% of the design strength, and to require that the shoulders be completed and the slab be opened to traffic.

3.28 MONUMENT BOXES

- A. All government, plat, and street intersection monuments within existing or proposed pavement shall be preserved by enclosing in standard monument boxes.
- B. Monument box castings shall be furnishing and installed by the CONTRACTOR.
- C. Existing monument boxes shall be adjusted to meet the proposed pavement elevation by removing the castings and resetting to the required elevation.
- D. Support for the monument box shall be concrete bedding, so constructed as to hold them firmly in place.
- E. The adjacent pavement, curb, or curb and gutter shall be replaced to the new elevation, condition and kind of construction, unless otherwise provided.

3.29 TESTING

- A. During the course of the Work, the ENGINEER may require the taking of standard test cores and cylinders, by a testing laboratory acceptable to the OWNER and approved by the ENGINEER.
- B. The making of cylinders, the drilling of cores and testing shall be at the expense of the OWNER.
- C. For each lane of Work:
 - 1. A minimum of one (1) cylinder for testing compressive strength shall be made for each 500 feet, or fraction thereof, or as determined by the ENGINEER.
 - 2. A minimum of two (2) cores for testing compressive strength and for checking thickness shall be drilled each 500 feet, or fraction thereof.
- D. Slump tests for consistency of Portland cement concrete shall be made in accordance with ASTM C143/C143M and ASTM C172/C172M.
- E. In the event the test results on a core indicates a deficiency in either thickness or compressive strength or in the event the test results on a cylinder indicates a deficiency in compressive strength, the following adjustments in the unit price for concrete shall be made based on the average of three (3) cores:
 - 1. Thickness

Under Required Thickness		Percent of Reduction in Unit Price
0 to 1/4 inch		None
by more than 1/4 but not exceeding 1/2 inch		20
by more than 1/2 but not exceeding 1 inch		50
by more than 1 inch		Remove & Replace
2. Compressive Strength		

Under Required Compressive Strength		Percent of Reduction in Unit Price
0 to 150 psi		None
by more than 150 but not exceeding 300 psi		20
by more than 300 but not exceeding 500 psi		50
by more than 500 psi		Remove & Replace
3. Reduction in the unit price are additive, that is if an area is deficient by 3/8 inch and is under strength by 200 psi, the total reduction is 20% plus 20% or a reduction of 40%.		
4. The area of a deficient core shall be determined by the drilling and testing of two (2) additional cores, one (1) on each side of the deficient core and 20 feet from it, when possible.		
5. The extra core drilling and testing shall be at the CONTRACTOR's expense.		

END OF SECTION

SECTION 32 12 16 BITUMINOUS PAVING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section includes bituminous paving complete with bituminous materials; bituminous mixtures; installation of bituminous base course, bituminous wearing course, and bituminous curbs; construction of bituminous pavement, sidewalks, drive approaches, and tennis courts; cold milling; and pulverizing existing pavements.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 33 00 - Submittal Procedures
- C. Section 01 89 00 - Site Construction Performance Requirements
- D. Section 31 11 00 - Clearing and Grubbing
- E. Section 31 23 13 - Subgrade Preparation
- F. Section 32 11 23 - Aggregate Base Courses
- G. Section 32 17 23 - Pavement Markings

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 1. AASHTO M 17: Standard Specification for Mineral Filler for Bituminous Paving Mixtures
 2. AASHTO M 29: Standard Specification for Fine Aggregate for Asphalt Mixtures
 3. AASHTO M 81: Standard Test Methods and Practices for Emulsified Asphalts
 4. AASHTO M 82: Standard Specification for Cutback Asphalt (Medium-Curing Type)
 5. AASHTO T 180: Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
 6. ASTM D244: Standard Test Methods and Practices for Emulsified Asphalts
 7. ASTM D692/D692M: Standard Specification for Coarse Aggregate for Asphalt Paving Mixtures
 8. ASTM D1073: Standard Specification for Fine Aggregate for Asphalt Paving Mixtures
 9. ASTM D2026: Standard Specification for Cutback Asphalt (Slow-Curing Type)
 10. ASTM D2027/D2027M: Standard Specification for Cutback Asphalt (Medium-Curing Type)
 11. ASTM D2028: Standard Specification for Cutback Asphalt (Rapid-Curing Type)
 12. American Association of State Highway and Transportation Officials
 13. Michigan Department of Transportation (MDOT), Standard Specifications for Construction, latest edition
 14. Michigan Asphalt Paving Association

1.04 ALLOWABLE TOLERANCES

- A. Following the final rolling, the surface will be tested longitudinally using a 10 foot straightedge at locations selected by the Engineer. The variation of the surface from the testing edge of the straightedge between any two (2) contacts with the surface shall at no point exceed the following limits:

- B. For Bituminous Base Course Mixtures:
 - 1. Multiple Courses:
 - a. 3/8 inch for top course
 - b. 3/4 inch for lower courses
- C. For Bituminous Surface Course Mixtures:
 - 1. Multiple Courses:
 - a. 1/8 inch for top course
 - b. 1/4 inch for lower courses
 - 2. Single Course:
 - a. 1/4 inch
- D. Variations in excess of the specified tolerance shall be corrected as determined by the Engineer.

1.05 MATERIAL REPORTS

- A. At the request of the Engineer, the Contractor shall provide the Engineer with certification that the various materials to be used conform to the Standards referred to in the Specifications.
- B. Contractor shall provide the Engineer, or his authorized representative, with the certified batch plant delivery tickets prior to the placing of the materials.
- C. Contractor shall supply the Engineer with a certified job mix design for each type of bituminous mixture proposed for use on this Project.

1.06 TEST REPORTS

- A. The testing lab shall provide the Engineer with two (2) certified copies of the test results of the mix design and the thickness of the bituminous paving material.
- B. The core drilling, testing for mix design and thickness, and the certification of the test results shall be performed by a testing laboratory approved by the Engineer.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Comply with the requirements for bituminous concrete installation due to outside ambient air temperatures specified under this Section.

PART 2 PRODUCTS

2.01 BLENDED AGGREGATE

- A. Blended aggregate shall conform to:
 - 1. AASHTO M29
 - 2. ASTM D692/D692M
 - 3. ASTM D1073
 - 4. MDOT Sections 501 and 902

2.02 MINERAL FILLER

- A. The mineral filler gradation shall conform to:
 - 1. AASHTO M17
 - 2. Mineral filler, 3MF, as specified in MDOT Section 902.11

2.03 ANTI-FOAMING AGENTS

- A. The anti-foaming agents shall conform to anti-foaming agents, as specified in:

1. MDOT Section 904.

2.04 ASPHALT BINDER

- A. Asphalt binder for use in production of bituminous mixtures shall be performance graded asphalt binder:
 1. PG58-28 per MDOT Section 904 unless otherwise indicated on the Plans.

2.05 LIQUID ASPHALTS

- A. Liquid asphalts for use in pavement construction shall conform to:
 1. ASTM D2026
 2. ASTM D2027/D2027M
 3. ASTM D2028
 4. AASHTO M81
 5. AASHTO M82
 6. MDOT Section 904

2.06 EMULSIFIED ASPHALT (BOND COAT)

- A. Emulsified asphalt for use in pavement construction shall conform to:
 1. ASTM D244
 2. MDOT Section 904

2.07 COMPOSITION OF MIXTURES

- A. Bituminous mixtures shall be mixed and placed in accordance with applicable requirements specified in MDOT Section 501 except as otherwise specified in this Section.
- B. The blended aggregate used for the bituminous wearing course on this Project shall have an Aggregate Wear Index (AWI) of 260, or higher.
- C. The aggregates, mineral filler (if required), and asphalt binder shall be combined as necessary to produce a mixture of the type as specified on the Plans.
 1. Superpave Hot Mix Asphalt Mixtures shall be in accordance with MDOT Section 501.
 2. Marshall Hot Mix Asphalt Mixtures shall be in accordance with MDOT Section Special Provision 20SP-501X-01 (latest edition).
- D. The bituminous mixture specified on the Plans or in the Proposal, when tested at optimum asphalt content (determined in accordance with MDOT "Procedures for Mix Design Processing"), shall meet the requirements for stability, flow, voids in mineral aggregate (VMA), air voids, fines/binder ratio, fine aggregate angularity, L.A. Abrasion loss, and soft particles as specified for the type of mix.
- E. Mixtures failing to meet the requirements specified will be rejected and the Contractor will be required to submit additional samples of bituminous mixtures until a combination of material is found which will produce a mixture meeting the requirements.
- F. If there is a change in the source of any of the aggregates, a new job-mix formula will be required.
- G. After the job-mix formula is established, the aggregate gradation and the asphalt binder content of the bituminous mixture furnished for the Work shall be maintained within the Range 1 uniformity tolerance limits permitted for the job-mix formula as specified in "Uniformity Tolerance Limits" table below.
 1. If two (2) consecutive aggregate gradations on one (1), or asphalt binder contents as determined by the field extractions are outside the Range 1 but within the Range 2

uniformity tolerance limits, the Contractor shall suspend all operations. Work days will be charged during the down time.

2. Before resuming any production, the Contractor shall make all necessary alterations to the materials or plant so that the Job Mix Formula can be maintained within the deviations permitted under the table below.

Uniformity Intolerance Limits

Percentage Passing Designated Sieves

Type of Course	Range (a)	(b)	No. 8	No. 30	No. 200	Asphalt Binder Content
Top and Leveling	Range 1	± 5.0	± 5.0	± 4.0	± 1.0	± 0.40
	Range 2	± 8.0	± 8.0	± 6.0	± 2.0	± 0.50
Base	Range 1	± 7.0	± 7.0	± 6.0	± 2.0	± 0.40
Courses	Range 2	± 9.0	± 9.0	± 9.0	± 3.0	± 0.50

(a) This range allows for normal mixture and testing variations. The mixture shall be proportioned to test as loosely as possible to the Job Mix Formula

(b) This includes all sieve sizes No. 4 and larger listed on the Job Mix Formula

- H. Mixtures exceeding the maximum tolerances listed in the table, or exceeding the maximum limits specified for the master gradation range will be rejected and the Contractor may be required to remove and replace any bituminous pavements which the Engineer determines were constructed with mixtures in the excess of these tolerances.
- I. Contractor shall provide uniformity in the gradations of the aggregates placed in the cold feed bins so that the combination of aggregates produced for the mixture by blending the aggregates from two (2) or more cold feed bins will be uniformly fed by means of adjustable feeders onto a belt supplying the asphalt plant.
 1. Feeders shall be equipped with cutoffs which will automatically stop the operations to the asphalt plant at any time the flow of any aggregate fraction is changed so as to affect the uniformity of the finished product.
- J. Contractor has the option of using hot bins for proportioning the aggregates to meet the specified tolerances.
- K. Aggregate gradation tests will be made on aggregate extracted from samples of bituminous mixture taken from the trucks as directed by the Engineer.
 1. As a general guideline, samples will be taken at initial start of production and at other times when tests indicate that the aggregate gradation is fluctuating, truck samples will be taken at a frequency of one (1) sample per 250 Tons of mixture, but not more than four (4) samples per day.
 2. During other periods where tests indicate the aggregate gradation is stable, truck samples will be taken at a frequency of one (1) sample per 500 Tons of mixture, but no more than two (2) samples per day.
- L. Exact mixture proportions will be based on composite samples of aggregate and the particular bituminous material called for on the Plans.

PART 3 EXECUTION

3.01 EXCAVATION

- A. Prior to the installation of bituminous concrete pavement, examine the excavation for the grades, lines, and levels required to receive the new Work. Ascertain that excavation and compacted subgrades are adequate to receive the bituminous pavement to be installed. Correct defects and deficiencies before proceeding with the Work.

3.02 SUBGRADE AND BASE COURSE CONDITIONS

- A. Prior to the installation of any bituminous pavement, examine the subgrade and base course to ascertain that it is adequate to receive the bituminous concrete pavement to be installed. If the subgrade remains wet after all surface water has been removed, the Engineer may require the installation of edge drain.

3.03 EXISTING IMPROVEMENTS

- A. Investigate and verify location of existing improvements, including structures, to which the new Work is to be connected. Adjustments in line and grade to align the new Work with the existing improvements must be approved by the Engineer, prior to any changes.

3.04 EQUIPMENT REQUIREMENTS

A. General:

1. Contractor shall furnish sufficient equipment for completing the Work in a timely and efficient manner.
2. Equipment shall be on the job site and ready for normal operation before the placing of material is started.
3. Equipment shall be in good working order. Equipment shall be subject to inspections and testing during construction.
4. Equipment shall be of sufficient capacity that the operation can be continuous and a rate of production obtained which insures good workmanship, and eliminates overloading of the equipment or frequent interruptions or delays.
5. Equipment shall conform to the requirements as specified in MDOT Section 501 and as specified herein.

B. Pavers:

1. Paver shall be an approved self-powered machine capable of spreading and finishing the mixture in a uniform layer at the desired thickness and cross section and ready for compaction. The use of any machine in poor mechanical or worn condition, will not be permitted. Paver shall be of such design that the supporting wheels, treads, or other devices ride on the prepared base. The full width of surface being applied shall be screeded by an oscillating or vibrating screed.
2. Paver shall at all times produce a uniformly finished surface, free from tearing or other blemishes that would require hand work. The screed shall be adjustable to provide for tilting to secure the proper drag or compressive action necessary to produce the desired surface texture.
3. Paver shall be equipped with a hopper and an automatic material-depth control device so that each distributing auger and corresponding feeder shall respond automatically to provide for a constant level of mix ahead of the screed unit to the full width of the lane being paved.
4. In order to ensure that adequate material shall be fed to the center portion of the lane being paved, reverse pitch augers or paddles shall be installed at the inside of one or both ends of the auger shafts to force the mix to the middle portion of the lane. If necessary to prevent segregation of the mix as it drops off the feed conveyor, baffle plates shall be installed at the required location.
5. When extensions are added to the paver, they shall be provided with the same vibrating screed or tamper action as the main unit of the paver, except for paving variable width areas. The extensions shall also be equipped with a continuation of the automatically controlled spreading augers. The screed and any extensions shall be provided with an approved method of heat distribution.

6. Unless specified otherwise, bituminous pavers shall be equipped with an automatically controlled and activated screed and strike-off assembly capable of grade reference and transverse slope control.
 - a. A manufacturer approved grade referencing attachment, not less than 30 feet in length, shall be used for all lower courses and the first lane of the wearing course.
 - b. After the first lane of the wearing course has been placed, a 10 feet or longer grade referencing attachment may be substituted for constructing subsequent adjacent lanes of wearing course mixture.
 7. A self-propelled mechanical spreader capable of maintaining the proper width, depth, and slope without causing segregation of the material, may be used for base courses and for surface courses less than 8 feet in width.
 8. When surfacing ramps or shoulders, or when the grade of a concrete gutter or other existing installation must be met, the manner of use of the automatic grade reference and slope control devices shall be as approved by the Engineer.
 9. Whenever a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually for the remainder of the normal working day, provided this method of operation will produce results meeting the specification requirements.
- C. Crushing Equipment:
1. Crushing equipment for pulverizing existing bituminous base course shall be an approved rotary reduction machine having positive depth control adjustments in increments of 1/2 inch and capable of reducing material which is at least six 6 inches in thickness.
 2. The machine shall be of a type designed by the manufacturer specifically for reduction in size of pavement material, in place, and be capable of reducing the pavement material to the specified size. The cutting drums shall be enclosed and shall have a sprinkling system around the reduction chamber for pollution control.
 3. The rate of forward speed must be positively controlled in order to ensure consistent size of reduced material. The machine must be equipped with an accurate tachometer which is mounted in full view of the operator.
 4. Crushing equipment shall meet the approval of the Engineer.
- D. Cold Milling Machine:
1. Cold milling machine for removing concrete or bituminous surfaces shall be equipped with automatically controlled and activated cutting drums that are capable of grade reference, transverse slope control, and produce a uniformly textured surface. An approved grade referencing attachment, not less than 30 feet in length shall be used.
 2. Equipment for removing the concrete or bituminous surface shall be capable of accurately removing the surface, in one or more passes, to the required grade and cross section.
- E. Joint Heaters:
1. Joint heaters shall be infrared or other approved heaters, equipped with an automatic ignition and extinguishing system to ensure that the heater operates only when the paver is moving. It shall be of sufficient length and heating capacity to adequately soften the edge of the mat. The heater shall be oriented parallel to the joint edge.
 2. Bituminous pavement shall not be heated by a direct open flame.
- F. Rollers:
1. Steel-wheel rollers shall weight at least 8 tons and shall be self-propelled, vibratory or static, tandem rollers or shall be self-propelled static 3-wheel rollers.

- a. Steel-wheel rollers shall be free from backlash, faulty steering mechanism, or worn king bolts. The steering device shall respond readily and permit the roller to be directed on the alignment desired.
 - b. Rollers shall be equipped with wheel sprinklers and scrapers.
 - c. Roller wheels shall be smooth and free from openings or projections which will mark the surface of the pavement.
- 2. Vibratory rollers shall have a shutoff to deactivate the vibrators when the roller speed is less than 0.5 mph and shall have provisions to lock in the manufacturer's recommended speed, vibrations per minute, and amplitude of vibration (dynamic force) for the type of bituminous mixture being compacted.
- 3. The pneumatic-tired roller shall be of the self-propelled type with a total weight, including ballast, not greater than 30 tons.
 - a. It shall be equipped with a minimum of seven (7) wheels situated on the axles in such a way that the rear group of tires will not follow in the tracks of the forward group, but will be so spaced that a minimum tire path overlap of 1/2 inch is obtained.
 - b. The tires shall be smooth and shall be capable of being inflated to or adapted to achieve a pressure necessary to provide ground-contact pressures of at least 80 psi.
 - c. The tire pressures shall not vary by more than 5 psi between individual tires. Contractor shall furnish a tire gage which shall be available at all times to enable the Engineer to check the tire pressures.
 - d. Contractor shall furnish the Engineer charts or tabulations showing the contact areas and the contact pressures for the full range of tire inflation pressures and tire loadings for the type and size roller used.
- 4. Roller shall be equipped with a mechanism capable of reversing the motion of the roller smoothly.
- 5. Roller shall be equipped with wheel sprinklers and scrapers or mats.
- 6. Rollers shall be of sufficient size to compact the bituminous mixture to the required density without tearing, displacing, or cracking the mat.
- G. Chip Spreader:
 - 1. Chip spreader shall be self-propelled and shall be equipped with pneumatic tires.
 - 2. Spreader shall be equipped with a screen mounted below the metering gage.
 - 3. Spreader shall be capable of spreading the cover material uniformly at widths of 3 to 12 feet, or separate spreaders shall be provided for the specific widths required.
 - 4. Rate of discharge of the spreader shall be adjustable to spread uniform layers of 10 to 50 pounds/syd.
- H. Bituminous Concrete Curbing Machine:
 - 1. Bituminous concrete curbing machine shall be self-propelled and shall be capable of laying and satisfactorily compacting curved and straight line curb to the cross section specified on the Plans. It shall be equipped with templates for the cross sections required.

3.05 PREPARATION OF FOUNDATIONS

- A. For bituminous base course mixtures required to be placed directly on the subgrade, the density, grade and cross section shall meet the approval of the Engineer at the time of placement of any mixture.
- B. Prior to placing any bituminous mixture, the surface of any existing pavement, including joints and cracks, shall be thoroughly cleaned of all dirt and debris.

- C. Existing structures within the limits of the new Work shall be adjusted as specified in the Plans, or as determined by the Engineer.

3.06 PREPARATION OF AGGREGATE BASE

- A. Prior to the placing of prime coats or bituminous mixtures, density, grade and cross section of the aggregate base shall meet the approval of the Engineer.
- B. Surfaces that have become too wet or too dry shall be reworked to provide the required density.

3.07 PREPARATION OF EXISTING PAVEMENT

- A. This Work consists of preparation of the existing concrete road for resurfacing. Broken pavement or pavement not bonded to the base pavement, and loose bituminous surfacing or patches shall be removed.
- B. Longitudinal and transverse joints and cracks shall be cleaned in accordance with Article 3.14 of this Section.
- C. Butt joints at the end of surfacing sections and at intersections of adjoining streets shall be made in accordance with Article 3.08 of this Section. The vertical face of the cut shall be maintained true, straight and undamaged until installation of wearing course.

3.08 BUTT JOINTS

- A. If butt joints are specified on the Plans, or by the Engineer, the old surface shall be cut back for at least 5 feet to a depth of at least 1 inch for the full width of the joint. The vertical face of the cut shall be maintained true, straight and undamaged until installation of wearing course.

3.09 EDGE TRIMMING

- A. Trimming and truing the edge of an existing bituminous surface shall be performed as required to give a straight, sharp edge at the proper elevations.
- B. The existing base under the bituminous surface shall be left undisturbed.

3.10 REMOVING BITUMINOUS SURFACING

- A. When removing existing bituminous surface course, the edges of the area to be removed shall be cut along straight lines, either perpendicular to or parallel to the direction of travel, for the full depth of the full depth of the surface course; with the cut edge a minimum of 18 inches back from the disturbed edge of pavement.
- B. The cutting of the edges and the breaking up of the bituminous material within the removal area; and the removing and disposing of the unsuitable material are included in the Work of removing bituminous surfacing.

3.11 REMOVING BITUMINOUS PATCHES

- A. Where the removal of bituminous patching material is specified on the Plans or as determined by the Engineer, it shall be saw cut along the edges of the patched area to prevent the tearing of adjoining pavement surfaces during the removal operation.
- B. The cutting, removing and disposing of bituminous surfacing and unsuitable materials are included in the Work of removing bituminous patches.

3.12 PULVERIZATION AND SHAPING OF EXISTING BITUMINOUS BASE COURSE

- A. This Work consists of scarifying, pulverizing, milling, crushing, adding new material if required, shaping, rolling, compacting, and proof rolling the crushed base to the proper elevation and slope.
- B. Additional materials required to fill holes and voids shall be furnished at the Contractor's expense. Additional aggregate, if required, shall be MDOT 20A or 22A aggregate.
- C. The material shall be scarified and uniformly pulverized to a maximum size of 2 inches, in addition, 95% to 100% of the material shall have a particle size of 1-1/2 inches or smaller.

- D. The material shall be scarified and uniformly pulverized, in one or more passes, to the depth specified on the Plans or as determined by the Engineer.
- E. The maximum length or width of roadbed to be scarified and pulverized at any one time shall be as specified on the Plans or as determined by the Engineer.
- F. The crushed material shall be rough graded to within 3/4 inch of the final grade as called for on the Plans or as determined by the Engineer. Additional aggregate shall be placed, if necessary, to attain the required cross sections.
- G. After the material has been balanced, it shall be thoroughly mixed. In restrictive areas, the material to be mixed may be bladed into a windrow to provide working room for the mixer.
- H. The mixed material shall be shaped and compacted in reasonably close conformity with the lines, grades, and cross sections shown on the Plans or as established by the Engineer. Excess material shall be removed and disposed of by the Contractor at Contractor's expense.
- I. Finished rolling shall be done with a vibratory steel wheel roller.
- J. Aggregate-bituminous pavement mixture shall be compacted to not less than 95% of the unit weight obtained by the AASHTO T 180 test method. The test shall be made on the aggregate-bituminous mixture at the field moisture content existing during the compacting operation. Required density shall be maintained until the material has been surfaced.
- K. Prior to the placing of any surface courses, the pulverized material shall be proof rolled. Proof rolling shall be accomplished with an 18,000 lbs single axle load.
- L. Unstable areas shall be removed and backfilled.

3.13 HAND PATCHING

- A. Where the filling of holes and depressions in the base or the replacing of the patches is specified on the Plans or as determined by the Engineer, the filler material shall be an approved bituminous mixture. The mixture selected will be dependent on the depth and size of the patch and the type of mixture and performance grade of the asphalt binder required.
- B. The patches shall be compacted to the required grade by use of a machine vibrator or approved roller.

3.14 JOINT CLEANOUT

- A. Where joint cleanout is specified on the Plans or as determined by the Engineer, the joint sealants and foreign material shall be removed to a minimum depth of 1 inch by approved mechanical or hand methods.
- B. The removal and disposal of unsuitable materials and the removal and disposal of bituminous surface patches adjacent to joints are included in the Work for joint cleanout.

3.15 REPAIRING PAVEMENT JOINTS

- A. Where existing pavement joints and cracks are to be repaired, as specified on the Plans or as determined by the Engineer, the existing bituminous surface and any loose or spalled concrete around the joints and cracks shall be removed. Each joint or crack shall be cleaned and shall be filled with an approved mixture and the mixture shall be compacted with a vibratory machine or by an approved method.

3.16 COLD MILLING CONCRETE OR BITUMINOUS PAVEMENT

- A. Where cold milling concrete or bituminous pavement is specified, the pavement shall be milled to the shape and cross section as shown on the plans. Immediately after cold milling, the surface shall be cleaned.
- B. Contractor shall remove and dispose of any resulting debris.
- C. When allowed by the Engineer, milling materials may be used for temporary wedging.

1. Prior to placing pavement, temporary wedging materials shall be removed and disposed of. Wedging with milled materials is incidental to the Project.

3.17 GENERAL BITUMINOUS PAVEMENT INSTALLATION REQUIREMENTS

- A. The width, thickness and type of bituminous paving improvement shall be specified on the Plans, indicated in the Proposal or as determined by the Engineer.
- B. At street intersections, curb drops conforming to the current rules and regulations of Act 8, Michigan PA 1973, as amended, shall be provided for the construction of sidewalk ramps. In addition, curb drops for sidewalks and driveway approaches shall be provided in locations called for on the Plans or as determined by the Engineer.
- C. Existing improvements, including structures, shall be protected to prevent their surfaces from being discolored during application of bituminous materials.

3.18 BITUMINOUS PRIME COAT OR BOND COAT

- A. The prepared foundation shall be treated with bituminous material for prime coat or bond coat as specified. A bond coat shall be applied to each layer of bituminous mixture before the succeeding layer is placed.
- B. The bituminous material shall be applied uniformly by means of a pressure distributor. In areas inaccessible to the regular distributor operation, the bituminous material shall be applied by means of the hand spraying apparatus of the distributor.
 1. Where necessary to accommodate traffic, the surface shall be treated half-width or as recommended by the Engineer.
 2. The foundation shall be free from moisture when the treatment is applied.
 3. Under no circumstances shall pools of bituminous material be allowed to remain on the surface.
- C. The amount of prime coat to be applied per square yard shall be 0.05 gal/syd unless otherwise specified on the Plans or recommended by the Engineer.
- D. When prime coat is applied, the surface course shall not be placed until the prime coat has properly cured. No blotting of the prime coat with aggregate in lieu of proper curing will be permitted.
- E. The prime coat may be omitted or reduced when authorized by the Engineer.
- F. The bond coat shall be applied at the rate specified by the Engineer. This rate will be between 0 to 0.10 gal/syd on the bituminous or concrete foundation and between 0 to 0.05 gal/syd between subsequent courses.
- G. The bond coat material shall be applied ahead of the paving operation for a distance of at least 1500 feet depending on traffic conditions; or as determined by the Engineer. The surfacing shall not be placed until the bond coat has cured.

3.19 TRANSPORTATION OF MIXTURES

- A. The transportation of the mixtures as specified shall be in accordance with MDOT Section 501.

3.20 PLACING BITUMINOUS MIXTURES

- A. Pavers will be required to have an automatically controlled and activated screed and strike-off assembly except when placing mixtures for:
 1. variable width sections;
 2. sections of pavement less than 1000 feet in length;
 3. placing the first course of a base course mixture on an earth grade or on a sand subbase;
 4. placing base course mixtures in widths less than 8 feet.

- B. Bituminous base course mixtures shall not be placed in lifts exceeding , unless otherwise approved by the Engineer. Approval to place lifts in excess of 3 inches will be based on the ability of the Contractor to place and compact the base course to the required cross section and within the specified tolerances.
- C. For lifts of 2-1/2 inches or greater, a berm of shoulder material shall be banked against the outside edge of each layer of mixture placed unless the sequence of operations is such that the edges of the material are adequately confined and supported in some other manner. The width of material placed shall be twice the height of the bituminous layer being placed but in no case less than a 6 inch width.
- D. When the application rate for a bituminous wearing course exceeds 220 lbs/syd, the pavement shall be constructed in two (2) or more courses, unless otherwise specified on the Plans or as authorized by the Engineer.
- E. The bituminous mixture shall be placed by an approved self-propelled mechanical paver to such a depth that when compacted, it will have the thickness specified.
 - 1. The mixture shall be dumped into the center of the hopper and care shall be exercised to avoid overloading the paver and spilling the mixture upon the base.
 - 2. The paver speed shall be adjusted at the discretion of the Engineer to that speed which, in his opinion, gives the best results for the type of paver being used and which coordinates satisfactorily with the rate of delivery of the mixture to the paver to provide a uniform rate of placing the mixture without intermittent operation of the paver.
- F. When delays result in slowing paving operations such that the temperature of the mat immediately behind the screed falls below 170 degrees Fahrenheit, paving shall be stopped and a transverse construction joint placed.
- G. Bituminous mixture shall be placed in one (1) or more layers as called for on the Plans or as approved by the Engineer.
 - 1. To take out irregularities in the existing road surface, wedging with bituminous mixture shall be done by placing several layers with the paver.
 - 2. Corrections to the foundation by wedging with bituminous material shall be made by placing, compacting, and allowing the material to cool prior to paving.
- H. Bituminous mixtures shall be placed using two (2) pavers in echelon or one (1) paver equipped with an approved joint heater. Engineer may omit the use of the joint heater if the temperature of the previously placed mat does not fall below 170 degrees Fahrenheit prior to placement of the adjacent course.
- I. Echelon paving will be permitted when allowed by the Engineer.
- J. Cold joints will be permitted along acceleration and deceleration lanes, lanes less than full width, irregularly shaped sections, and at transverse joints. The edges of the initial mat for cold joints shall be painted with bituminous material before the bituminous mixture is placed in the adjacent section.
- K. In placing the bituminous mixture adjacent to all joints, hand raking or brooming will be required to provide a dense smooth connection.
- L. Connections with existing surfaces at the beginning and end of resurfacing sections, and at intersections shall be made by feathering out the mix, by constructing a butt joint, or as approved by the Engineer.
- M. When placing the bituminous mixture in a lane adjoining a previously placed lane, the mixture shall be placed such that it uniformly overlaps the first lane by 2 to 4 inches and is placed at a height above the cold mat equal to the breakdown roller depression on the hot mat.
 - 1. The overlapping material shall be bumped, back onto the hot lane so that the roller will compress the excess material into the hot side of the joint.

2. If, in the opinion of the Engineer, the overlap is excessive, the excess material shall be trimmed so as to leave an edge having a uniform thickness. The excess material shall be discarded, it shall not be spread across the surface course.
- N. If the lanes are being constructed with two (2) or more pavers in echelon, the loss depths of bituminous material from each paver shall match at the longitudinal joints.

3.21 ROLLING AND COMPACTING OF BITUMINOUS MIXTURES

- A. Each layer of bituminous mixture shall be compacted with approved rollers. At least two (2) rollers will be required when the mixture lay-down rate exceeds 800 syd per hour.
- B. Steel 3-wheel rollers may be used for initial compaction immediately following the paver.
- C. The final rolling operation on each layer of bituminous mixture shall be accomplished by use of tandem steel-wheel rollers or by use of vibratory rollers operated in the static mode.
- D. Roller wheels shall be kept properly moistened with water.
- E. Pneumatic-tired rollers shall be operated in a competent manner and shall not mark or rut the surface or displace the pavement edges. The pneumatic-tired roller shall be ballasted to obtain the required ground-contact pressures as directed by the Engineer.
 1. To obtain a uniformly textured mat and the desired pavement density, the Engineer may recommend the Contractor to raise or lower tire pressures at any time during the rolling operations.
 2. The roller operations shall be conducted in such a manner as to prevent scuffing or chatter marks in the pavement surface.
 3. The number of passes made by the pneumatic-tired roller shall not be less than two (2) round trip passes over each area.
- F. Rolling of the mixture shall begin as soon after placing without undue displacement, picking up the mat, or cracking. Rolling shall start longitudinally at the extreme sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drive wheel of the roller.
 1. Alternate trips of the roller shall be of slightly different lengths.
 2. The maximum roller speed shall not exceed the manufacturer's recommended speed for the type of mixture or thickness of layer being placed.
- G. When compacting an adjoining lane, the longitudinal joint shall be rolled first with the roller supported mainly on the cold lane with only 3 to 6 inches of the roller extending onto the freshly placed bituminous material.
- H. Finish rolling shall continue until all roller marks are eliminated.
- I. Pneumatic-tired rollers will not be permitted on wearing courses.
- J. Areas too narrow to be rolled directly by standard 8 ton tandem rollers shall be compacted by self-propelled trench rollers of suitable width, approved by the Engineer, and weighting not less than 300 lbs per inch of width.
- K. Skin patching on an area that has been rolled will not be permitted. Any mixture that becomes mixed with foreign material or is in any way defective shall be removed and replaced at the Contractor's expense.

3.22 WEATHER AND SEASONAL LIMITATIONS

- A. Bituminous mixtures shall not be placed nor the prime coat or bond coat applied when rain is threatening or when the moisture on the existing surface would prevent satisfactory bonding.
- B. Unless otherwise approved by the Engineer in writing, seasonal limitations for placing bituminous mixtures shall be in accordance with the following:

1. Seasonal Limitations:
 - a. May 5 to November 15
- C. Unless otherwise approved by the Engineer in writing, minimum mixture temperature limitations at the time of placement for placing bituminous mixtures shall be in accordance with the following:
 1. Mix Temperature Limitations:

Temperature of Surface being Overlaid	Rate of Application of Bituminous Material		
	<120 lbs per syd	120 to 200 lbs per syd	>200 lbs per syd
35 to 39 degrees F			330 degrees F
40 to 49 degrees F		330 degrees F	315 degrees F
50 to 59 degrees F	330 degrees F	315 degrees F	300 degrees F
60 to 69 degrees F	315 degrees F	300 degrees F	285 degrees F
70 to 79 degrees F	300 degrees F	285 degrees F	270 degrees F
80 to 89 degrees F	285 degrees F	270 degrees F	270 degrees F
90 degrees F and over	270 degrees F	270 degrees F	270 degrees F

Bituminous paving will not be allowed when the mix temperature is below these minimum temperatures, nor when there is frost on the grade or existing surface.

3.23 HEATING BITUMINOUS MATERIALS

- A. Bituminous material which requires heating before application shall be heated in such a manner as to ensure a uniform temperature throughout the entire mass with efficient and positive control at all times. It shall be heated to a temperature consistent with the type of material used and only to such temperature as will ensure the necessary fluidity.
 1. Excessively high temperatures shall be avoided.
 2. A thermometer shall be provided to enable the Engineer to observe the temperature at any time.
 3. Any bituminous material which has been overheated will be rejected.
- B. Asphalt emulsion shall be circulated continuously when heated above atmospheric temperature so as to prevent it from separating.
 1. Heating of asphalt emulsion to the required temperature for application shall be done entirely in the distributor unless a uniform temperature is maintained in the storage tank by means of a circulating heater.
 2. Any asphalt emulsion which has been damaged by continuous heating for too long a time or by alternate heating and cooling will be rejected.

3.24 PATCHING

- A. Where patching is required on a bituminous surface or concrete surface because of small holes or pitted surface, the holes shall be cleaned of all dirt and foreign material.
- B. The bituminous patching material shall be placed, struck off and compacted so that when completed, the patch shall be flush with the adjacent pavement. The compaction may be done with a hand tamper, vibratory compactor or roller.
- C. When patching is required for repairing a cut in the pavement, made for the construction of underground structures and utilities, the granular backfill shall be compacted to not less than 95% of the maximum unit weight. An aggregate base material of not less than 12 inches compacted thickness, or a bituminous base of the specified thickness, shall be used. The top of the base shall be 2 to 2-1/2 inches below the surface of the adjacent pavement. Bituminous patching material shall be placed and compacted.

- D. The surface of the bituminous patch shall be smooth and shall not vary more than 1/4 inch from the crown and grade of the adjacent pavement. Any variations over 1/4 inch from the established grade shall be corrected as determined by the Engineer.

3.25 CHIP SEAL

- A. Seal coating shall consist of one (1) or more applications of bituminous material applied to the prepared surface and one (1) or more coverings of coarse or fine aggregate applied to the bituminous material.
- B. Asphalt emulsion shall be CSEA or CRS-2M and aggregate shall be MDOT 29A unless otherwise specified on the plans.
- C. Cover materials used for seal coating shall be sufficiently dry when it comes in contact with bituminous material. The moisture content shall not exceed three (3) percent by weight, dry basis. Satisfactory means shall be provided for the protection of the coating materials against excessive moisture by covering stockpiles, by aeration or through manipulation.
- D. The bituminous material specified for surface coat shall be uniformly applied by means of the pressure distributor in the number of applications provided and in the amount per square yard as determined by the Engineer. Each application of bituminous material shall cure sufficiently to prevent displacement or pickup by traffic or construction equipment before a succeeding application of bituminous material is made.
- E. Following the application of surface coat bituminous material, the cover material shall be uniformly spread over the surface by means of approved mechanical spreaders, in the amount per square yard as specified or as determined by the Engineer. Truck wheels shall ride on spread cover material and not on bituminous material.
- F. Any irregularities or deficiencies in the uniformity of the cover aggregate on the surface shall be corrected by hand spreading and dragging.
- G. Following the spreading of each course of cover material, the surface shall be rolled by means of approved rollers.
- H. Rolling shall immediately follow the placing of cover material before the bituminous material has set. At no time shall there be more than 300 feet of unrolled cover material. No cover material shall be left unrolled for more than five (5) minutes.
- I. Sufficient rolling shall be done to embed the cover material in the bituminous material without crushing the aggregate.
- J. For areas deficient in cover material after completion of the surface treatment, additional cover material shall be added. For areas with excessive cover material, the excess cover material shall be removed before the next seal is applied. The final application of cover material shall be swept with a power broom.
- K. The completed surface shall be maintained with a drag, broom or other approved equipment to keep the material well distributed on the road until all cover material possible has been embedded in the bituminous material. The length of time required for this maintenance will be from two (2) to five (5) days, as determined by the Engineer, depending on the weather and the materials used.

3.26 BITUMINOUS CONCRETE CURB

- A. The bituminous concrete curb shall be constructed to the design specified on the Plans or as approved by the Engineer and shall include the conditioning and treating of the surface on which the curb is to be placed.
- B. The materials used in the construction and installation of bituminous concrete curbing shall meet the requirements as specified in this Section, and as specified in MDOT Section 904.
- C. Bituminous concrete curb mixture shall be Marshall Mix MDOT 4C or 13A as specified in MDOT Special Provision 20_SP501X-XX and in accordance with MDOT Section 501, unless otherwise approved by the Engineer.

- D. The bituminous curb shall be constructed to conform to the Plans or as determined by the Engineer. The method of construction shall conform to MDOT Section 805, unless otherwise specified.
- E. The bituminous mixture shall be thoroughly compacted by a curbing machine to the cross section shown on the Plans, or as determined by the Engineer. The curb shall be formed to the density to produce a tight surface texture. Curbs showing segregation, slumping, or misalignment shall be removed and replaced at the Contractor's expense.
- F. When specified on the Plans or as directed by the Engineer, an application of asphalt emulsion or other approved bituminous coating shall be applied to the finished curb at the joint of the curb and pavement, or to the inside face of the curb, or to both, as a protective seal.
- G. Backfilling behind the curb shall not commence until the bituminous mixture has cured.
- H. Backfill material shall be placed and thoroughly tamped and compacted to the satisfaction of the Engineer, without disturbing the curb, and shall be left in a neat and smooth finished appearance.

3.27 BITUMINOUS APPROACHES, SIDEWALKS, AND SHOULDERS

- A. This Work shall consist of constructing a bituminous surface course as specified on the Plans, or as approved by the Engineer. The bituminous surface course shall be placed on a prepared foundation.
- B. The bituminous materials used shall be as specified on the Plans, or as approved by the Engineer. Materials acceptable for use are specified in this Section, and as specified in MDOT Section 904.
- C. Bituminous approach mixture shall be in accordance with MDOT Section 501, unless otherwise approved by the Engineer.
- D. Existing pavement or aggregate base shall be prepared to receive the bituminous surface course as specified in this Section.
- E. Bituminous prime and bond coats used shall meet the requirements specified in this Section. Care shall be taken to prevent spreading of bituminous material on adjoining surfaces. When approved by the Engineer, the prime coat may be omitted.
- F. Bituminous mixture shall be placed to the thickness specified on the Plans or as determined by the Engineer.
- G. Placing the bituminous mixture shall conform to this Section.
- H. When approved by the Engineer, the paver used for placing bituminous approaches and sidewalks will not be required to have an automatically controlled or activated screed or strike-off assembly or the corresponding grade referencing equipment. Also, with approval from the Engineer, only one (1) roller may be used with each paver.

3.28 CLEANUP

- A. The area adjacent to the new Work shall be backfilled with sound earth of topsoil quality.
- B. The backfill shall be compacted, leveled and left in a neat, smooth condition. At a seasonally correct time the disturbed area shall be raked, have topsoil placed thereon, fertilized and seeded per the requirements of Section 32 9219, sodded in accordance with Section 32 9223, or _____.

3.29 MONUMENT BOXES

- A. All government, plat, and street intersection monuments within existing or proposed pavement shall be preserved by enclosing in standard monument boxes. Monument box castings shall be furnished and installed by the Contractor and shall be East Jordan Iron Works No. 1570, or approved equal.

- B. Existing monument boxes shall be adjusted to meet the proposed pavement elevation by removing the castings and resetting to the required elevation. Support for the monument box shall be concrete bedding, so constructed as to hold them firmly in place. The adjacent pavement, curb, or curb and gutter shall be replaced to the new elevation, condition, and kind of construction, unless otherwise provided.

3.30 TESTING

- A. During the course of the Work, the Engineer may require testing for mix designs, aggregate gradation and physical properties, bitumen content, compaction or density, and thickness of material. The testing and coring required shall be performed by a testing laboratory approved by the Engineer.
 - 1. The cost for testing and coring shall be at the expense of the OWNER.
 - 2. The testing laboratory shall furnish the Engineer with two certified copies of the results of all tests.
- B. Testing procedures shall conform to current MDOT Standards.
- C. Testing of asphalt binders, liquid asphalts, asphalt emulsions, tars shall conform to MDOT Section 904.
- D. Rolling shall proceed until the required compaction is attained and the amount of rolling required shall be based on the test results of a nuclear gage or on using a specified minimum number of rollers. When the total tonnage for the Project is in excess of 1,000 tons, the nuclear gage method will be used to govern the compactive requirements.
- E. The control density for the bituminous mixture to be placed, will be determined by use of a modified Marshall Test.
- F. Control Density
 - 1. During the Contractor's start-up operations, a rolling procedure to attain the control density will be established.
 - a. The rolling procedure will be based on the number and type of rollers used and the rolling pattern.
 - b. The goal of the compactive effort will be to establish a rolling procedure which will achieve 100% of the control density but in any case, the density achieved shall not be less than 95% of the control density.
 - c. Density values less than 98% will be sufficient cause for the Engineer to require an adjustment in the number or type of rollers being used or in the rolling pattern.
 - 2. Once the procedure has been established on the start-up section, the procedure shall be used for the remainder of the mixture to be placed, unless subsequent tests indicate a need to change the number of rollers or the rolling pattern.
 - 3. If difficulties are encountered or if there is a significant change in aggregate or bitumen content, the Engineer will determine the control density for the new mixture and require the Contractor to again establish the number and type of rollers and the rolling pattern required on the new mixture to attain the control density.
 - a. The compactive procedures thus determined shall be used when placing the remainder of that mixture.
 - 4. Density checks will be made at the discretion of the Engineer to determine if the compactive procedure being used is achieving the required density, or if a change in procedure is necessary.
 - 5. Each layer of bituminous mixture shall be compacted to at least 95% of the control density, using the established procedure.

3.31 PRICE ADJUSTMENTS

- A. Samples of asphalt binder may be taken prior to incorporation into the mixture and from the bituminous mixture. Where results of tests on these samples deviate from specification requirements, the affected material will be subject to price adjustments on the following basis:
 - 1. When the test results deviate from the limits specified in MDOT Table 904-1, "Performance Graded Asphalt Binder Specification", by ten (10) percent or more, the mixture produced will be evaluated by the Engineer and if in his judgment the defective pavement warrants removal, the Contractor shall remove and replace the affected area at his expense.
 - a. If it is determined that the removal is not required, the Contract unit price of the affected mixture will be reduced by ten (10) percent.
- B. Core samples may be taken on the completed Work. If the results from testing of the core samples indicates a deficiency in the completed Work, the Engineer will evaluate the test results and will recommend removal and replacement or a credit to the Owner.

END OF SECTION



SECTION 32 13 15 SIDEWALKS AND DRIVEWAYS

GENERAL

1.01 SCOPE

- A. This Section includes sidewalks, sidewalk ramps, driveways, and drive approaches complete with concrete materials, concrete curing compounds, joint materials, field quality control and appurtenances.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 2200: Unit Prices
- B. Section 31 1100: Clearing and Grubbing
- C. Section 31 2313: Subgrade Preparation
- D. Section 32 9219: Seeding
- E. Section 32 9223: Sodding

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. ASTM A706/A706M: Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
 - 2. ASTM A996/A996M: Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
 - 3. ASTM C94/C94M: Standard Specification for Ready-Mixed Concrete
 - 4. ASTM C150/C150M: Standard Specification for Portland Cement
 - 5. ASTM C309: Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
 - 6. ASTM D1751: Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
 - 7. ASTM D6690: Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
 - 8. AASHTO T 26: Standard Method of Test for Determination of Organic Content in Soils by Loss on Ignition
 - 9. MDOT: Michigan Department of Transportation, Standard Specifications for Construction, latest edition.

1.04 SUBMITTALS

- A. Written permission for the use of all local disposal sites shall be obtained and copies shall be furnished to the ENGINEER.
- B. At the request of the ENGINEER, the CONTRACTOR shall provide the ENGINEER with certification that the various materials to be used conform to the ASTM Standards referred to in the Specification.

1.05 TEST REPORTS

- A. The ENGINEER shall be provided with two (2) certified copies of the test results of the thickness and compressive strength of the concrete. The core drilling, testing for thickness and compressive strength and the certification of the test results shall be performed by a testing laboratory approved by the ENGINEER.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Comply with the requirements for concrete installation due to outside ambient air temperatures specified under Part 3 of this Section.

1.07 PROTECTION

- A. Comply with the requirements for protecting new Work against damage from rain, as specified under Part 3 of this Section.
- B. Comply with the requirements for protecting new Work against damage from cold weather, as specified under Part 3 of this Section.

PRODUCTS

2.01 CONCRETE

- A. Concrete shall conform to MDOT Section 1004, use 3,500 psi strength concrete; Type IA cement; MDOT 6A coarse aggregate; MDOT 2NS fine aggregate; 3 inch maximum slump; no admixtures without the ENGINEER's approval.
- B. Ready-mixed concrete in accordance with ASTM C94/C94M, Alternate 2 shall be used unless a written request for other than ready-mixed concrete has been submitted, reviewed and approved by the ENGINEER
- C. CONTRACTOR shall provide documentation from actual mixes used on projects showing 28 day compressive strength of not less than 3,500 psi when tested under field conditions.
- D. Mixes shall contain a minimum of 25% Type F Fly Ash.
 - 1. Water reducers, additional fly ash, ground granulated blast furnace slag (GGBFS), and other pozzolans, may be used when approved by the ENGINEER.
 - a. The fly ash quantity may not exceed 40%;
 - b. GGBFS quantity shall be not less than 25% nor more than 40%;
 - c. Maximum total replacement of cement shall not exceed 40%;
 - d. GGBFS and Fly Ash must replace cement on a pound for pound basis.
- E. Cement shall be air-entraining Portland cement ASTM C150/C150M, Type 1A. If high-early strength concrete is desired, Type IIIA is required.
- F. High-early concrete can be obtained for small areas by the addition of one sack of cement, Type 1A, per cubic yard of concrete (94 lbs/cyd).
- G. The air content of the concrete shall be 6.5%± 1.5% by volume.

2.02 WATER

- A. Water to be used for mixing and curing concrete shall be reasonably clean and free from oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product.
- B. Waters from sources approved by the Michigan State Department of Public Health as potable may be used without test.
- C. Water requiring testing shall be tested in accordance with the current Method of Test for Quality of Water to be Used in Concrete, AASHTO T 26, and as specified in MDOT, Section 911.

2.03 CONCRETE CURING COMPOUNDS

- A. White membrane curing compound for curing concrete shall conform to ASTM C309, Type 2, Class B Vehicle, and as specified in MDOT, Section 911.

2.04 PREMOLDED JOINT FILLER

- A. Fiber joint filler for expansion joints shall conform to ASTM D1751. Filler shall be of the thickness, as specified herein, or on the Plans, or as approved by the ENGINEER.

2.05 STEEL HOOK BOLTS

- A. Hook bolts shall conform to ASTM A706/A706M, or Grade 60 of ASTM A615/A615M, or ASTM A996/A996M. Hook bolts shall be 5/8 inch (16 mm) diameter.

2.06 JOINT SEALANT

- A. Hot-poured type joint sealant shall conform to ASTM D6690, Type II, and as specified in MDOT Section 914.04.

EXECUTION

3.01 VERIFICATION OF EXCAVATION AND FORMING

- A. Prior to the installation of any concrete, examine the excavation and forms for the proper grades, lines, and levels required to receive the new Work. Ascertain that all excavation and compacted subgrades are adequate to receive the concrete to be installed.
- B. Correct all defects and deficiencies before proceeding with the Work.

3.02 EXISTING IMPROVEMENTS

- A. Investigate and verify location of existing improvements to which the new Work is to be connected.
- B. Adjustments in line and grade to align the new Work with the existing improvements must be approved by the ENGINEER, prior to any change.

3.03 FORMING

- A. The forms shall be of wood or metal, straight and free from warp, clean, and of sufficient strength to resist springing during the process of depositing concrete against them.
- B. The forms shall be the full depth of the concrete.

3.04 SIDEWALKS, SIDEWALK RAMPS, DRIVEWAYS, AND DRIVEWAY APPROACHES

- A. Unless otherwise noted in the Contract Documents, all sidewalks and sidewalk ramps shall be 4 inches thick except at driveways, where the thickness of the sidewalks shall be 6 inches.
- B. Sidewalks shall be 5 feet wide unless otherwise noted on Plans, and shall slope 1/4 inch/ft towards the surface drainage side which in general will be towards the center of the road. Normally sidewalks will be located within the right-of-way, parallel the property lines, at a distance of 1 foot from the property line.
- C. Driveways and approaches shall be 6 inches thick. The width of driveways and driveway approaches shall be as specified on the Plans or as determined by the ENGINEER.

3.05 REMOVE CURB FOR CURB DROP

- A. Construction of sidewalk ramps within street intersections where curbed pavement exists shall conform to the current rules and regulations of Act 8, Michigan PA 1973.
- B. Where there is no proper curb drop for the sidewalk ramp or driveway approach, the CONTRACTOR shall saw cut, to full depth of pavement, and remove a minimum of an 18 inch wide curb and gutter section. When mountable curbs are present, the CONTRACTOR shall remove a 24 inch wide curb and gutter section for the construction of sidewalk ramp, as specified above.
- C. The length of curb and gutter removal shall be determined by the ENGINEER in the field but shall be at least as wide as the proposed sidewalk ramp plus 1 foot on each side.

- D. The removed curb and gutter section shall be replaced with material, equal to what was removed and the joint sealed with hot poured rubber asphalt.
- E. The CONTRACTOR shall install 5/8 inch diameter self-tapping hook bolts, in the existing concrete pavement as indicated on the Plans prior to placing concrete for the removed curb and gutter section.
- F. Curbs may be cut or ground down with an approved concrete grinder when the final results will leave the cut or ground down curb in a smooth, clean condition acceptable to the ENGINEER. Any curbs that are cut or ground down that are not acceptable to the ENGINEER, shall be removed and replaced as specified above at no additional cost.

3.06 PLACEMENT OF FORMS

- A. Wood forms, straight and free from warp, of nominal depth may be used for sidewalk sections less than 25 feet in length.
- B. Forms shall be staked to line and grade in a manner that will prevent deflection and settlement.
- C. When unit slab areas are to be poured, slab division forms shall be so placed that the slab division joints will be straight and continuous.
- D. Forms shall be set for sidewalk ramps to provide a grade toward the centerline of the right-of-way in accordance with current standards. The grade shall be uniform, except as may be necessary to eliminate short grade changes.
- E. Forms shall be oiled before placing concrete. Forms shall remain in place at least 12 hours after the concrete is placed. There shall be sufficient forms placed ahead of the pouring operations to maintain uninterrupted placement of concrete.
- F. The use of slip form pavers can be allowed when approved by the ENGINEER in lieu of the construction system described above.

3.07 JOINTS

- A. Transverse and longitudinal expansion and plane-of-weakness joints shall be constructed at the locations specified herein, as indicated on the Plans, or as approved by the ENGINEER.
- B. The transverse expansion joints shall be placed for the full width and depth of the new Work. The transverse expansion joints placed against any existing pavement shall be a minimum of 6 inches deep but no less than the thickness of the concrete being placed.
- C. Longitudinal expansion joints shall conform to the same requirements as transverse expansion joints.
- D. Joints shall be constructed true to line with their faces perpendicular to the surface of the sidewalk. The top shall be slightly below the finished surface of the sidewalk. Transverse joints shall be constructed at right angles to the centerline of the sidewalk and longitudinal joints shall be constructed parallel to the centerline or as determined by the ENGINEER.
- E. Unless otherwise specified on the Plans or unless otherwise determined by the ENGINEER, when the sidewalk is constructed in partial width slabs, transverse joints in the succeeding slabs shall be placed in line with like joints in the adjacent slab. Also, in the case of widening existing sidewalks, transverse joints shall be placed in line with like joint in the existing sidewalk.
- F. Transverse expansion joints, 1/2 inch thick, shall be placed through the sidewalk at uniform intervals of not more than 50 feet and elsewhere as shown on the Plans, or as determined by the ENGINEER.
- G. Expansion joints, 1/2 inch thick, shall also be placed between the sidewalk and back of abutting parallel curbs, buildings or other rigid structures; concrete driveways and driveway approaches. The expansion joint between sidewalks and buildings shall be placed 1 foot from the property line and parallel to it.

- H. Expansion joints, 1 inch thick, shall be placed between sidewalk ramps or driveway approaches and the back of curbs.
- I. Plane-of-weakness joints shall be formed every 5 feet and shall be produced by use of slab divisions forms extending to the full depth of the concrete or by cutting joints in the concrete, after floating, to a depth equal to 1/4 the thickness of the sidewalk. The cut joints shall not be less than 1/8 inch nor more than 1/4 inch in width and shall be finished smooth and shall be at right angles to the centerline of the sidewalk.

3.08 PLACING AND FINISHING CONCRETE

- A. All concrete shall be placed on a prepared unfrozen, smooth, leveled, rolled and properly compacted base as indicated on the Plans. The surface of the subbase shall be moist with no visible water present prior to placement of the concrete.
- B. The concrete shall be deposited, in a single layer, to the depth specified in the Plans or in the Proposal. The concrete shall be thoroughly spaded or vibrated and compacted to fill in all the voids along the forms and joints. The concrete shall be struck off with a strike board until all voids are removed and the surface has the required grade and cross section as indicated on the Plans.
- C. The surface of the concrete shall be floated just enough to produce a smooth surface free from irregularities. All edges and joints shall be rounded with an edger having a 1/4 inch radius. The surface of sidewalks, driveways and approaches shall be broomed to slightly roughen the surface.
- D. The surface of sidewalk ramps shall be textured with a coarse broom transversely to the ramp slope. The texture on sidewalk ramps shall be coarser than the remainder of the sidewalk.

3.09 CURING

- A. After finishing operations have been completed and immediately after the free water has left the surface, the surface of the concrete (and sides if slip-forming is used) shall be completely coated and sealed with a uniform layer of white membrane curing compound. The curing compound shall not be thinned. The curing compound shall be applied at the rate of 1 gallon per 200 sq ft of surface.

3.10 BARRICADES

- A. Suitable barricades and lights shall be placed around all newly poured sidewalks, sidewalk ramps, driveways, driveway approaches and curb and gutter section in order to protect the new Work from damage from pedestrians, vehicles and others until the concrete has hardened.
- B. Barricades shall be left in place for a minimum of two (2) days, except for driveway approaches and curb and gutter section. Barricades shall remain in place for a minimum of three (3) days.
- C. Any concrete that suffers surface or structural damage shall be removed and replaced by the CONTRACTOR at his expense.

3.11 PROTECTION

- A. The CONTRACTOR shall adequately protect the new concrete from the effects of rain before the concrete has sufficiently hardened. For this Work the CONTRACTOR shall have available on the job site at all times enough burlap or 6 mil polyethylene film to cover and protect one (1) day's work.
 - 1. When rain appears eminent, all operations shall stop and personnel shall begin covering. As soon as the rain ceases, the concrete shall be uncovered and the surface burlap dragged where necessary.
 - 2. Curing compound shall be applied to any areas where the compound has been disturbed or washed away.
- B. If concrete is placed between October 15 and May 15, the CONTRACTOR shall have available on the site sufficient amount of clean, dry straw or hay to cover one day's production.

1. If the temperature reaches 40 degrees F and is falling, the hay or straw shall be placed 12 inches thick, immediately after the curing compound is applied.
 2. If the temperature is 30 degrees F and falling the curing shall be by 6 mil polyurethane film placed on the concrete as soon as the surface moisture has disappeared, and then covered with 12 inches of straw or hay.
 3. Also, whenever the temperature in the shade falls below 50 degrees F, the water, sand and coarse aggregate shall be heated in that order sufficiently to maintain a uniform temperature of the concrete at between 70 to 80 degrees F.
- C. Concrete shall not be placed when the temperature of the concrete at the point of placement is above 90 degrees F.

3.12 CLEANUP

- A. After the concrete has gained sufficient strength, but no sooner than within 12 hours, the fixed forms shall be removed and the spaces on both sides shall be immediately backfilled with sound earth of topsoil quality. The backfill shall be compacted, leveled and left in a neat, workmanlike condition.
- B. At a seasonally correct time approved by the ENGINEER, the disturbed area shall be raked, have topsoil placed thereon, fertilized and seeded per the requirements of Section 32 9219, Seeding, sodded in accordance with Section 32 9223, Sodding, or _____

3.13 TESTING

- A. The ENGINEER may require that a minimum of two cores be drilled from the sidewalk for each 500 linear foot (or fraction thereof) section placed. At least one (1) core out of two (2) required will be taken from the sidewalk at the driveway.
- B. One (1) core may be required for every 20 driveway approaches or sidewalk ramps installed.
- C. The cores shall be checked for depth and compressive strength.
 1. The core drilling and tests shall be done by a testing laboratory designated by the OWNER and at the expense of the OWNER.
 2. The testing laboratory shall furnish the ENGINEER with two (2) certified copies of the test results.
- D. In the event the test results on a core indicates a deficiency in either thickness or compressive strength the following adjustments in the unit price for concrete shall be made:
 1. Thickness

Under Required Thickness	Percent of Reduction in Unit Price
0 to 1/4 inch	None
more than 1/4 but not exceeding 1/2 inch	20
more than 1/2 but not exceeding 1 inch	50
more than 1 inch	Remove & Replace
2. Compressive Strength	
Under Required Compressive Strength	Percent of Reduction in Unit Price
0 to 150 psi	None
more than 150 but not exceeding 300 psi	20
more than 300 but not exceeding 500 psi	50
more than 500 psi	Remove & Replace

- E. The area of the deficient core shall be determined by the drilling and testing of two (2) additional cores, one (1) on each side of the deficient core and 20 feet from it when possible.
1. The extra core drilling and testing shall be at the expense of the CONTRACTOR.
 2. Reductions due to deficiencies in thickness or compressive strength are additive, that is, if an area is deficient by $\frac{3}{8}$ inch and under strength by 200 psi, the total reduction is 20% plus 20% or 40% reduction.

END OF SECTION

SECTION 32 17 13 PARKING BUMPERS

GENERAL

1.01 SCOPE

- A. This Section includes parking bumper fabrication, delivery, storage, installation and anchoring as well as protection and restoration of damaged Work.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 32 12 16 - Bituminous Paving
- C. Section 32 13 13 - Concrete Paving

1.03 REFERENCE STANDARDS

- A. ASTM A615/A615M: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- B. ASTM A1064/A1064M:
- C. MDOT: Michigan Department of Transportation, Standard Specifications for Construction, latest edition.

1.04 SUBMITTALS

- A. Submit manufacturer's literature showing material types and sizes, fabrication methods and finishes.

1.05 PRODUCT STORAGE AND HANDLING

- A. Store all parking bumper units in an area acceptable to the Engineer. Unit shall be stored in a location and a manner that will afford protection from damage due to construction operations or vandalism.
- B. Parking bumpers shall be lifted using acceptable slings or other equipment which will not cause cracking, breaking or chipping of the units during handling. Bumpers shall not be dropped.

PRODUCTS

2.01 CONCRETE

- A. The concrete shall conform to MDOT Section 1004, use 3,500 psi strength concrete; Type IA cement; MDOT 6A coarse aggregate; MDOT 2NS fine aggregate; 3 inch maximum slump; no admixtures without the Engineer's approval.

2.02 CONCRETE REINFORCEMENT

- A. Use ASTM A615/A615M, Grade 60 for bars and ASTM A1064/A1064M for welded wire fabric.

2.03 ANCHOR PINS

- A. Steel pins, as supplied by the manufacturer, shall be used to anchor parking bumpers. The pins shall have a minimum diameter of 9/16 inch and the length no less than the height of the bumper plus 12 inches.

2.04 FABRICATION AND MANUFACTURE

- A. Precast concrete parking bumpers shall be factory cast to the size and dimensions indicated on the Plans by the manufacturer's standard fabrication methods. Units shall be cast with reinforcing steel bars and shall have a minimum of two (2) cast-in or drilled anchor holes as indicated.

- B. All edges, corners, angles and returns shall be sharp and true without burrs or breaks and all plane surfaces shall be flat.
- C. Parking bumper units shall be steam or moist cured using manufacturer's standard methods to provide the compressive strength specified.
 - 1. Standard type units shall be provided with flat, solid bottoms.
 - 2. Drain type units shall have flat, solid bottoms with slotted drainage openings as indicated on the Plans. Concrete finish for concrete parking bumper units shall be rough sand type.

2.05 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers include Nu-Cast Step and Supply Company, Redford, MI; American Vault and Concrete Products Corporation, Detroit, MI; Dura-Crete, Warren, MI; or equal.

EXECUTION

3.01 INSTALLATION

- A. Parking bumper units shall be placed, as nearly as possible, to the locations and lines indicated on the Plans.
- B. In unloading and placing units, suitable skids, slings, straps or other lifting devices which will not cause damage or breakage of the units shall be used. Parking bumpers shall not be dragged, bumped or dropped during installation.
- C. Installation shall be such as to protect the paving and the parking bumpers at all times.
- D. Parking bumpers shall be secured in place at the locations shown on the Plans and by methods recommended by the manufacturer. Where drilling of pavement is called for, drilling equipment shall be acceptable to the Engineer.

END OF SECTION

SECTION 32 17 23 PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section includes pavement markings complete with materials, layout of markings and preparation of pavement surfaces.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 33 00 - Submittal Procedures

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. ASTM D4505: Standard Specification for Preformed Retroreflective Pavement Marking Tape for Extended Service Life
 - 2. ASTM D4592: Standard Specification for Preformed Retroreflective Pavement Marking Tape for Limited Service Life
 - 3. AASHTO M 247: Standard Specification for Glass Beads Used in Pavement Markings
 - 4. AASHTO M 249: Standard Specification for White and Yellow Reflective Thermoplastic Striping Material (Solid Form)
 - 5. AASHTO MP 24: Standard Specification for Waterborne White and Yellow Traffic Paints
 - 6. FS TT-P-1952: Paint, Traffic And Airfield Marking, Waterborne
 - 7. MDOT: Michigan Department of Transportation, Standard Specifications for Construction, latest edition

1.04 REQUIREMENTS OF REGULATORY AGENCIES

- A. Where applicable pavement markings shall conform to the current requirements of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) issued under provisions of the Michigan Vehicle Code, Act 300, PA 1949, as amended.

1.05 SUBMITTAL OF MANUFACTURER'S LITERATURE

- A. Submit manufacturer's literature of all paints to be used in the Work. Manufacturer's literature shall show paint: type, texture, color, temperature limitations, recommended use, spreading rate, drying time, and cleanup.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials to the Project site in original, unopened waterproof containers. Packaging containers shall bear manufacturing labels intact and legible.
- B. The label shall contain the following information: name and address of manufacturer, shipping point, trade mark or trade name, kind of paint, formula, amount in U.S. gallons, date of manufacture and lot number, type of paint and AASHTO Specification Number.
- C. Store all materials in waterproof containers, under protective covering, off the ground and away from extreme heat or cold until ready for use.
- D. Handling of materials shall be in accordance with the manufacturer's recommendations.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Contractor shall comply with the appropriate environmental limitations (air temperature, pavement temperature, and relative humidity) as outlined in MDOT Section 811.03.D.

PART 2 PRODUCTS

2.01 REGULAR DRY TRAFFIC MARKING PAINT

- A. Regular drying pavement marking paint in white and yellow colors shall comply with MDOT Section 920.
 - 1. Regular Dry traffic paint shall be selected from MDOT's Qualified Products List.

2.02 WATERBORNE PAVEMENT MARKING PAINT

- A. Waterborne pavement marking material in white and yellow colors shall comply with FS TT-P-1952 (Type I, II, or III), AASHTO MP 24 and MDOT Section 920.
 - 1. Waterborne pavement marking paint shall be selected from MDOT's Qualified Products List.

2.03 THERMOPLASTIC PAVEMENT MARKINGS

- A. Hot applied thermoplastic pavement markings in white and yellow colors shall conform to AASHTO M 249, white and yellow thermoplastic striping materials (solid form), and MDOT Section 920.
 - 1. Hot applied thermoplastic paving marking and shall be selected from MDOT's Qualified Products List.

2.04 COLD PLASTIC PAVEMENT MARKINGS

- A. Preformed cold plastic pavement markings in white and yellow colors shall comply with ASTM D4505 and conform to MDOT Section 920.
 - 1. Cold applied plastic pavement markings and shall be selected from MDOT's Qualified Products List.

2.05 POLYUREA PAVEMENT MARKINGS

- A. Two-component, polyurea pavement marking material in white and yellow colors shall conform to MDOT Section 920.
 - 1. Polyurea pavement marking material shall be selected from MDOT's Qualified Products List.

2.06 TEMPORARY PAVEMENT MARKING TAPE

- A. Temporary Pavement Markings shall comply with ASTM D4592, Type R and Type NR and shall conform to MDOT Section 922.06.A.
 - 1. Temporary Pavement Markings shall be selected from MDOT's Qualified Products List.

2.07 GLASS BEADS

- A. Glass beads for reflectorizing white and yellow paint markings of pavement by the drop-in method on fresh paint stripes shall comply with AASHTO M 247 and conform to MDOT Section 920.02.
 - 1. Glass beads for use in pavement markings for the type of paint specified shall be selected from MDOT's Qualified Products List.

PART 3 EXECUTION

3.01 VERIFICATION OF EXISTING CONDITIONS

- A. Prior to the placing of any pavement markings, examine the limits of the new Work and ascertain that the existing surfaces are adequate to receive the material to be installed.

3.02 PREPARATION OF SURFACE

- A. Surfaces to be painted must be thoroughly dry and free from dirt, loose paint, oil, grease, wax and other contaminants.
- B. Costs incurred for removing and disposing of unsuitable materials in preparation of the surfaces to receive the new Work, shall be incidental to the price paid for the pavement markings.

3.03 PERFORMANCE - GENERAL

- A. Pavement marking operation shall be limited to the type of Work and the limits as specified on the Plans. If additional area is required by Contractor for storage of equipment or supplies, Contractor shall furnish Engineer with written permission obtained from the property owner of the storage area, permitting the storage.
- B. Unless otherwise specified on the Plans or approved by Engineer, Contractor shall conduct his operations and use of his equipment in such a manner that traffic will be maintained throughout the Project.
- C. For Work within public rights-of-way and other areas as determined by Engineer, the provisions for maintaining traffic shall be as specified in the Michigan Manual of Uniform Traffic Control Devices (MMUTCD). Costs incurred in maintaining traffic shall be at Contractor's expense.
- D. Contractor's equipment shall have sufficient paint capacity to enable sustained pavement marking operations and shall be equipped so as to assure uniform application of the paint and thermoplastic pavement markings.
 - 1. Equipment shall have mechanical bead dispensers or pressurized bead dispensers. In general, the equipment shall be that necessary to accomplish the marking operations in a safe, efficient, and workmanlike manner.
 - 2. For parking lots and other small areas, approved portable equipment and use of hand methods will be allowed.
- E. The color of the paint, and the width or type of markings shall be as specified on the Plans or as directed by Engineer.
- F. Markings shall be applied so that they adhere adequately to the surface.
- G. Markings shall be applied in accordance with the applicable requirements of MDOT Section 811 for permanent pavement markings or MDOT Section 812.03 for temporary pavement markings.
 - 1. Unless otherwise specified, removal of temporary pavement markings shall be incidental to the Project.

3.04 LAYOUT FOR MARKINGS

- A. Layout work necessary for the location and placing of markings, as specified on the Plans or as determined by Engineer, shall be the responsibility of Contractor and shall be at his expense.

3.05 APPLICATION OF WATERBORNE MARKINGS

- A. Waterborne paint shall be applied when the air temperature is 50 degrees F or higher and the pavement is dry.
- B. Contractor shall be responsible for making the decision to apply waterborne paint on any specific day when there is a high probability of rain in the forecast.
 - 1. If applied lines are washed away because of rain, Contractor shall be responsible for re-applying the lines at no additional expense to Owner.
- C. Waterborne pavement marking materials may be placed immediately on new bituminous pavement.
 - 1. Waterborne pavement marking material shall not be placed before May 1, or after October 1.

- D. Waterborne paint shall be applied with an application thickness of 15-mil and 8-mil dry thickness. Glass beads shall be added at the rate of 32 lbs per mile per 4 inch line, during the application process.

3.06 APPLICATION OF PRE-FORMED HOT-APPLIED THERMOPLASTIC MARKINGS

- A. Since subsurface moisture can be present in amounts sufficient to affect proper bonding of the hot-applied thermoplastic material, Contractor shall be responsible for insuring that the pavement is free of excess moisture that may effect proper bonding prior to beginning work.
- B. Testing for moisture shall be documented and provided to Engineer.
- C. Minimum ambient air temperature shall be 48 degrees F and rising at the start of marking operations. If work is started and the air temperature falls below 45 degrees F, and continual cooling is indicated, all work shall be stopped. The minimum pavement temperature is 50 degrees F.
- D. Thermoplastic material shall be heated and applied within the temperature range recommended by the manufacturer.
 - 1. Thermoplastic material shall not be placed before May 14, or after October 1.

3.07 APPLICATION OF POLYUREA PAVEMENT MARKINGS

- A. Polyurea pavement markings shall not be applied over existing non-polyurea pavement markings.
- B. Existing non-polyurea pavement marking shall be completely removed before applying polyurea pavement markings.
- C. Remove curing compounds from concrete pavement.
- D. Apply at 15 to 25-mil thickness. Pavement shall be clean and dry. Pavement temperature shall be 40 degrees F higher unless otherwise approved by Engineer.

3.08 TOLERANCES

- A. New markings and/or retraced markings shall be placed, with reasonable tolerance, in their proper locations.
- B. Incorrect or misplaced markings shall be obliterated and remarked in accordance with Engineer's instructions.
- C. Costs incurred to obliterate and remark incorrect or misplaced markings will be at Contractor's expense.

3.09 PROTECTION OF MARKINGS

- A. Protection of the wet paint and thermoplastic pavement markings shall be the responsibility of Contractor, and all costs incurred to provide the protection will be at his expense.

3.10 WEATHER AND TIME LIMITATIONS

- A. Markings shall not be placed when rain is threatening or when the surface to be painted is wet.
- B. Pavement marking shall be performed during the period May 1 to November 1, unless otherwise approved in writing by Engineer.
- C. No markings shall be applied when the air temperature is less than 50 degrees F, as determined by Engineer.

END OF SECTION

SECTION 32 90 00 PLANTING

GENERAL

1.01 SCOPE

- A. This Section includes furnishing trees, shrubs and ground cover as shown on the Plans, complete with the digging and preparation of holes, furnishing and placing of topsoil, planting, pruning, watering, fertilizing and cultivating; weed control fabric, and such other materials necessary to complete the Work and insure proper and hardy growth.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 89 00 - Site Construction Performance Requirements

1.03 SOURCE QUALITY CONTROL

- A. Trees, shrubs and ground cover shall comply with state and federal laws with respect to inspection for plant diseases and insect infestation.

1.04 REFERENCE STANDARDS

- A. AAN - American Association of Nurserymen
- B. AANLS - American Association of Nurserymen Landscape Standards
- C. ANSI - American National Standards Institute
- D. ASTM C33/C33M: Standard Specification for Concrete Aggregates
- E. ASTM D4491/D4491M: Standard Test Methods for Water Permeability of Geotextiles by Permittivity
- F. ASTM D4533/D4533M: Standard Test Method for Trapezoid Tearing Strength of Geotextiles
- G. ASTM D4632/D4632M: Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
- H. ASTM D4751: Standard Test Methods for Determining Apparent Opening Size of a Geotextile
- I. ASTM D4833/D4833M: Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
- J. ASTM D5261: Standard Test Method for Measuring Mass per Unit Area of Geotextiles
- K. MDOT - Michigan Department of Transportation Standard Specifications for Construction, latest edition

1.05 SUBMITTALS

- A. Contractor shall submit to the Engineer certificates of inspection for plant diseases and insect infestation.
- B. Submit a certified analysis of imported topsoil from each off-site source prior to delivery. Deficiencies shall be corrected at Contractor's expense.
- C. Submit sample of mulch and planting mixture prior to delivery to site.
- D. Submit product data for anti-desiccants, tree wound dressing and herbicides prior to use.

1.06 PLANT SELECTION AND INSPECTION

- A. All trees shall be inspected and accepted prior to planting. Contractor may elect either of the following options as applicable:

- B. For sources within 120 miles of the site, the Engineer will tag the trees at the source. Contractor shall request, in writing, at least two (2) weeks prior to any desired inspection date, inspection and approval of the trees at the source. Approved trees will be tagged by the Engineer and the tag shall remain on the tree until planting and final inspection. Contractor shall accompany the Engineer on the inspection.
 - 1. Otherwise, the trees will be delivered to the site. Trees approved for use will be tagged by the Engineer and the tag shall remain on the tree until planting and final inspection. Rejected trees will not be tagged and shall be immediately removed from the site, and new trees shall be brought in for inspection and approval.
- C. Plant material shall be subject to approval by the Engineer at the site prior to planting.

1.07 PREPARATION OF SHIPMENTS

- A. Plant material shall be clearly labeled as to species and variety. The label or tag shall be securely attached to each plant and shall show the scientific name of the plant. Unless otherwise shown on the Plans, all plants shall be balled and burlapped or container grown.
- B. In preparation for spring planting, all balling operations for balled and burlapped stock shall be completed prior to "bud break." In preparation for fall planting of deciduous plants, balling operations shall not commence until after the plants have begun to "harden off."
- C. Stock shall be dug and packed with care immediately prior to shipment. Plants shall be dug and transported so as to provide and retain a firm ball of earth.
- D. The roots shall be carefully protected with wet straw, moss or other material. The root balls shall be adequately protected from rain or sudden changes in the weather. Balled and burlapped plants will not be accepted if the balls of earth are loosened or broken, or wrapped with material made from synthetics or plastic.
- E. Plants furnished in containers shall have their roots well established in the soil mass and shall have grown in the container for at least one (1) growing season. Containers shall be of a size large enough to provide an earth-root mass of adequate diameter and depth for the stem diameter and plant height or spread, as established by accepted nursery practice. No container grown stock will be accepted if it is root bound.
- F. The transporting of all nursery stock shall be in an enclosed or covered vehicle. Deliver plant material immediately prior to planting. Keep plant material moist.
- G. Plants will be rejected when the ball of earth surrounding the roots has been cracked or broken prior to or during the planting.
- H. Plants shall be rejected when the burlap, stakes, or ropes required in connection with transplanting have been displaced prior to final acceptance.

1.08 STORAGE AND HANDLING

- A. Roots of plants shall be kept moist and adequately protected by topsoil or other approved covering until planted.
- B. Trunks and branches of trees shall be carefully protected from injury of any kind during operations of digging, loading, transporting and planting. Trees that are injured may be rejected.

1.09 PLANTING SEASON

- A. The planting seasons for deciduous plants shall be between March 1 and June 1 and from October 1 until the ground becomes frozen, except that, when unusual planting conditions exist or when container-grown material is used, these planting seasons may be altered.
 - 1. When approved by the Engineer, plants, having a ball of earth attached, may be planted during the summer months, provided adequate moisture will and can be applied to the plants.
- B. The planting season for evergreen plants shall be between March 1 and June 1.

1.10 GUARANTEE AND ACCEPTANCE

- A. Contractor shall warrant that all trees have been grown, transported, handled and planted properly so as to be in a vigorous growing condition at the start of the establishment period.
- B. Trees, shrubs and ground cover shall be guaranteed for the establishment period(s). Contractor shall replace all trees, shrubs and ground cover showing defective growth, more than 20% dieback, disease, insect infestation or other impairing defects during the Establishment Period with sound, healthy, vigorous growing trees, shrubs and ground cover at no additional expense to the Owner and in accordance with the plans and specifications.
- C. At the end of the Establishment Period, the Contractor shall request final acceptance. Final acceptance will be made by the Engineer and Owner provided the trees are healthy and all requirements of the Project have been fulfilled.

1.11 EXPERIENCE AND QUALIFICATIONS

- A. Concrete shall conform to MDOT Section 1004, use 3500 psi strength concrete; Type IA cement; MDOT 6A coarse aggregate; MDOT 2NS fine aggregate; 3 inch maximum slump; no admixtures without the Engineer's approval.
- B. Contractor or Subcontractor must be experienced and capable of completing the Work so that the plant materials are in a healthy, vigorous growing condition at the end of the Project. In order to show that the Contractor or Subcontractor is capable of completing the Work successfully, when requested by the Engineer, the Contractor shall submit references from the last five (5) projects of a similar nature. Failure to show successful completion of the last five projects of a similar nature may result in the Contractor or Subcontractor being deemed unacceptable for this Work on this Project.

PRODUCTS

2.01 TREES AND SHRUBS

- A. All trees and shrubs shall conform to the requirements of AANLS and as specified herein.
- B. Plant material shall conform to the sizes given in the plant list or Proposal. All measurements such as spread, ball size, number of canes, quality designations, etc. shall be in accordance with AAN "American Standard for Nursery Stock".
- C. Plant material shall be typical for their species or variety and shall be sound, healthy, vigorous, and free from plant diseases and insect pests or their eggs. They shall have healthy, well developed root systems.
- D. Plants designated "B&B" shall be balled and burlapped. They shall be dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Balls shall be securely wrapped with burlap and bound with cord. No balled and burlapped plant shall be planted if the ball is cracked or broken. No planting with rot proof burlap or ties shall be permitted. Sand balls are not acceptable.
- E. Trees shall be nursery grown stock which has been pruned to encourage single main stems, compact fibrous root systems and symmetrical branching. Trees of the same species shall be uniform in height and spread. All trees shall be free from all insects, diseases, mechanical injuries or other objectionable features. Root balls shall be of the sizes specified in AANLS for the tree root system.
- F. Container-grown stock shall have been grown in the containers for one (1) growing season minimum. Plants showing "Pot Bound" root ends will not be accepted.
- G. Trees caliper for trees less than 4 inch caliper shall be determined at a point 6 inch above ground when installed. Trees above 4 inch caliper shall be measured at a point 12 inch above the ground.
- H. Ornamental trees and shrubs shall be well formed and shall have a crown typical of the species or variety. Low-branched crown types shall be furnished unless the Plans or Proposal specifies

a tree form or bush form. Material shall be balled and burlapped, unless otherwise indicated.

- I. Plant stock shall have grown to the required size in a normal progressive manner. Heading-back plants to meet sizes called for on the Plans will not be permitted.
- J. Evergreen trees will require ball and burlap or other adequate root protection. Tops shall be of a form typical to the species and not unnaturally sheared or color treated. Anti-desiccant protection may be required for evergreen trees.
- K. Plant material shall be nursery grown at sources in the same or higher hardiness zone as determined by the latest edition of the Plant Hardiness Zone Map, Agricultural Research Service, U.S. Department of Agriculture.
- L. Substitutions will be permitted only upon submission of proof that specified plants are not obtainable and with the authorization of the Engineer. Requests for substitutions and price adjustments due to substitutions must be submitted in accordance with the General Conditions.

2.02 MULCHING

A. Mulching material shall be one of the following as specified on the plans.

1. Compost:

- a. Compost shall be mature/stabilized, humus-like material derived from the aerobic decomposition of yard waste (i.e., grass clippings and leaves) or other materials as designated compostable as defined in MCLA PA 641 as amended and shall be in compliance with all federal and state laws. T
- b. Compost shall have a dark brown or black color, be capable of supporting plant growth without ongoing addition of fertilizers or other soil amendments and shall not have objectionable odor. The mixture shall be free of glass, plastic, metal, and other contaminants, as well as viable weed seeds and other plant parts capable of reproducing. The mixture shall be such that no visible water or dust is produced when handling it.
- c. The manufacturer of the compost shall provide test data and a statement to show that the following criteria are being met by the compost provided for the project. The composition of the compost shall be within the following range of values:

Quality Parameter	Range of Value
Soil pH	6 to 7.5
Soluble Salts	2 to 5 mmho/cm
Carbon/Nitrogen Ratio	13 to 20 parts C to 1 part N
Inerts	< 1%
Organic matter	35 to 55 %
Nitrogen	1 to 2 %
Phosphorus	0.2 to 0.8 %
Potassium	0.5 to 1.5 %
Unit Weight	535 to 775 kg per cubic meter
Moisture Content	40 to 50 %
Particle Size	< 20 mm maximum
Water Holding Capacity	> 100%
Heavy Metals	None

- d. Maturity/Stabilization: An acceptable test that can demonstrate Maturity/Stability.
- e. Temperature: Compost material must have undergone the procedure to significantly reduce the pathogen level as referenced in EPA 40 CFR, Part 257 Regulations, Federal Register Vol. 58, No. 32, dated 2/19/93; Rules and Regulations. The temperature must be maintained at 104 degrees F for 5 days with a temperature

exceeding 130 degrees F for at least 4 hours.

- f. Pathogens and Trace Elements: Shall meet the requirements of EPA 40 CFR; Part 503 Regulations, Federal Register Vol. 58, No. 32, dated 2/19/93; Rules and Regulations.
- g. To comply with the annual filing requirements with the Michigan Department of Agriculture, Pesticide and Plant Management Division, the supplier of the compost shall certify that the compost meets Michigan P.A. 641, as amended, and EPA 40 CFR, Part 257 and 503 Regulations, Federal Register Vol. 58, No. 32; dated 2/19/93; Rules and Regulations.
 - 1) A data sheet shall accompany the certification. The data sheet shall show the following:
 - (a) Standard compost total nutrient test results, including N, P, K, Ca, Mg, Mn, Cu, Fe total carbon, pH, as provided by an acceptable testing laboratory
 - (b) Organic content
 - (c) Inert contamination
 - (d) Soluble salts
 - (e) Carbon/Nitrogen ratio
 - (f) Proof of maturity/stability acceptable to the Michigan Department of Agriculture
2. Wood Chips:
 - a. Wood chips shall be the product of a mechanical chipper. Chips shall not include twigs, chopped leaves, or pine needles. Suitability of chip material and size will be determined by visual inspection by the Engineer. Wood chips shall be produced from trees free of any insects and diseases.
3. Shredded Bark:
 - a. Shredded bark shall consist of tree bark which has been stripped and shredded from saw logs by means of a debarking machine. Shredded bark shall be produced from trees free of any insect and diseases. The material shall be sufficiently fine and free from extraneous material so that it will readily pass through a conventional mulch blower.
4. Double Shredded Bark:
 - a. Double processed shredded bark mulch shall be shredded bark mulch which has been processed twice.

2.03 TOPSOIL

- A. Topsoil shall be fertile, friable, sandy clay loam without admixture of subsoil. Topsoil is to be free of glass, stones greater than one in any dimension, weeds, undesirable grasses and other extraneous materials. Topsoil shall have the following range of values:
 1. pH 5.0 to 7.5
 2. Soluble Salts 500 ppm max
 3. Organic Content 5% to 30%
 4. Silt Content 35% to 50%
 5. Clay Content 5% to 10%
 6. Deleterious Mat'l* 5% max *rock, gravel, stone, sticks, roots, sod, etc.
- B. Compost may be mixed with topsoil to obtain the desired content. Topsoil is to be final screened thru a 5/8 inch maximum mesh screen prior to delivery to the Project site.

1. Engineer shall review source and final screen results prior to release of topsoil. Contractor shall submit a certified analysis of the topsoil from each source to the Engineer.
2. Topsoil shall be placed in 4 inch (100 mm) minimum thickness throughout, or as specified in the plans or Specifications.
- C. Contractor shall obtain his own topsoil borrow pit source and shall obtain necessary permits and agreements for the use of such borrow pits at his own expense.

2.04 SAND

- A. Sand for planting mixture shall be clean, coarse, ungraded sand conforming to ASTM C33/C33M for fine aggregates.

2.05 FERTILIZER

- A. Fertilizer shall be Agriform 21-Gram Planting Tablets Plus Minors or Engineer approved equal. Planting Tablets shall be tightly compressed, long-lasting and slow-release with an N-P-K analysis of 20-10-5. Apply at manufacturer's recommendations and soil analysis.

2.06 PEAT

- A. Granulated raw Canadian peat or baled Canadian peat, containing not more than 9% mineral on a dry basis. For ericaceous plants, baled peat with a pH of 4.0 shall be used.

2.07 LANDSCAPE WEED CONTROL FABRIC

- A. Weed barrier fabric shall consist of a geotextile fabric, spun-bonded polypropylene, non-woven fabric and a UV stabilizer.
- B. Fabric shall have the following Minimum Average Roll Values:

Fabric Properties	Minimum Values	Test Method
Unit Weight	3.0 oz/yd ²	ASTM D5261
Grab Tensile Strength	135 lbs.	ASTM D4632/D4632M
Elongation at Break	70%	ASTM D4632/D4632M
Puncture Strength	35 lbs.	ASTM D4833/D4833M
Trapezoidal Tear	50 lbs.	ASTM D4533/D4533M
Permittivity	1.2 sec. ⁻¹	ASTM D4491/D4491M
Apparent Opening Size (equivalent Sieve)	60/70	ASTM D4751
Ultraviolet Stability	70% @ 500 hrs.	ASTM D4355/D4355M

2.08 STEEL LANDSCAPE EDGING

- A. Comply with ASTM A36/A36M or ASTM A283/A283M, hot-rolled, standard flexible carbon steel landscape edging, fabricated in sections with stake pockets stamped, punched, or welded to face of sections approximately 30 inches apart to receive stakes. Steel landscape edging shall be double staked at overlap joints, and designed to receive tapered steel stakes.
- B. Steel Edge shall be 12ga steel, 4 inches wide, by 10 foot length, with 4 stakes. Painted finish shall be Sherwin Williams H68GT85 powder coat paint electrostatically applied and oven baked. Minimum thickness to be 1.5 mils. Color shall be green, brown, or black as determined by the Owner.
- C. Steel stakes shall be Steel, tapered, 14 inch length and finished to match specified steel landscape edging. Stakes shall be designed specifically to anchor steel landscape edging in place, and made by the manufacturer of the steel landscape edging for which they will be used.
- D. Furnish and install manufacturer's standard start/end sections, 90 degree corners, and splicers as required.

2.09 STAKES FOR GUYING AND BRACING

- A. Stakes used for bracing or guying plants shall be sound wood of nominal 2 x 2 inch stock and shall be approximately 30 inches in length for guying or of the required length for bracing. The stakes shall be pointed on one end by beveling on two (2) sides.
- B. Metal stakes for bracing trees shall be green metal T-section posts with no anchor plates. Posts shall be at least 8 foot long. Posts shall only be used where specified on the plans.

2.10 WIRE FOR GUYING AND BRACING

- A. Wire shall be new and free from bends or kinks.
- B. Wire used for guying trees 4 inches or less in diameter shall be No. 11 steel wire.
- C. Wire used for guying trees over 4 inches in diameter shall be No. 9 galvanized steel wire.

2.11 HOSE

- A. Hose used with wire for guying trees shall be new 1/2 inch reinforced rubber garden hose or steam hose.

2.12 PLASTIC GUYING AND BRACING MATERIAL

- A. High density polyethylene, chain-lock type material, 1 inch wide with a breaking strength of 100 lbs minimum.
- B. Flat, woven, webbing type 3/4 inch wide tape constructed of polypropylene with a breaking strength of 900 lbs in either white or olive green.

2.13 TREE BALLING BURLAP

- A. Balling material shall be untreated burlap or other material which will readily decompose. Synthetic materials such as nylon or plastic will not be permitted.

2.14 PLANTING MIXTURE

- A. Planting mixture shall be a mixture of 1/3 topsoil, 1/3 sand, and 1/3 peat. Add fertilizer at the quantity as recommended by the manufacturer. Planting mixture shall be free from stick, stones, sod, clods or other material which might leave pockets around the roots.

2.15 BIORETENTION PLANTING MIXTURE

- A. Bioretention planting mixture shall have a sandy loam, loamy sand, or loam texture per USDA textural triangle. Maximum clay content shall be 5%.
- B. The soil mixture shall have a pH between 5.5 and 6.5 and an organic content of 1.5 – 3.0%.
- C. The soil mixture shall have an infiltration rate greater than 0.5 inches/hr.
- D. The soil shall be a uniform mix, free of stones, glass, trunks, roots, or other similar objects larger than 1 inch.
- E. No other material or substances shall be mixed or dumped with the bioretention mix that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations.
- F. The planting mixture shall be free of Bermuda Grass, Quack grass, Johnson Grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, Tearhub, or other noxious weeds.

2.16 ACCEPTABLE MANUFACTURERS

- A. Plastic guying and bracing material shall be Adj-A-Tye heavy duty poly chain lock by A. M. Leonard Inc., ArborTape by Neptco Inc. or Engineer approved equal.

EXECUTION

3.01 CONTRACTOR'S VERIFICATION

- A. Contractor shall stake all plant locations and confirm the locations and type of plants to be placed with the Engineer. Inspect trees, shrubs and ground cover for injury, insect infestation

and improper pruning. Verify that all trees, shrubs, and ground cover are in healthy growing condition.

3.02 PREPARATION

- A. Contractor shall not begin excavation until stake out of tree and/or shrub locations are acceptable to the Engineer.
- B. Contractor shall stake enough planting locations for two weeks work. Contractor shall arrange periodic site meetings with the Engineer for the purpose of reviewing the work that has taken place in the prior two weeks and the staking for the next two weeks. Contractor shall notify the Engineer at least three (3) working days prior to the desired date for inspection of staking.
- C. Contractor shall accurately stake plant material location according to the plans. Stakes for trees shall be 36" high above finished grade and painted a bright color to be clearly visible for inspection. Distinguish by color between types of material, i.e., evergreen trees, canopy trees, flowering trees. Staking for shrubs, perennials, and ground covers shall be staked 18 inches high above finished grade and painted white. Stakes shall be placed at the perimeter and at the bed line 30 feet on center. Engineer shall review the locations and make changes in locations as necessary.

3.03 PLANTING

- A. Balled and burlapped plants shall be set plumb. Tree pits shall be excavated as shown on the plans. Contractor shall dispose of subsoil dug from pits, trenches and beds.
- B. Contractor is responsible for planting to correct grades and alignment and all plants shall be set so that, when settled, they will bear the same relation to finish grade as they did before being transplanted. No filling will be permitted around trunks or stems.
- C. At the start of the Work tree pits and beds are to be excavated and the Contractor shall request inspection and approval by Engineer. Approval must be received before backfilling occurs.
- D. The root ball shall be set on a compacted base as detailed. Burlap shall be cut away from top 1/3 of the root ball and all ropes, wires, etc. securing the ball shall be removed.
- E. Plastic tape and/or plastic fabric shall be completely removed from the root ball during the planting operation. "Rot proof" or treated burlap shall also be totally removed.
- F. Container-grown plants shall be planted as specified for balled and burlapped stock, except that when plants are furnished in nonplantable containers, the container shall be removed only at the time of planting. Plants furnished in plantable type containers shall have container sides severed in multiple places and the upper half of the container removed during the planting operation. Care shall be taken to protect tree roots during severing and removal operation.
- G. When the plant has been properly set, the pit shall be backfilled with planting mixture, gradually filling, tamping and settling with water. No soil in a frozen or muddy condition shall be used for backfilling. The backfill shall be placed to an elevation flush with the ground elevation and the rootball, except that a saucer shall be created near the edge of the hole to capture water.
- H. During fall planting, an Engineer approved superphosphate fertilizer shall be applied over the planting mixture at a rate per the manufacturer's instructions.
- I. All evergreen plant material shall be sprayed with an Engineer approved anti-desiccant according to manufacturer's instructions and limitations immediately following planting and during final seasonal watering.

3.04 MULCHING

- A. After backfilling is completed, mulching material shall be placed over the plant hole area to a depth of 5 - 6 inches or as specified on the plans. Thoroughly soak all mulched areas. After watering, all mulched areas shall be raked and left in a complete and finished manner.
- B. Perennial areas shall have 3 inches of mulch or as specified on the plans. Mulch these areas first and then plant ground cover through the mulch.

- C. Planting beds shall be mulched with a 4 inches cover of mulch as shown on the drawings and details, unless otherwise indicated on the drawings. Mulch depths shall be 4 inches at time of inspection.
- D. For plants located on slopes, an earth saucer or berm shall be constructed halfway around each plant on the down slope side. The saucer or berm shall have an inside diameter equal to that of the planting hole, and a maximum height of 6 inches. A trench shall be dug on the down slope side and filled with planting mixture to allow for drainage.

3.05 BRACING AND GUYING

- A. Only evergreen trees equal to or larger than 5 feet high and deciduous trees with a caliper equal to or larger than 2 inches need to be staked or guyed unless clay soil conditions exist, a tree is planted on a steep slope, or otherwise becomes apparent that a tree needs to be braced or guyed.
 - 1. Trees required to be braced, shall be braced or guyed immediately after planting.
 - 2. All plants required to be braced shall be braced with a minimum of two (2) stakes. Stakes shall be driven to avoid ball and shall be no closer than 1 foot -foot (300 mm) from the trunk.
 - 3. Stakes shall be driven to a depth which will firmly anchor the plant, but in no case less than 1 foot below the bottom of the planting hole. The wide side of the stake shall face the trunk of the plant.
 - 4. Stakes shall extend to within 4 inches of the lowest plant's main branches. Top of stake shall be firmly attached to the trunk with steel wire or plastic guying and bracing material.
 - 5. When using steel wire, place wire so it forms a figure eight (8) around the stake and trunk. Portions of wire around trunk shall be encased in water hose of sufficient length to contain the wire loop around the trunk. Enclosed trunk loops shall not restrict normal trunk growth.
 - 6. Stakes shall be positioned on opposite sides of trunks and secured to the trunk at approximately 2/3 the height of plant. Warning tape or ribbon shall be tied to the wiring between the tree and the stake.

3.06 PRUNING

- A. Where determined by the Engineer, pruning will be required. All pruning of the new plants shall be done by workmen experienced in this type of Work. Pruning shall be completed prior to planting. Hedge shears shall not be permitted for pruning. Pruning shall be done in accordance with the best standard practices.
- B. Deciduous trees shall have branches pruned to balance the loss of roots in such a manner as to retain the natural form of the tree type.
- C. Evergreen trees shall be pruned only to the extent of removing broken or damaged branches.
- D. Cuts shall be made flush, leaving no stubs. Paint all cuts over 3/4 inch in diameter with tree paint.
- E. Notify the Engineer at least one (1) week prior to pruning operations.

3.07 WATERING, FERTILIZING AND CULTIVATING

- A. All plants shall be thoroughly soaked after planting. After all watering, all beds shall be raked and left in a complete and finished manner.
- B. Watering, Fertilizing and Cultivating is required during the Establishment Period. Watering, Fertilizing and Cultivating shall include all measures necessary to establish and maintain plants in a vigorous and healthy growing condition for the entire Establishment Period.
- C. Contractor shall manually water the plants a minimum of once a week or as necessary to keep the plant in a thriving condition from May 15 until October 15 or for the duration of the Establishment Period.

- D. If the planted areas have an automatic irrigation system that the Contractor is relying upon, it is the responsibility of the Contractor to ensure that the irrigation system is functioning properly.
 - 1. If the Contractor concludes that at any time the irrigation system is not working properly, then they shall notify the Engineer or the Owner so that it may be fixed in a timely manner.
 - 2. However, the Contractor will have to manually water the plants as necessary to keep them in a thriving condition at all times that the irrigation system is not working properly.
- E. Keep planting beds and tree saucers free from weeds to the satisfaction of the Owner. Treat mulch with pre-emergent weed killer.
- F. Keep trees erect. Raise trees that settle below grade to the established elevation. Keep tree wrap and wire in neat condition. Prune dead or broken branches from all trees and shrubs. Fill to the original grade level areas that have settled around trees and shrubs.
- G. Winter protection shall include late fall spraying of all evergreen trees and evergreen shrubs with anti-desiccant, emulsion type agent, at the manufacturer's recommended rate to prevent winter desiccation and late fall watering if required by a dry season.
- H. At the seasons first watering, an Engineer approved organic timed release, balanced fertilizer shall be applied to the ground around the tree at the rate instructed by the manufacturer. In lieu of organic fertilizer, pre-packaged, controlled release fertilizer packets may be used. Use one (1) 2 oz packet of fertilizer per every 1 inch caliper of tree, or one (1) 2 oz packet for every shrub.
- I. During the first and second watering of the growing seasons, the water used for each plant shall be a nitrogen-enriched solution containing available nitrogen at the rate of 8.5 lbs/1000 gallons of water (42 pounds of 20-0-0, or 18 pounds of 45-0-0, fertilizer per 1,000 gallons of water). No fertilizer shall be applied after July 7.
- J. During the establishment period(s) as called for in the Contract Documents, the Contractor shall do all required watering, cultivating, pruning, fertilizing, weeding, and all other work necessary to keep the planted material vigorously growing sound and healthy. Contractor shall repair or replace any guying or bracing which is damaged, destroyed, or broken. Contractor shall spray any plant material which becomes diseased or infested with insects.
- K. Contractor shall repair or replace any trees which are blown over, knocked down, uprooted or otherwise become impaired or defective.
- L. Contractor shall replace any plant material which is not in good physical condition, has more than 20% die back, shows defective growth, disease, signs of insect infestation, or any other signs of impairing defects during the Establishment Periods.
- M. Contractor shall repair or replace any plant material damaged or impaired by wind, rain, snow, ice, sleet, sun, heat, drought, or any other weather related occurrences.
- N. The costs for all labor, material, and equipment necessary to carry out the provisions of this Article shall be included in the Contractor's bid price for the planting of trees unless otherwise indicated in the Proposal. Contractor shall notify the Engineer prior to beginning any work called for under this Article.
- O. At the end of the Establishment Period, unless otherwise determined by the Engineer, the guying material, wrapping material, identification tags, and inspection tags shall be removed and disposed of off the project and the mulch around all the plants shall be replenished to the required depth of 5 - 6 inches.

3.08 ESTABLISHMENT PERIOD

- A. The Establishment Period shall begin on the day of written acceptance of the installation of the trees, shrubs, bulbs, ground cover or other plant material. Each subsequent establishment period shall begin on the same day of the succeeding year(s). The Establishment Period shall be a minimum of one year unless otherwise indicated in the Contract Documents.

3.09 SCHEDULES

- A. The general planting location, type and size of tree or shrub shall be as indicated on the Plans. Any substitutions of plant material or alteration in plant sizes or specifications shall be approved by the ENGINEER prior to ordering.

3.10 STEEL LANDSCAPE EDGING

- A. Install steel landscape edging where indicated on Drawings, according to manufacturer's recommendations. Anchor with steel stakes spaced approximately 30 inches on-center, driven below top elevation of edging, or at every stake pocket location in landscape edging sections designed and manufactured to receive stakes. Stakes shall be located in solid undisturbed soil, or in soil compacted to 85% of its maximum density.
- B. Install straight sections true to the alignments as indicated, free of waves or bends, using strings as guides. Install curved sections true to the alignments as indicated, free of waves or bends, following marked alignments approved in the field by the Engineer. Engineer shall be given the opportunity to review the layouts.
- C. Set top of edging flush with finish grade. Set top of stake 1/2 inch below top of edging.
- D. Replace edging sections damaged by construction operations.

END OF SECTION

SECTION 32 92 19 SEEDING

GENERAL

1.01 SCOPE

- A. This Section includes seeding complete with earth bed preparation, providing and placing topsoil, preparation and fertilizing topsoil, sowing of seed for lawns and other ground cover, protection of seeded areas, watering of seeded areas, mowing of seeded areas, protection and cleanup.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 2200: Unit Prices
- B. Section 01 8900: Site Construction Preparation Requirements
- C. Section 31 2200: Grading
- D. Section 32 9223: Sodding

1.03 REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with the applicable requirements of the Michigan Seed Law, Act 329, PA of 1965, as amended.
- B. Comply with the applicable requirements of the AOSA Rules for Testing Seeds.
- C. Chemical fertilizer shall be supplied in suitable bags with the net weight of the contents and guaranteed analysis shown on the container. Bulk shipments shall be accompanied by an analysis and net weight certification of the shipment.
 - 1. Custom mixed fertilizers shall be accompanied by a certification of the weight of each commercial fertilizer used in the mixture and a guaranteed analysis of each shipment expressed in percentages of total Nitrogen (N), total available Phosphoric Acid (P2O5) and total available Potash (K2O) included.

1.04 SOURCE QUALITY CONTROL

- A. A seed mixture proposed for use in the Work shall have been tested for purity and germination by the Seed Producer within nine (9) months of sowing.

1.05 REFERENCE STANDARDS

- 1. AOSA RULES - Association of Official Seed Analysts
- 2. ASTM C602: Standard Specification for Agricultural Liming Materials
- 3. ASTM D977: Standard Specification for Emulsified Asphalt
- 4. MDOT - Michigan Department of Transportation, Standard Specifications for Construction, latest edition

1.06 SUBMITTALS

- A. Submit Seed Producers Certification that seed meets the requirements of these Specifications and conform to the State of Michigan Seed Act referenced above.
- B. Where required, submit test reports for all seed proposed for use in the Work to the ENGINEER, showing results of purity and germination tests, compliance with regulatory agencies, dates and location of tests.

1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All material shall be delivered to the Project site in their original, unopened containers. Containers shall be clearly marked showing, name of manufacturer, brand name, trade name or generic name of material, warranty of analysis, net weight of contents and date of packaging,

- Q. ASTM C309: Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- R. ASTM C494/C494M: Standard Specification for Chemical Admixtures for Concrete
- S. ASTM C595/C595M: Standard Specification for Blended Hydraulic Cements
- T. ASTM C618: Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
- U. ASTM C989/C989M: Standard Specification for Slag Cement for Use in Concrete and Mortars
- V. ASTM D75 / D75M - 19 Standard Practice for Sampling Aggregates

1.04 REFERENCE SPECIFICATIONS

- A. The latest or current ACI Standards and Code Requirements for "Concrete and Reinforced Concrete" shall govern all concrete Work except where otherwise specified herein.
- B. Michigan Department of Transportation, Standard Specifications for Construction, latest edition (MDOT)

1.05 TESTING AGENCY

- A. All inspections and tests required by this Section shall be performed by organizations acceptable to the ENGINEER.

1.06 ALLOWABLE TOLERANCES

- A. See Section 03 1100, Concrete Forming, for the allowable tolerances for concrete surfaces.

1.07 DESIGN CRITERIA

- A. Mixes shall be designed and tested for each size and gradation of aggregates and for each consistency intended for use. Design quantities and test results of each mix shall be submitted for review.
- B. Necessary construction joints are shown on the Plans. Modification of location or placement of construction joints not indicated on the Plans shall be subject to approval of the ENGINEER. In general, they shall be located within the middle one-third of the span of slabs, beams, and girders unless a beam intersects a girder at this point, in which case the joint in the girder shall be offset a distance equal to twice the width of the beam.
- C. Joints in walls and columns shall be at the underside of floors, slabs, beams, or girders and at the tops of footings or floor slabs. Beams, girders, brackets, column capitals, haunches, and drop panels shall be placed at the same time as slabs. Joints shall be perpendicular to the main reinforcement.
- D. Expansion joint locations and details shall be as shown on the Plans. In no case shall any fixed metal be continuous through a expansion joint.
- E. Keyways shall be provided in all joints where required to provide for either shear or watertightness. Unless otherwise required, the width of keys shall be at least one-third the thickness of the section at that point and their depth at least one-third their width.

1.08 SOURCE QUALITY CONTROL

- A. Furnish tests of cement and aggregates. Material sampling shall conform to the following ASTM Standards:
 - 1. Cement C183
 - 2. Aggregates D75.
- B. Testing shall be in accordance with applicable ASTM Standards to assure compliance with Specifications.
- C. Make tests for the following quantities, or fraction thereof:

1. Cement: 550 tons
 2. Fine Aggregate: 2,000 tons
 3. Course Aggregate: 2,000 tons
- D. Use same brand cement for any given structure produced by a single mill unless otherwise provided by authorization of the ENGINEER.

1.09 SUBMITTALS

- A. Submit Shop Drawings showing the location of joints. Included shall be a schedule of the concrete pouring. The location of joints and pouring schedule shall be subject to approval by the ENGINEER.
- B. The CONTRACTOR shall submit test reports for cement and aggregates to assure compliance with the Specifications.
- C. Concrete mixture designs and test data shall be submitted for review by the ENGINEER with a written request for approval. No concrete shall be placed until the CONTRACTOR has received such approval in writing.
- D. Each mixture report shall include:
1. Slump on which design is based.
 2. Total gallons of water per cubic yard (l/m³).
 3. Brand, type, composition, and quantity of cement.
 4. Brand, type, composition, and quantity of pozzolan or other mineral admixtures.
 5. Brand, type, composition, and quantity of ground granulated blast furnace slag.
 6. Specific gravity and gradation of each aggregate.
 7. Ratio of fine to total aggregates.
 8. Weight (surface dry) of each aggregate, lbs./c.y. (kg/m³).
 9. Brand, type, ASTM designation, active chemical ingredients, and quantity of each admixture.
 10. Air content.
 11. Compressive strength based on 7-day and 28-day compression tests.
 12. Time of initial set.
- E. Submit manufacturer's literature of abrasive wear resistant floor finish and of chemical curing compound for review by the ENGINEER.
- F. Submit a sample concrete delivery ticket for review by the ENGINEER.
- G. Submit tickets collected at the site of concrete placement accompanying each load of concrete. A printout system for producing these tickets in connection with automatic batching will be permitted.
1. Each ticket shall be serially numbered, show the charging time, quantity and grade of concrete, location of delivery and the signatures of inspectors at the plant and site. Transit mixed concrete tickets shall also include revolution counter reading at charging and mixing completion.
- H. Submit reports of the sampling and testing of slump, air content and strength performed.
- I. Submit reports of nondestructive, core and/or liquid retention testing required for acceptance of concrete in place.

1.10 MATERIAL STORAGE AND HANDLING

- A. Materials shall be stored and handled in accordance with ACI 304R and as specified below.
- B. When permission is given to store cement in the open, a floor at least 6 inches above the ground and a waterproof covering shall be provided and so placed as to insure runoff in case of rain.
- C. Cement sacks shall be thoroughly shaken when emptying sacks into the batch. Cement salvaged by the CONTRACTOR by cleaning sacks mechanically or otherwise, or from discarded sacks of cement, shall not be used in the Work. The use of a fractional sack of cement will not be permitted unless the fractional part is measured by weight. At the time of its use in the Work, the cement shall be free from lumps.
- D. No aggregates which have become intermixed prior to proportioning shall be used. Sufficient aggregate shall be available at the site to preclude the possibility of damaging delays while placing the concrete.
- E. Cars used for shipping aggregates shall be clean and in good repair. The use of straw, marsh, hay or other similar materials for closing cracks or holes in cars will not be tolerated.
- F. Pozzolans and other cementitious materials shall be stored and handled in the manner of cement.
- G. Store and handle curing compound in a manner to prevent contamination.

1.11 ENVIRONMENTAL REQUIREMENTS

- A. Environmental requirements shall be in accordance with ACI 305R for hot weather concreting, and ACI 306R for cold weather concreting.
- B. Specific temperature requirements are contained in Part 2 of this Section for mixing and Part 3 of this Section for placing.

PRODUCTS

2.01 MATERIALS - GENERAL

- A. The materials shall meet the requirements of ACI 301, ACI 318, and MDOT Specification, Division 9.
- B. Concrete materials shall be tested and inspected as the Work progresses. The review and/or check-test of the proposed materials, securing of production samples of materials at plant stockpiles and/or review of the manufacturer's reports for compliance will be performed at no cost to the CONTRACTOR.
- C. Testing and inspection required due to substitution or change of materials requested by the CONTRACTOR shall be at the CONTRACTOR's expense.

2.02 CEMENT

- A. Cement shall be the type as indicated on the Plans or as specified.
 - 1. Type I and IA, conforming to ASTM C150/C150M, air-entraining Portland cement when special properties are not specified.
 - 2. Type III and IIIA, conforming to ASTM C150/C150M, air-entraining Portland cement for use when high-early strength is specified.
 - 3. Type IS and IS-A, conforming to ASTM C595/C595M, air-entraining Portland blast-furnace slag cement for use in general concrete construction.
 - 4. Type IP and IP-A, conforming to ASTM C595/C595M, air-entraining Portland-Pozzolan cement for use in general construction. The addition of suffix (MS) signifies that moderate sulfate resistance is specified. The addition of suffix (MH) signifies that moderate heat of hydration is specified.

2.03 AGGREGATES

- A. Washing will be required to eliminate the dust, clay, or silt coating. Aggregates which have been washed shall not be used sooner than 24 hours after washing, unless approved by the ENGINEER.
- B. Coarse aggregate shall be gravel or crushed rock, conforming to MDOT Section 902.03, Class 17A for members 8 inches or less in thickness and Class 6AA for other construction.
 - 1. Gravel shall consist of hard, clean, durable particles of rock or pebbles and shall be free from lumps of clay.
 - 2. Crushed rock shall consist of angular fragments of crushed hard heads or boulders or crushed igneous rock free from weathered rock and of uniform quality.
 - 3. All sieve and screen analyses determination of clay, silt, and dust content and percentages of objectionable particles will be based on dry weights and conform to MDOT Section 902.03, Table 902-1, "Grading Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open Graded Aggregates" and Table 902-2, "Physical Requirements for Coarse Aggregate, Dense Graded Aggregates and Open Graded Aggregates."
- C. Fine aggregate shall be sand size 2NS, MDOT, Section 902.08.
 - 1. Fine aggregates shall consist of sharp sand which shall be composed of clean, hard, durable grains and shall be free from lumps of clay and organic deleterious substances.
 - 2. Fine aggregates shall conform to MDOT Section 902.09 and Table 902-4, "Grading Requirements for Fine Aggregates."

2.04 ADMIXTURES

- A. Admixtures shall be used to achieve concrete as indicated on the Plans or specified herein. Calcium chloride shall not be used.
 - 1. Air-entraining, conforming to ASTM C260/C260M.
 - 2. Pozzolan and Fly Ash, conforming to ASTM C618, Class F.
 - 3. Water reducing, conforming to ASTM C494/C494M.
 - 4. Retarder, conforming to ASTM C494/C494M.
 - 5. Plasticizer, conforming to ASTM C494/C494M.
 - 6. Ground granulated blast furnace slag conforming to ASTM C989/C989M, grade 100.
- B. Abrasive wear resistant floor finish shall be packaged, dry combination of Portland cement, graded Quartz aggregate and dispersing agents formulated to produce an abrasive and wear resistant monolithic surface.

2.05 JOINT FILLER

- A. See Section 03 1500, Concrete Accessories.

2.06 WATER

- A. Water shall be free from oil, acid, alkali, organic matter, and any other deleterious substances. Water approved by the Local Board of Health may be used without testing. Water from other sources shall be tested before using.

2.07 CURING COMPOUND

- A. Shall be adequate to prevent checking, cracking and loss of moisture, conforming to ASTM C309.

2.08 MIXES

- A. Concrete shall consist of a mixture of air-entraining Portland cement, coarse and fine aggregate, Class F Fly Ash, and water with admixtures if required. Admixtures shall not be used without the ENGINEER's review.
- B. The mixture, combined in proportions, shall meet the requirements of MDOT, Specification Section 701, and ACI 211.1.
- C. Concrete shall be classified and proportioned on the basis of minimum compressive strength at 28 days when cured in a moist room at a temperature within the range of 68 - 75 degrees F. The desired strength of the concrete shall be shown on either the Plans or in the Specifications.
- D. Table 1 shows for each grade of concrete the minimum compressive strength, cement content, and the modulus of rupture. Concrete shall be 3,500 psi, unless otherwise shown on the plans.

Table 1 - Concrete Mixtures

Concrete Grade	Coarse Agg	Type of Cement	Cement Content	Min Compressive Strength @ 28 days	Min Modulus of Rupture @ 28 days	% Air
4500 psi	6AA	I, IA, IS, IS-A	658 lbs/cyd	4500 psi	725 psi	4 - 6
4000 psi	6AA or 17A	I, IA, IS, IS-A	611 lbs/cyd	4000 psi	700 psi	4 - 6
3500 psi	6AA or 17A	IS, IS-A, IP, IP-A	564 lbs/cyd	3500 psi	650 psi	4 - 6

- 1. Maximum water cement ration shall be 0.45
- 2. Structural concrete for walls and slabs shall be placed with a slump of 4 inches maximum.
- 3. Ground granulated blast furnace slag (GGBFS) may be substituted for cement on a pound for pound basis from a minimum of 25% up to a maximum of 40% GGBFS and 60% cement
- 4. Minimum fly ash content in the mix shall be 25%, additional fly ash may be substituted for cement on a pound for pound basis up to a maximum of 40% fly ash and 60% cement when approved by the ENGINEER.
- 5. Maximum total replacement of cement shall not exceed 40%.
- E. Aggregates shall be proportioned by weight, except for small structures and for incidental Work requiring less than 10 cubic yards of concrete, in which case they may be proportioned by volume when approved by the ENGINEER.
- F. Cement in bulk, when permitted, shall be proportioned by weight.
- G. When proportioned by volume, the amount of each aggregate required for a single batch shall be measured separately and accurately. Shovel methods of measuring will not be permitted. The unit of volumetric measurement shall be 1 cubic yard.
- H. When proportioned by weight, the amount of each aggregate required for a single batch shall be weighed in a separate container. The equipment for weighing shall be of an approved type, and of such accuracy that there shall not be an error of more than one (1) percent in any one (1) batch.

2.09 BATCHING ADMIXTURES

- A. The batching of admixtures to achieve and maintain production of the mix design of concrete shall be in accordance with ACI 212.3R.

- B. If the air content is found to be less or greater than the specified amount, the CONTRACTOR shall immediately discontinue Work and correct the air content.
- C. Decreasing the air content may be accomplished by blending air-entraining Portland cement with Portland cement, manufactured at the same mill, in a ratio which will reduce the air content to a value within the specified limits, this blending shall be reviewed by the ENGINEER.
- D. Increasing the air content may be accomplished by adding to each batch a sufficient amount of air-entraining admixture to bring the air content up to the designed amount.
- E. Pozzolan and ground granulated blast furnace slag shall be proportioned based on the mix design approved by the ENGINEER to produce watertight concrete.
- F. Water Reducer can be used to reduce the water requirement of concrete to obtain consistency of slump, modify workability, increase strength or any other approved use.

2.10 TEMPERATURE LIMITS OF MIXTURE

- A. The temperature of the cement, at the time of delivery to the mixer, shall not exceed 165 degrees F. The cement shall be stored at the CONTRACTOR's expense until cooled to that temperature.
- B. The temperature limits of aggregates and water entering the mixer shall be as follows:

Component	Minimum	Maximum
Water	75°F (24°C)	140°F (60°C)
Fine Aggregate	65°F (18°C)	140°F (60°C)
Coarse Aggregate	65°F (18°C)	110°F (43°C)
Concrete (resulting)	60°F (15°C)	90°F (32°C)

2.11 MIXERS AND MIXING

- A. Concrete mixing operations shall be in accordance with ACI 304 and MDOT, Section 701, and shall be subject to random inspection during the progress of the Work at no charge to the CONTRACTOR.
- B. Central Mixed Concrete
 - 1. Mixers shall be capable of quickly and completely discharging without segregation or loss.
 - 2. Efficiency of the mixers shall be maintained at all times through repair or replacement of worn parts when necessary.
 - 3. Mixers shall be provided with readily adjustable, automatic devices which will measure the cement and water within one (1) percent and admixtures within three (3) percent.
 - 4. The drum of the mixer shall be kept free from hardened concrete and shall be completely emptied before recharging.
 - 5. Retempering or remixing concrete that has partially set will not be permitted.
 - 6. Mixer shall be cleaned thoroughly each time when out of operation for more than 1/2 hour.
 - 7. Recommended mixing time is a minimum time of 1 cubic yard, with an additional 15 seconds for each additional 1 cubic yard.
 - 8. Concrete shall be delivered to the site in clean, tight truck bodies designed for this purpose and painted with paraffin if necessary for easy dumping.
 - 9. The concrete at the point of delivery shall have the proper consistency and shall be free from segregation.
 - 10. Mechanical agitators in the truck bodies will be required if the period of time from the mixing plant to the point of dumping exceeds 30 minutes.

11. No concrete shall be dumped if the elapsed time from the mixing plant to the point of dumping exceeds 60 minutes.

C. Transit Mixed Concrete

1. Transit-mix concrete shall be in accordance with ASTM C94/C94M. If transit-mix concrete is used, it shall meet all the foregoing requirements specified for central mixed concrete and, in addition, the following:
 - a. The batched materials shall be properly proportioned and in a dry state. The proper amount of water shall be added to the mixer on the trucks, and no additional water shall be added. No admixtures or accelerators shall be added except as herein noted, without the approval of the ENGINEER.
 - b. Trucks shall not be loaded beyond their rated capacity and shall have mixing drums cleaned of all set-up materials at frequent intervals while in use. Trucks with leaking water valves shall not be used.
 - c. Recommended mixing speed should be no less than 12 revolutions per minute, with a minimum of 90 revolutions or until the mix is satisfactory.
 - d. Mixing shall be continuous after water is added to the mix in the drum, but no concrete shall be placed in the forms more than 90 minutes after water is added to the mix.
 - e. Truck-mixed concrete shall be delivered to the site of the Work and discharged from the mixer within the maximum period of 1-1/2 hours from the first introduction of water to the mix. Any concrete which remains in the mixer after this period and any concrete which appears too stiff to be properly workable or which appears to have begun to take its initial set shall be rejected and removed from the site of the Work.
- D. OWNER may employ an independent testing laboratory to provide a qualified inspector to be present at the plant where batching of concrete occurs. The inspector shall verify the compliance of the mix with the Specifications and shall sign a form indicating the quantity of concrete and the concrete mixture of each load.

2.12 CHANGE OF MIXTURE

- A. If CONTRACTOR requests a change or substitution of approved batch proportioning, mixing, or delivery operations additional testing and/or inspection shall be at CONTRACTOR's expense.

2.13 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers of abrasive wear resistant floor finish include: Master Builders Company "Mastercon Aggregate," Sonneborn Building Products "Harcot," or equal.

EXECUTION

3.01 VERIFICATION OF FORMWORK, REINFORCING, AND SUBGRADES

- A. The CONTRACTOR shall inspect formwork, reinforcement and subgrades to confirm compliance with the related Work specified elsewhere.

3.02 EMBEDDED ITEMS

- A. The CONTRACTOR shall verify the location, from certified vendor or applicable engineering drawings, of all embedded items including anchor bolts, wall sleeves, wall casting, railing post sleeves and miscellaneous pipes and conduits and shall install the items accurately at the locations determined.

3.03 BUILDING IN OTHER WORK

- A. CONTRACTOR shall make all necessary provisions in concrete Work for other Work installed by this or other contractors, and build in all required steel beams, frames, curbs, expansion joints, inserts, hangers, pipes, floor drains, pipe trench covers and frames, anchors, sleeves,

floor ducts, fiber and steel conduit, pipe hanger sockets, and all other Work furnished by either this or other contractors.

- B. CONTRACTOR shall build in all anchors, ties, etc., specified under brick and other Work, in faces of concrete Work which are to be faced with masonry, and any other Work shown or noted to be built into concrete. In addition, CONTRACTOR shall provide all openings and holes in concrete Work as shown or as needed to accommodate other Work.

3.04 SPECIAL CONCRETE

- A. CONTRACTOR shall verify the use and/or locations of watertight concrete and/or high-early strength concrete.

3.05 PREPARATION

- A. CONTRACTOR shall notify the ENGINEER two (2) working days prior to placement of concrete.
- B. Before depositing new concrete on or against existing concrete the existing concrete shall be roughened, thoroughly cleaned of foreign matter and laitance and saturated with water. The cleaned and saturated surface of the hardened concrete, including vertical and inclined surfaces, shall be coated with a bonding agent or slushed with a minimum 2 inch thick coating of concrete without coarse aggregate grout against which the new concrete shall be placed before the mixture has attained its initial set.
- C. Before concrete is placed in any unit, the forms and the placing and fixing of all steel and incidental items shall be complete, and the forms, steel and adjacent concrete shall be thoroughly cleaned and wetted down.
- D. Where indicated on the Plans, the CONTRACTOR shall bridge the subgrade with at least 2000 psi, 3 inch thick lean concrete before placing the reinforcement. This shall be at no extra cost.
- E. No concrete shall be deposited in any unit until the area has been completely dewatered in accordance with Section 31 2319, Dewatering, and not until after the CONTRACTOR has made satisfactory provisions to eliminate all possibility of water entering or flowing through the concrete while it is being poured or is taking its set. No concrete shall be placed under or on water.

3.06 CONVEYING

- A. Concrete handling equipment shall be of such a nature and shall be so located that the concrete after leaving the mixer will reach its destination with a minimum lapse of time, with no segregation, and loss of slump. The use of drop chutes, except at or in the forms, is prohibited.
- B. The interior hopper slope of concrete buckets shall be not less than 60 degrees from the horizontal, the minimum dimension of the clear gate opening shall be at least five (5) times the nominal maximum size aggregate and the area of the gate opening shall be not less than 2 square feet.
 - 1. Maximum dimension shall not be greater than twice the minimum dimension.
 - 2. Bucket gates shall be essentially grout tight when closed and may be manually, pneumatically or hydraulically operated except for buckets larger than 2 cubic yards shall not be manually operated.
 - 3. Design of the bucket shall provide means for positive regulation of the amount and rate of deposit of concrete in each dumping position.
- C. Belt conveyors shall be designed and operated to assure a uniform flow of concrete from mixer to final place of deposit without segregation of ingredients or loss of mortar and shall be provided with positive means for preventing segregation of the concrete at the transfer points and the point of placing.
- D. Concrete may be conveyed by positive displacement pump when authorized by the ENGINEER. The pumping equipment shall be piston or squeeze pressure type. The pipeline

shall be rigid steel pipe or heavy duty flexible rubber hose. The inside diameter of the pipe shall be at least three (3) times the nominal maximum size coarse aggregate in the concrete mixture to be pumped. The maximum size coarse aggregate shall not be reduced to accommodate the pumps.

- E. The distance to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation, equipment shall be thoroughly cleaned, and flushing water shall be wasted outside of the forms.

3.07 PLACING

- A. All concrete shall be so deposited as to maintain the top surface level, unless otherwise shown on the Plans, and also as to avoid any appreciable flow in the mass.
- B. Where placing operations involve dropping the concrete more than 3 feet in the forms, it shall be deposited through sheet metal or other approved spouts or pipes. These spouts or pipes shall have suitable receiving hoppers at the upper ends, and the lower ends shall be kept within 6 inch of the newly placed concrete so as to prevent segregation and avoid spattering the reinforcing steel with mortar. Under no circumstances shall concrete that has partly hardened be deposited in the Work.
- C. Each layer of concrete shall be plastic when covered with the following layer and the forms shall be filled at a rate of vertical rise of not less than 2 feet per hour. Concrete vibrators shall penetrate the initial layer when placing the following layer. Vertical construction joints shall be provided as necessary to comply with these requirements.
- D. Concrete shall be placed and compacted in wall or column forms before any reinforcing steel is placed in the system to be supported by such walls or columns. The portion of any wall or column placed monolithically with a floor or roof slab shall not exceed 6 feet of vertical height. Concrete in walls or columns shall set at least two (2) hours before concrete is placed in the structural systems to be supported by such walls or columns.
- E. Concrete shall be set when top finished. All laitance, debris, and surplus water shall be removed from concrete surfaces at tops of forms by screeding, scraping, or other effective means. Wherever the top of a wall will be exposed to weathering, the forms shall be overfilled and after the concrete has settled, the excess shall be screeded off.
- F. No concrete shall be placed in contact with frozen ground. Time between charging and placement of concrete shall not exceed 1-1/2 hours.
- G. Concrete shall be compacted by continuous vibrating, tamping, spading or slicing. Care shall be taken to eliminate all voids and to provide full bond on reinforcing steel and embedded fixtures. Mechanical vibration shall be employed. Concrete shall be compacted and thoroughly worked with suitable tools combined with the use of vibrators applied internally and providing a frequency not less than 7,000 revolutions per minute. All such vibrating, including the methods and equipment, shall be subject to the review of the ENGINEER.
- H. The time of vibrating in any area shall only be sufficient to get efficient compaction, but shall in no case be carried to the point where there is segregation of the fine and coarse materials of the mix. There shall be an absolute minimum of direct vibration of the steel or forms during the process of vibrating. Vibrators shall be inserted and withdrawn from the concrete at numerous locations, from 18 - 30 inches apart, but shall not be used to transport concrete within the forms. The CONTRACTOR shall have a stand by vibrator on the job site during all concrete pouring operations.

3.08 FINISHING UNFORMED SURFACES

- A. The unformed surfaces of all concrete shall be screeded and given an initial float finish followed by steel troweling.
- B. Screeding shall provide a concrete surface conforming to the proper elevation and contour with all aggregates completely embedded in mortar. All screeded surfaces shall be free of surface

irregularities with a height or depth in excess of 1/4 inch as measured from a 10 foot straightedge.

- C. Screeded surfaces shall be given an initial float finish as soon as the concrete has stiffened sufficiently for proper working. Any piece of coarse aggregate which is disturbed by the float or which causes a surface irregularity shall be removed and replaced with mortar. Initial floating shall produce a surface of uniform texture and appearance with no unnecessary working of the surface. Floating shall be performed with hand floats or suitable mechanical compactor floats.
- D. Troweling shall be performed after the second floating when the surface has hardened sufficiently to prevent an excess of fines being drawn to the surface. Troweling shall produce a dense, smooth, uniform surface free from blemishes and trowel marks. The top surface of driveways, and sidewalks shall be given a broomed finish after troweling.
- E. Unless specified to be beveled, exposed edges of floated or troweled surfaces shall be edged with a tool having 1/4 inch corner radius.

3.09 FINISHING FORMED SURFACES

- A. After removal of forms, the finishing of all concrete surfaces shall be started as soon as its condition will permit.
- B. Grind all seams, fins or projections flush with the concrete surface.
- C. Fill and point all honeycomb, tie holes and voids.
- D. Dampen the surface with water and apply a cement and silica sand slurry to the entire surface to fill small defects and air voids.
- E. Remove excess slurry from concrete. Surfaces to be finished shall receive an application of dry Portland cement which shall be rubbed into the slightly dampened surface with a suitable cloth.
- F. After pointing and removal of projections as specified herein, exposed surfaces of concrete, including walls, columns, beams, pilasters and the undersides of slabs, shall be given a rubbed surface finish.

3.10 FLOORS

- A. Concrete floor finish shall be applied to all building floors not receiving further floor finish. At these locations, the concrete shall be brought to the proper elevation and screeded. The surface shall be given two (2) steel trowelings when the concrete has set sufficiently to finish smoothly. Floors shall be sloped uniformly toward floor drains at a slope of 1/8 inch per foot.
- B. The concrete finish on steps and loading platforms shall be wood troweled to true and uniform surface and then steel troweled. The surface shall then be slightly roughened with a broom or by dragging burlap across the surface.
- C. Concrete floors shall be finished with an abrasive resistant floor finish in the areas noted on the finish schedule on the Plans. Premixed floor hardener shall be applied to the surface of the freshly floated concrete floor, in strict accordance with the manufacturer's directions. Color to be selected by the OWNER.

3.11 EXPANSION JOINTS

- A. Comply with the requirements of Section 03 1500, Concrete Accessories. Expansion joints shall have removable polystyrene joint caps secured to the top thereof and shall be accurately positioned and secured against displacement to clean, smooth concrete surfaces.
- B. Joint caps shall be of the size required to install filler strips at the desired level below the finished concrete surface and to form the groove for the joint sealant to the size shown on the Plans.
- C. Joint caps shall not be removed until after the concrete curing period.

3.12 CONCRETE CURING

- A. All concrete shall be cured for a period not less than seven (7) consecutive days. The CONTRACTOR shall have adequate equipment and curing material on the job site before concrete placement begins, and it shall be adequate to prevent checking and cracking and loss of moisture from all the surfaces of the concrete. The concrete shall be protected from rain, flowing water, wind and the direct rays of the sun. Openings in concrete shall be sealed to prevent drying of the concrete during the curing period.
- B. Curing compounds shall not be used on surfaces to which additional concrete or other material are to be bonded.
- C. Curing compounds when used shall be applied in strict accordance with the manufacturer's recommendations.
- D. Concrete cured with water shall be kept wet by covering with ponded water or fog spraying to keep all surfaces continuously wet.
- E. Horizontal construction joints and finished surfaces cured with sand shall be covered a minimum thickness of 1 inch, uniformly, and kept saturated during the curing period.
- F. Burlap used for curing shall be treated to resist rot and fire and free of sizing or any substances that are injurious to Portland cement or cause discoloration. Strips shall be lapped by half widths. The burlap shall be saturated with water after placement and during the curing period.
- G. Straw or hay shall be in a layer no less than 6 inch thick and held in place by screens, wire or other means to prevent dispersion by the wind. Care shall be observed to avoid discoloration of the concrete surface from the vegetable fibers and for the flammability of the material. The straw shall be saturated with water after placement and during the curing period.

3.13 ENVIRONMENTAL CONDITIONS

- A. The CONTRACTOR shall provide cold or hot weather protection in accordance with ACI and as specified herein. There shall be no additional cost for hot or cold weather protection of the concrete.
- B. Cold Weather Protection
 - 1. When placing concrete in cold weather, the CONTRACTOR shall plan and prosecute his Work in a manner which shall assure results free from damage through freezing, contraction, and loss of concrete strength.
 - 2. No concrete shall be poured when the surrounding temperature is below 40 degrees F, unless the aggregates and water are properly heated. Concrete which has been poured at higher temperatures but has not attained a strength equal to 75% of the required strength of the class of concrete involved, shall be housed and protected in accordance with the provisions of this Section whenever the surrounding temperature falls below 40 degrees F.
 - 3. Application of heat to the materials shall be made in a manner which will keep these materials clean and free from injurious substances.
 - 4. Aggregates may be heated only by steam coils or steam jets, except in the case of small quantities of concrete when other methods may be approved by the ENGINEER. A sufficient quantity of properly heated aggregates shall be on hand prior to starting the pouring of any unit.
 - 5. Concrete shall be properly housed with canvas, burlap, or other windproof material in such a manner that any necessary removal of the forms or finishing of the concrete can proceed without undue damage to the concrete from the elements. Heating of the housing shall be done in a manner which will maintain a temperature between 50 - 70 degrees F, at all times for at least five (5) days after the pour is complete and 12 hours before the pour begins. All supplemental heating units shall have exhaust vented to the exterior and shall not cause deleterious reactions or deposits to occur to concrete.

C. Hot Weather Protection

1. Concrete deposited in hot weather shall not have a placing temperature that will cause difficulty from loss of slump, flash set, or cold joints. Concrete temperature shall be less than 90 degrees F.
2. In hot weather, suitable precautions shall be taken to avoid drying of the concrete prior to finishing operations. Use of windbreaks, sunshades, fog sprays, or other devices shall be provided.

3.14 ADDITION OF WATER

- A. To increase workability, adding water to the mix shall be limited to a one time addition of 1 gallon per cubic yard and mixed with a minimum of 30 revolutions at a rate of 12 to 15 revolutions per minute. Addition of water shall be within the slump requirements.

3.15 CONCRETE DELIVERY TICKET

- A. A ticket system shall be used for recording the transportation of concrete from the batching plant to point of delivery. This ticket shall be issued to the truck operator at the point of loading and given to the ENGINEER upon delivery. The ticket shall as a minimum indicate the time of mixer charging, quantity of concrete, type of mixture including amount of cement, and the plant where the concrete was batched.

3.16 CONCRETE DELIVERY REJECTION

- A. Concrete not permitted for inclusion in the Work by the ENGINEER shall be removed from the site. Rejection of concrete will be determined through concrete testing and elapsed time from mixer charging to delivery.

3.17 CONCRETE TESTING AT PLACEMENT

- A. Tests shall be made of fresh concrete for each 50 cubic yards, or whenever consistency appears to vary. The sampling and testing of slump, air content and strength will be performed at no cost to the CONTRACTOR.
- B. Composite samples shall be secured in accordance with the Method of Sampling Fresh Concrete, ASTM C172/C172M.
- C. Slump Test
1. A tolerance of up to 1 inch above the indicated maximum slump shall be allowed for individual batches provided the average for all batches or the most recent ten (10) batches tested, whichever is fewer, does not exceed the maximum limit.
- D. Air Content
1. Air content of normal weight concrete will be determined in accordance with ASTM C231, Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method.
- E. Compressive Strength
1. A set of cylinders for compressive strength tests will consist of four cylinders per each set. The temperature of concrete sample will be determined for each strength test.
 2. Molding and curing specimens from each set shall be in accordance with ASTM C31/C31M. Any deviations from the requirements of this Standard shall be recorded in the test report.
 3. Testing specimens will be in accordance with ASTM C39/C39M. One (1) specimen shall be tested at seven (7) days for information and two (2) shall be tested at 28 days for acceptance.
 - a. Acceptance test results shall be the average of the strengths of the two (2) specimens tested at 28 days. If one (1) specimen in a test manifests evidence of improper sampling, molding or testing, it shall be discarded and the strength of the remaining cylinder shall be considered the test result.

4. The strength level of the concrete will be considered satisfactory so long as the averages of all 28 day strength test results equal or exceed the specified 28-day strength and no individual strength test result falls below the specified 28-day strength by more than 500 psi.
5. If the strength test is not acceptable, further testing shall be performed to qualify the concrete.

3.18 TESTING OF CONCRETE IN PLACE

- A. Additional testing of materials or concrete occasioned by their failure by test or inspection to meet specification requirements shall be at the expense of the CONTRACTOR.
- B. Testing by impact hammer, sonoscope, or other nondestructive device may be permitted by the ENGINEER to determine relative strengths at various locations in the structure as an aid in evaluating concrete strength in place or for selecting areas to be cored. Such tests, unless properly calibrated and correlated with other test data, shall not be used as a basis for acceptance or rejection.
- C. When required by the ENGINEER, cores at least 2 inch in diameter shall be obtained and tested in accordance with ASTM C42.
 1. If the concrete in the structure will be dry under service conditions, the cores shall be air dried (temperature 60° to 80°Fahrenheit (15°-25°Celsius), relative humidity less than 60%) for 7 days before test and shall be tested dry.
 2. If the concrete in the structure will be more than superficially wet under service conditions, the cores shall be tested after moisture conditioning in accordance with ASTM C42.
- D. At least three (3) representative cores shall be taken from each member or area of concrete in place that is considered potentially deficient. The location of cores shall be determined by the ENGINEER so as to least impair the strength of the structure. If, before testing, one or more of the cores shows evidence of having been damaged subsequent to or during removal from the structure, it shall be replaced.
- E. Concrete in the area represented by a core test will be considered adequate if the average strength of the cores is equal to at least 85% of and if no single core is less than 75% of the specified 28-day strength.
- F. Core holes shall be filled by low slump concrete or mortar.

3.19 RETENTION TESTING

- A. Tanks or structures designed to hold or retain water, wastewater or other liquids shall be retention tested.
- B. To test a tank or structure for leakage, the CONTRACTOR shall clean, disinfect (if required) and fill the tank or structure with water to its maximum level.
- C. The water shall be allowed to remain 24 hours with all associated valves and appurtenances tightly closed.
- D. During this 24-hour period, the water level as measured by a hook gage shall show no measurable loss.
- E. If this test fails, the CONTRACTOR shall dewater the tank or structure, make such repairs as necessary to achieve a watertight tank or structure, clean, disinfect (if required), and retest.
- F. Tests and repairs shall be repeated until the tank or structure is accepted by the ENGINEER.

3.20 DEFECTIVE CONCRETE

- A. If, in the opinion of the ENGINEER, the defects in the concrete are of such a nature as to warrant condemnation, that portion of the pour may be ordered replaced in its entirety and the CONTRACTOR shall promptly replace same without additional compensation.

- B. Defective concrete shall be repaired by cutting out the defective area and placing new concrete which shall be formed with keys, dovetails or anchors to attach it securely in place.

END OF SECTION

SECTION 03 30 00 CAST-IN-PLACE CONCRETE

GENERAL

1.01 SCOPE

- A. This Section includes all monolithic cast-in-place concrete work complete with materials, mixes, installation and testing.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 2200: Unit Prices
- B. Section 03 1100: Concrete Forming
- C. Section 03 1500: Concrete Accessories
- D. Section 03 2000 Concrete Reinforcing:
- E. Section 04 0511: Mortaring and Grouting
- F. Section 05 1200: Structural Steel Framing
- G. Section 05 5000: Metal Fabrications
- H. Section 07 1000: Dampproofing and Waterproofing:
- I. Section 31 2319: Dewatering

1.03 REFERENCE STANDARDS

- A. ACI 312.3R: Report on Chemical Admixtures for Concrete
- B. ACI 301: Specifications for Concrete Construction
- C. ACI 304R: Guide for Measuring, Mixing, Transporting, and Placing Concrete
- D. ACI 305R: Guide to Hot Weather Concreting
- E. ACI 306R: Guide to Cold Weather Concreting
- F. ACI 318: Building Code Requirements for Structural Concrete (ACI 318-19) Commentary on Building Code Requirements for Structural Concrete
- G. ASTM C42: Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
- H. ASTM C31/C31M: Standard Practice for Making and Curing Concrete Test Specimens in the Field
- I. ASTM C39/C39M: Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
- J. ASTM C94/C94M: Standard Specification for Ready-Mixed Concrete
- K. ASTM C143/C143M: Standard Test Method for Slump of Hydraulic-Cement Concrete
- L. ASTM C150/C150M: Standard Specification for Portland Cement
- M. ASTM C172/C172M: Standard Practice for Sampling Freshly Mixed Concrete
- N. ASTM C183: Standard Practice for Sampling and the Amount of Testing of Hydraulic Cement
- O. ASTM C231: Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method.
- P. ASTM C260/C260M: Standard Specification for Air-Entraining Admixtures for Concrete

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SECTION 33 30 00
SANITARY UTILITY SEWERAGE PIPING

GENERAL

1.01 SCOPE

- A. This Section includes sanitary sewer Work indicated on the Plans complete with pipe, joints, structures, pipe bedding, installation, television inspection and testing.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 2200: Unit Prices
- B. Section 04 0511: Mortaring and Grouting
- C. Section 31 2316: Structural Excavation and Backfill:
- D. Section 31 2319: Dewatering
- E. Section 31 2333: Trenching and Backfilling
- F. Section 31 7000: Tunneling and Mining

1.03 REQUIREMENTS OF REGULATORY AGENCIES

- A. Testing shall conform to the applicable requirements of State and local authorities having jurisdiction, and shall include such tests as: deflection, air, exfiltration and infiltration.

1.04 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. ANSI - American National Standard Institute
 - 2. ASTM A48/A48M: Standard Specification for Gray Iron Castings
 - 3. ASTM A53/A53M: Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
 - 4. ASTM A153/A153M: Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - 5. ASTM A185: Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
 - 6. ASTM A615/A615M: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - 7. ASTM A1064/A1064M: Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
 - 8. ASTM B633: Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
 - 9. ASTM B766: Standard Specification for Electrodeposited Coatings of Cadmium
 - 10. ASTM C12: Standard Practice for Installing Vitrified Clay Pipe Lines
 - 11. ASTM C14: Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
 - 12. ASTM C55: Standard Specification for Concrete Building Brick
 - 13. ASTM C76: Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
 - 14. ASTM C94/C94M: Standard Specification for Ready-Mixed Concrete

where applicable.

- B. Seed shall be delivered to the site in durable bags, tagged or labeled to show date of tests, warranty of purity and germination analysis, name, lot number and net weight of contents.
- C. Commercial fertilizers shall be delivered to the site of the Work in the original unopened bags. Bags shall not exceed 100 lbs net weight each and shall be clearly marked with guaranteed analysis in a conspicuous location on each bag.
- D. Material shall be stored at the Project site, under shelter, off the ground and shall be protected from damage by moisture, temperature, exposure to elements, vandalism or other action which might otherwise impair their use.
- E. All materials proposed for use in the Work shall be handled in a manner that will protect the material and the personnel involved in the Work. Handle seed in a manner which will protect the mixture from contamination or deterioration.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Seeding is limited to the periods between April 20 and June 1, and August 10 to October 10 and after for as long as weather permits preparation of the seed bed without irrigation and the ground is not frozen. With the use of irrigation and/or mulch, seeding can be done from April 20 thru October 1 inclusively.
- B. Comply with the limitations placed on the use of certain soil protection materials because of prevailing temperatures as described in this Section.
- C. Comply with the limitation placed on seeding applications because of wind velocity as described in this Section.

1.09 PROTECTION

- A. Provide suitably approved warning signs and barricades for protection of seeded areas from pedestrian or vehicular traffic. Protect all newly seeded areas during the progress of the Work and until completion of the turf establishment period.
- B. Protect all adjacent construction from topsoil spills and perform such cleanup of affected surfaces before it becomes compacted by traffic.

1.10 FINAL ACCEPTANCE

- A. The CONTRACTOR shall establish a dense cover of seeded grass on all disturbed areas. These areas shall be maintained until final acceptance of the Work by the ENGINEER. The ENGINEER will inspect the turf to insure that the grass seed is well established, weed free, in a growing and vigorous condition. Areas that do not meet the approval of the ENGINEER shall be re-seeded at the CONTRACTOR's expense.

PRODUCTS

2.01 SEED

- A. Seed and seeding mixtures shall be certified, mature, clean, dry, new crop seed products suitable for the specified applications and having the percentages of purity, germination and proportions, by weight, indicated in Table 1.
- B. Table 1 - Seeding Mixtures

Kind	Seeds		Mixture Proportions (%)			
	Purity	Germination	TDS	TUF	TGM	THM
Kentucky Blue Grass	98%	80%	5	10	10	30
Perennial Rye Grass	96%	85%	25	20	20	20

Hard Fescue	97%	85%	25	20	30	
Creeping Red Fescue	97%	85%	45	40	40	50
Fults Salt Grass	98%	85%*		10		

C. Table 2 - Soil Types and Location of Seeding

Symbol for Turf			
Seed Mixture	Soil Type	General Location	Rate of Seeding lbs/ac (kg/ha)
TDS	Dry Sandy to Sand Loam	Rural or Urban	250 lbs/acre
TUF	All Types	Urban Freeway, Blvds, City Streets	250 lbs/acre
TGM	Medium to Heavy	All	250 lbs/acre
THM	Loamy to Heavy	Home and Business Turf	250 lbs/acre

D. The specific mixture to be used shall be for the type of soil on the Project and the location of the seeding unless otherwise indicated on the Plans or as designated by the ENGINEER.

E. Hydroseeding shall consist of a blend of seed, fertilizer and hydromulch.

2.02 MULCHING MATERIAL

A. Straw

1. Small grain straw or grass or marsh hay acceptable to the ENGINEER.

B. Wood Excelsior

1. Green wood fibers, baled or blanket of type and manufacture acceptable to the ENGINEER.
2. Wood excelsior shall be made of green timber fiber baled so that the bales weigh 80 to 90 pounds at the time of manufacture.
3. Wood excelsior blankets shall be made of a uniform web of interlocking fibers with a backing of fabric netting on one (1) side only. The fabric net shall have a mesh size not exceeding 1-1/2 x 3 inch and shall be a woven of either cotton cord, twisted paper cord or a synthetic, biodegradable fiber.
4. Blankets shall be produced in the form of a tightly compressed roll 36 ±1 inch wide and approximately 120 feet long. Blanket shall have a fiber net on the outside of the fiber mat.
5. Blanket roll weight, when manufactured, shall average 85 lbs ± 10%.
6. Each roll shall have separator sheets of 40 pound Kraft paper placed at the beginning and at the end of each roll to facilitate unrolling and handling at the job site. The Kraft paper sheet at the end of each roll shall also form a wrapper for the roll.

C. Netting

1. Twisted Kraft paper or synthetic fiber, biodegradable woven mesh net material suitable for the application and acceptable to the ENGINEER.
2. The net shall consist of a biodegradable mesh with openings not to exceed 1-1/2 x 3 inch.
3. The net shall be furnished in widths of not less than 35 inches.

D. Proprietary Mulch Material

1. Biodegradable natural and/or synthetic materials suitably fabricated and acceptable to the ENGINEER.

2.03 MULCH ANCHORING MATERIAL

- A. Emulsified Asphalt
 - 1. ASTM D977, Rapid Setting (R.S. 1 or 2), Medium Setting (M.S. 2 or 2h) or Slow Setting (S.S. 1).
- B. Mulch Anchoring Tool
 - 1. Suitable unit having a series of flat, notched discs for punching and anchoring mulch in soil, or a regular farm disc weighted and set nearly straight as a substitute.
- C. Latex Base Adhesive
 - 1. Latex base adhesive mixed with water at a 25 to 1 ratio of water to adhesive with 25 lbs of recycled newsprint as a tracer.
- D. Recycled Newsprint
 - 1. Mix 7 lbs of newsprint with 7 gallons of water.
- E. Guar Gum
 - 1. Mix 1 lb of dry adhesive with 26.5 gallons of water with 5 lbs of recycled newsprint as a tracer.

2.04 FERTILIZER

- A. Fertilizer shall be a standard commercial grade fertilizer, conforming to state regulations, of the type recommended for grasses. The fertilizer shall contain slow release nitrogen amounting to 75% of the nitrogen available.
- B. Fertilizer shall be uniform in composition, free flowing and suitable for application with method selected.
- C. Fertilizer for hydraulic seeding shall be soluble or ground to a fineness that will permit complete suspension of all insoluble particles in the slurry.

2.05 AGRICULTURAL LIMING MATERIALS

- A. Burnt lime (quick lime), hydrated lime, limestone (calcite and dolomite), marble shells and by-products shall conform to the requirements of ASTM C602 .

2.06 WATER

- A. Free of matter harmful to plant growth.

2.07 STAPLES

- A. Wire staples for holding mulching materials in place shall be not less than 6 inches long No. 11 (U.S. Steel Gage) steel wire or longer.

2.08 TOPSOIL

- A. Topsoil shall be fertile, friable, sandy clay loam without admixture of subsoil. Topsoil is to be free of glass, stones greater than 1 inch in any dimension, weeds, undesirable grasses and other extraneous materials. Topsoil shall have the following range of values:

Quality Parameter	Range of Value
Soil pH	5.0 to 7.5
Soluble Salts	500 ppm max
organic content	5 to 30 %
silt content	35% to 50%
clay content	5% to 10%
USDA Soil Classification	Loam or Sandy Loam

deleterious mat'l* 5% max
 *rocks, gravel, stones, sticks, roots, sod, etc

- B. Compost may be mixed with topsoil to obtain the desired content. Topsoil is to be final screened thru a 5/8 inch maximum mesh screen prior to delivery to the Project site.
- C. ENGINEER shall review source and final screen results prior to release of topsoil.
- D. CONTRACTOR shall submit a certified analysis of the topsoil from each source to the ENGINEER.
- E. Topsoil shall be placed in 3 inch minimum thickness throughout, or as specified in the Plans or Specifications.
- F. The CONTRACTOR shall obtain his own topsoil borrow pit source and shall obtain all necessary permits and agreements for the use of such borrow pits at his own expense.

2.09 IMPROVED TOPSOIL

- A. Improved topsoil shall consist of a mixture of 2/3 topsoil and 1/3 compost. The improved topsoil mixture shall have a dark brown or black color, be capable of supporting plant growth without ongoing addition of fertilizers or other soil amendments and shall not have objectionable odor.

2.10 COMPOST

- A. Compost shall be mature/stabilized, humus-like material derived from the aerobic decomposition of yard waste (i.e., grass clippings and leaves) or other materials as designated compostable and shall be in compliance with all federal and state laws. The mixture shall be free of objectionable odors, glass, plastic, metal, and other contaminants; as well as viable weed seeds and other plant parts capable of reproducing. The mixture shall be such that no visible water or dust is produced when handling it.
- B. The manufacturer of the compost shall maintain annually on file with the Michigan Department of Agriculture, Pesticide and Plant Pest Management Division, test data and a statement to show that the following criteria are being met by the compost provided for the project.
- C. The composition of the compost shall be within the following range of values:

Quality Parameter	Range of Value
Soil pH	6 to 7.5
Soluble Salts	2 to 5 mmho/cm
Carbon/Nitrogen Ratio	13 to 20 parts Carbon to 1 part Nitrogen
Inerts	< 1%
Organic matter	35 to 55 %
Nitrogen	1 to 2 %
Phosphorus	0.2 to 0.8 %
Potassium	0.5 to 1.5 %
Unit Weight	535 to 775 Kg/m3
Moisture Content	40 to 50 %
Particle Size	< 20 mm maximum
Water Holding Capacity	> 100%
Heavy Metals	None

1. Maturity/Stabilization – An acceptable test that can demonstrate Maturity/Stability.
2. Temperature – The compost material must have undergone the procedure to significantly reduce the pathogen level as referenced in EPA 40 CFR, Part 257 Regulations, Federal Register Vol. 58, No. 32, dated 2/19/93; Rules and Regulations. The temperature must be maintained at 40° C for 5 days with a temperature exceeding 55° C for at least 4 hours.

3. Pathogens and Trace Elements – Shall meet the requirements of EPA 40 CFR; Part 503 Regulations, Federal Register Vol. 58, No. 32, dated 2/19/93; Rules and Regulations.
4. To comply with the annual filing requirements, the supplier of the compost shall certify that the compost meets EPA 40 CFR, Part 257 and 503 Regulations, Federal Register Vol. 58, No. 32; dated 2/19/93; Rules and Regulations.
5. A data sheet shall accompany the certification.
 - a. The data sheet shall show the following:
 - b. Standard compost total nutrient test results, including N, P, K, Ca, Mg, Mn, Cu, Fe total carbon, pH, as provided by an acceptable testing laboratory
 - c. Organic content
6. Inert contamination
 - a. Soluble salts
 - b. Carbon/Nitrogen ratio
 - c. Proof of maturity/stability acceptable to the Michigan Department of Agriculture

EXECUTION

3.01 PREPARATION OF SUBGRADE

- A. Complete all fine grading within the areas to be covered with topsoil necessary to bring the surface of the proposed subgrade to the elevations indicated on the Plans and parallel to the proposed finished grade.
- B. The surface of the subgrade immediately prior to being covered with topsoil shall be raked or otherwise loosened to a minimum depth of 2 inch to facilitate making a bond between the subsoil and the topsoil.

3.02 PREPARATION OF SOIL

- A. After the areas to be seeded have been brought to the required grade and properly trimmed and cleaned up, the existing soil shall be brought to a friable condition by harrowing or otherwise loosening and mixing to a depth of at least 4 inches.
- B. All lumps and clods shall be thoroughly broken. When the area to be seeded has been prepared and covered with a layer of topsoil as specified under Part 3 of this section, this operation will not be required.

3.03 PREPARATION OF MULCH MATERIAL

- A. When seed is to be sown through mulch which has been in place for a period of more than two (2) weeks or which is being held in place by a surface-applied coating of asphalt emulsion or other adhesive, the mulched area shall be prepared for seeding by discing, a spike-toothed harrow, or by other means acceptable to the ENGINEER.

3.04 PLACING AND SPREADING TOPSOIL

- A. Topsoil shall be placed and spread over the area designated on the Plans, or as determined by the ENGINEER, to a depth of 4 inches or to such depth as specified on the plans.
- B. In all cases, topsoil shall be placed to a depth sufficiently greater than that shown on the Plans or specified so that, after natural settlement or rolling, the completed Work will conform to the lines, grades and elevations shown on the Plans.
- C. Spreading of topsoil shall be completed in such a manner that seeding as specified can proceed without additional moving of topsoil. Topsoil furnished and placed shall be considered incidental to seeding unless otherwise specified in the Proposal.
- D. After topsoil is spread, all large earth lumps, rocks, roots, debris, or other foreign matter shall be raked and removed from the topsoiled area and legally disposed of by the CONTRACTOR.

3.05 FERTILIZING

- A. Chemical fertilizer shall be applied on the prepared soil surfaces at a minimum rate of 660 lbs per acre of 12-12-12 fertilizer, or such other rate of another fertilizer mixture that yield 240 lbs per acre of chemical nutrient.
- B. Dry fertilizers shall be thoroughly disced, harrowed or raked into the soil to a minimum depth of not less than 1 inch.
- C. Where hydraulic seeders are used for sowing seed, one half the recommended rate of fertilizer may be spread in combination with such sowing with the balance incorporated into the soil prior to seeding. In all other cases, fertilizer shall be incorporated into the soil before any seeding is started.

3.06 SEEDING

- A. Seed of the kind required shall be sown at the rate as specified in Table 2. Seed shall be sown in the presence of an inspector by mechanical spreader, hydraulic seeder or broadcasting. The broadcasting method shall be used for sowing seed only in areas inaccessible to mechanical spreading equipment. Seeding during winds above 15 mph shall not be permitted.
- B. Prior to placing seed materials, water topsoil to a depth of 4 inches at least 48 hours prior to seeding operations to obtain a loose friable seed bed. Time and depth of watering operations shall be varied at the direction of the ENGINEER for varying conditions at the site of the Work.
- C. Broadcasting methods for sowing seed materials shall be accomplished by spreading one-half of the specified amount of seed in one direction and then broadcasting the remaining one-half of the seed at right angles to the first seeding pattern using the same broadcast method.
- D. Rate of broadcast shall be as specified herein or per the written recommendations of the Producer of the seed material used.
- E. Roll seeded area with roller weighing a maximum of 150 lbs per foot of width.
- F. Hydroseeding shall be performed using suitably acceptable hydraulic seeding equipment and a homogeneous slurry solution of water, seed, fertilizer and suitable mulch material as approved by the ENGINEER. Seed slurry mixture shall be distributed uniformly at a rate approved by the ENGINEER for the seeding materials and/or mulch materials used to suit the seed application rate. Seed application rate shall be 300 lbs per acre.

3.07 MULCHING

- A. Mulching shall consist of placing a mulch material on areas that have been or are to be seeded. Mulch shall be placed in a loose enough condition so as to allow penetration of sunlight and circulation of air, but thick enough to shade the ground, reduce the rate of water evaporation and prevent erosion by wind or water. Mulch shall be secured with suitably acceptable anchoring material.
- B. For surfaces and slopes on which power equipment can be operated, satisfactory mulching materials include the following:
 - 1. Small grain wheat straw or grass hay applied at 1-1/2 to 2 tons per acre with disc packer, asphalt or netting tie-down.
 - 2. Wood chips applied at 6 to 9 tons per acre.
 - 3. Asphalt emulsion alone at 600 to 1200 gallons per acre. (This application is suitable for limited periods of time and where trampling by either people or animals will not occur.)
- C. For surfaces and slopes where power equipment cannot be operated, satisfactory mulching materials include the following:
 - 1. Straw or grass hay applied at 1-1/2 to 2 tons per acre, anchored with asphalt or netting tie-down.

2. Asphalt emulsion alone at 600 to 1200 gallons per acre. (Limited to areas where tracking is not a problem.)
 3. Commercially available erosion control netting of jute, paper or biodegradable synthetics.
 4. Continuous filament fiberglass at 1000 lbs per acre anchored with 150 gal per acre of asphalt emulsion.
- D. Anchor straw or hay mulch by the methods as specified herein.
 - E. Wood chips will not need anchoring when used on workable slopes.
 - F. Commercially manufactured netting and/or fiberglass materials shall be anchored in accordance with the manufacturer's printed instructions for the material used.
 - G. Punch and anchor mulch material into soil using mulch anchoring tool. Soil must be moist, free of stones and loose enough to permit disc penetration to a depth of 3 inches.
 - H. Blow on liquid or emulsified asphalt materials with the straw or hay mulch or spray or sprinkle asphalt tie-down materials immediately after mulch is spread.
 1. Apply emulsified asphalt at 200 gal per acre.
 2. Do not apply emulsified asphalt during freezing weather since it contains approximately 50% water.
 3. Apply liquid (cut back) asphalt at approximately 485 gal per acre.

3.08 CONVERSION FROM SOIL PROTECTION TO PERMANENT VEGETATION

- A. Following straw or hay mulching, grass seeding can be made in early spring by broadcasting seed directly into the mulch. Fertilizer or lime, where needed, should be incorporated into the soil before mulching.
- B. Asphalt emulsion alone can be readily incorporated into the soil by ordinary tillage before seeding.
- C. Wood chip mulch may be removed before seeding or incorporated deeply into the soil. If wood chips are incorporated into the soil, the addition of extra nitrogen fertilizer to the soil will be required to provide nitrogen in the new seeding.
- D. Fiberglass mulch shall be removed before seeding because of its permanence. Care shall be taken to prevent fiberglass filaments left in place from becoming entwined or wound around shafts of power mowers or other power equipment.
- E. Acceptable proprietary netting and erosion control materials shall be disposed of in accordance with the manufacturer's printed instructions for the material used prior to any seeding operations.

3.09 TURF ESTABLISHMENT

- A. Seeded areas shall be watered whenever excessive drying is evident during the period set for establishment. Watering shall be done in a manner that will prevent erosion due to the application of excessive quantities and the watering equipment shall be of a type that will prevent damage to the cultivated surfaces.
- B. The CONTRACTOR shall be responsible for the proper care of the seeded areas until final acceptance of the entire Work covered by the Contract.
- C. The seeded areas shall be mowed with mowing equipment acceptable to the ENGINEER to a height of 2 inches whenever the average height of grass establishment reaches four 4 inches. When the amount of cut grass is heavy, cut grass shall be removed to prevent destruction of the underlying grass.
- D. If weeds or other undesirable vegetation threaten to smother the planted species, such vegetation shall be mowed, or in the case of rank growths, shall be uprooted, raked and legally disposed of from the area.

- E. Reseed and mulch areas larger than 4 sq inches not having a dense, uniform, vigorous stand of grass acceptable to the ENGINEER.
- F. The establishment period shall extend for a period from the time of seeding until the seeded area has a uniform stand of grass acceptable to the ENGINEER. The minimum period shall be 30 days.
- G. If after 60 days from the initial seeding a dense, uniform, vigorous stand of grass has not been established by the CONTRACTOR, the OWNER may reseed the defective areas and all costs will be deducted from the CONTRACTOR's payments.

END OF SECTION

15. ASTM C139: Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
16. ASTM C150/C150M: Standard Specification for Portland Cement
17. ASTM C361: Standard Specification for Reinforced Concrete Low-Head Pressure Pipe
18. ASTM C425: Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings
19. ASTM C478/C478M: Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
20. ASTM C595/C595M: Standard Specification for Blended Hydraulic Cements
21. ASTM C618: Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
22. ASTM C700: Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
23. ASTM C828: Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines
24. ASTM C969: Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines
25. ASTM C1091: Standard Test Method for Hydrostatic Infiltration Testing of Vitrified Clay Pipe Lines
26. ASTM D1784: Standard Classification System and Basis for Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
27. ASTM D2321: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
28. ASTM D2680: Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping
29. ASTM D3034: Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
30. ASTM D3212: Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
31. ASTM D4101: Standard Classification System and Basis for Specification for Polypropylene Injection and Extrusion Materials
32. ASTM F477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
33. ASTM F679: Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
34. ASTM F949: Standard Specification for Poly(Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings
35. ASTM F1417: Standard Practice for Installation Acceptance of Plastic Non-pressure Sewer Lines Using Low-Pressure Air
36. ASTM F1803: Standard Specification for Poly (Vinyl Chloride)(PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter
37. ASTM F2487: Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene and Polypropylene Pipelines
38. MDOT - Michigan Department of Transportation, Standard Specifications for Construction, latest edition

39. NASSCO - National Association of Sewer Service Companies

40. NCPI - National Clay Pipe Institute

1.05 SOURCE QUALITY CONTROL

- A. Laboratory test not less than one (1) percent, with a minimum of three (3) pieces, each size, material and class of gravity pipe required in the Work.

1.06 TOLERANCES

- A. The actual grade of the invert of the sewer shall not deviate from plan grade by more than 0.1 foot per 100 feet, and not more than 0.2 feet in total for a sewer run from manhole to manhole.
- B. Alignment of sewer shall be within 0.2 foot per 100 feet and within 6 inches in total for a sewer run from manhole to manhole.

1.07 SUBMITTALS

- A. Submit independent grade checks in accordance with Part 3 of this section.
- B. Submit manufacturer's data for pipe bulkheading devices in accordance Part 3 of this Section.
- C. A complete field report of the location of all wyes, risers and building leads shall be submitted to the ENGINEER at the end of each sewer section of the Project or on the last day of each week, whichever occurs first.
 - 1. The complete field report shall include witnessing by the CONTRACTOR of the ends of all building leads placed. Witnessing shall consist of recording three (3) horizontal distances to the nearest 1 foot with the lines of measurement at minimum angles of 45 degrees with respect to one another.
 - 2. Witnessing shall also include recording of the depth to nearest 6 inches from the invert at the end of the lead to the finish ground above the end of the lead.
 - 3. No payment will be made for un-witnessed installation or for improperly witnessed installations.
- D. As part of the television inspection, a wye location report shall be submitted to the ENGINEER. The report shall contain the precise location of each wye, notes, photographs, and other pertinent information.
- E. Submit two (2) copies of the laboratory test reports required per Part 1 of this Section to the ENGINEER.
- F. Shop Drawings shall be provided of all manhole tees.

1.08 STORAGE OF MATERIALS

- A. Piping material shall not be stacked higher than 4 feet. Suitable racks, chairs, and other supports shall be provided to protect preformed pipe mating surfaces from damage. Store bottom tiers off the ground, alternate tiers and chock tier ends.
- B. All joint and sealing materials used in the sanitary sewer system shall be protected from sunlight and stored in cool and clean place until ready for installation.

1.09 HANDLING OF MATERIAL

- A. Load and unload piping using suitably approved hoists, skids, etc. Piping shall not be dropped, bumped or allowed to impact against itself. Damaged piping not be used by the CONTRACTOR..
- B. Lifting devices shall be suited to the Work and shall protect surfaces from damage.

PRODUCTS

2.01 SCOPE

- A. It is the intent of the Articles in Part 2 of this specification section to specify in detail the various types of sewer pipe, joints, manholes, etc. which have been indicated throughout the Plans and Specifications. These Articles shall not be construed as allowing any alternate type of material to that which is indicated on the Plans or elsewhere in the Specifications.

2.02 CLAY PIPE SYSTEMS

- A. Pipe shall conform to ASTM C700, extra strength vitrified clay pipe.
- B. Joints for all clay pipe shall meet the requirements of ASTM C425.
 - 1. Joints for house leads shall be limited to approved compression type joints with the sealing element bonded to the bearing surfaces.
- C. Only lubricant as supplied by the pipe manufacturer shall be used on the bell and spigot in making up joints and the joints shall be coupled in accordance with the pipe manufacturer's requirements.
- D. Wyes and tees shall be manufactured to the same standards as the pipe. Wye and tee fittings shall be furnished with the spurs securely fastened by the manufacturer to the barrel of the pipe. There shall be no projection on the inner surface of the pipe.

2.03 PRECAST CONCRETE PIPE SYSTEMS

- A. Non-reinforced Concrete Pipe
 - 1. Pipe shall conform to ASTM C14, Class III, nonreinforced concrete sewer pipe.
- B. Reinforced Precast Concrete Pipe System
 - 1. Pipe 12 inch through 30 inch diameter shall be ASTM C76, Class II through V (as specified on the plans), Wall B or Wall C, circular reinforced.
 - 2. Pipe 36 inch through 108 inch diameter shall be ASTM C76, Class I through V (as specified on the plans), Wall B or Wall C, circular or elliptical reinforced.
 - a. When elliptical reinforcement is used, the following method of indexing the steel and the pipe barrel shall be used:
 - 1) A dummy lift pin form shall be set in the outer pipe wall form projecting into the pipe wall a minimum 1-3/4 inches and a maximum of . An additional spacer chair shall be welded to the elliptical steel cage at the proper location so as to engage the dummy lift pin form during the pipe casting operation.
 - 2) It is the intent of the spacer chair and dummy lift pin arrangement to provide a means of assuring the final position of the elliptical steel cage within the barrel of the pipe and, for providing a means of indexing the pipe in the field to assure proper placement of the pipe.
 - 3) Prior to shipment of the pipe, they shall be striped along the inside top with a minimum wide indelible marker so that final inspection of the pipe orientation can be made following completion of the installation.
 - 3. For pipe 114 inches or larger in diameter, the design information in accordance with Section 6 of ASTM C76 shall be submitted to the ENGINEER for approval, prior to fabrication. The design of all pipes shall meet the D-load requirements for the class of pipe indicated on the Plans.
- C. Joints for Concrete Pipe
 - 1. Premium joints for concrete pipe shall be ASTM C443 limited as follows:
 - a. Section 6.1 of ASTM C443, "Physical Requirements for Gaskets," shall be replaced with Section 6.9 of ASTM C361, "Rubber Gaskets." Also, Section 5 of ASTM

C443 shall be limited to a modified grooved tongue to receive an "O" ring rubber gasket.

2. For concrete pipe sizes 12 inch through 24 inch, the modified grooved tongue and bell ends of the pipe shall be made smooth and shall not have over a 3-1/2 degree slope formed to fit the rubber gasket to tolerances as determined by the manufacturer. Pipe tongue shall not be out of round by more than $\pm 1/16$ inch.
3. For pipe sizes 27 inch through 108 inch, the modified groove and bell ends of the pipe shall be smooth and shall not have over a 2-degree slope, formed to fit the rubber gasket to tolerances as determined by the manufacturer.
4. For pipe sizes and larger, the tongue shall be reinforced with an amount of circular steel equivalent in area to the inner steel cage specified for the pipe barrel and the bell shall be reinforced with an amount of circular steel equivalent in area to the outer steel cage specified for the pipe barrel.
5. For pipe sizes under 36 inches in diameter, including C14-XM5 extra strength, the bell or tongue shall be reinforced. Where the reinforcing steel for the tongue, barrel and bell is not continuous, the steel shall be lapped a minimum of 2 inches.
6. Only lubricant, as supplied by the pipe manufacturer, shall be used on the groove and on the tongue in making up joints, and the joints shall be coupled in accordance with the pipe manufacturer's requirements.
7. All joints in concrete pipe 36 inches in diameter and larger shall have the inside annular space filled with cement mortar and troweled flush. Mortar shall consist of 1-part Portland Cement and two (2) parts of plaster sand. Mortar for inside joints shall be mixed with only enough water for dry packing.

D. Wyes and Tees

1. Wyes and tees shall be manufactured to the same standards as the pipe. Spurs shall be of the same size and type as the house lead/riser pipe. Wye and tee fittings shall be furnished with the spurs securely fastened by the manufacturer to the barrel of the pipe. There shall be no projection on the inner surface of the pipe.

2.04 ABS PIPE

- A. ABS Truss pipe shall be ASTM D2680, Acrylonitrile- Butadiene-Styrene (ABS). The pipe shall be of a double wall construction, braced with a truss-type structure with all three (3) formed in one (1) extrusion. The truss voids are filled with lightweight concrete to provide additional compressive strength and bracing.
- B. Joints for Acrylonitrile-Butadiene-Styrene (ABS) composite pipe shall be per ASTM D2680, Type S.C., a solvent-cemented joint in which pipe solvent cements into a coupling socket to form the joint closure. Installation of the solvent cement shall be in strict accord with the manufacturer's recommendations.
- C. Wyes and tees shall be manufactured to the same standard as the pipe. Spurs shall be of the same size and type as the house lead/riser pipe. Wye and tee fittings shall be furnished with the spurs securely fastened by the manufacturer to the barrel of the pipe. There shall be no projection on the inner surface of the pipe.

2.05 PVC TRUSS PIPE

- A. Polyvinyl Chloride (PVC) truss pipe shall be ASTM D2680. The pipe shall be of a double wall construction, braced with a truss-type structure with all three (3) formed in one (1) extrusion. The truss voids are filled with lightweight concrete to provide additional compressive strength and bracing.
- B. Joints for Polyvinyl Chloride (PVC) pipe shall be elastomeric gasketed conforming to ASTM D3212, push on type joint.

- C. Wyes or tees shall be a molded wye or tee fitting per ASTM D2680, with gasketed joints on each end suitable for directly inserting in the mainline pipe. Wye and tee fittings shall be furnished with the spurs securely fastened by the manufacturer to the barrel of the pipe. There shall be no projection on the inner surface of the pipe. Branch connection fitting shall be a gasketed joint suitable for the house lead pipe specified. Saddle connections are not allowed.

2.06 PVC SOLID WALL PIPE

- A. PVC Solid Wall Pipe in sizes 6 through 15 inch shall be ASTM D3034, SDR 35, and in sizes 18 through 27 inch shall be ASTM F679, SDR35, polyvinyl chloride pipe (PVC).
- B. Joints for polyvinyl chloride pipe (PVC) shall be ASTM D3212, push-on type. A joint in which an elastomeric ring gasket is compressed in the annular space between a bell end or socket and a spigot end of pipe.
- C. Wyes or tees shall be a molded wye or tee fitting per ASTM D2680, with gasketed joints on each end suitable for directly inserting in the mainline pipe. Wye and tee fittings shall be furnished with the spurs securely fastened by the manufacturer to the barrel of the pipe. There shall be no projection on the inner surface of the pipe. Branch connection fitting shall be a gasketed joint suitable for the house lead pipe specified. Saddle connections are not allowed.

2.07 DUAL WALL CORRUGATED PVC PIPE – SMOOTH INTERIOR

- A. Dual Wall Corrugated PVC Pipe (DWCP) shall be a single extrusion of PVC with a smooth interior and corrugated outer walls. Corrugated outer profile shall be annular and seamless. Pipe and fittings shall be in accordance with ASTM F949. Joints shall be bell and spigot type with an elastomeric gasket meeting the requirements of ASTM F477 and be suitable for sanitary sewer service and the testing requirements of this section.
- B. Wyes or tees shall be a molded wye or tee fitting per ASTM F949, with gasketed joints on each end suitable for directly inserting in the mainline pipe. Branch connection fitting shall be a gasketed joint suitable for the house lead pipe specified. Saddle connections are not allowed.
- C. Connections to manholes that utilize a rubber boot (Kor-N-Seal) shall be accomplished by sealing the rubber boot to a rubber gasket installed on the outside of the pipe with the stainless steel band and clamp assemblies on the outside of the rubber boot.
 - 1. For sizes 21 inch and larger use two stainless band assemblies (with two screw clamp assemblies per band assembly) on the outside of the rubber boot, with the screw clamps staggered around the pipe so that the take-up pressure is equalized.
- D. Connections to manholes with an A-Lok type connection shall use a manhole sleeve designed for connection to an A-Lok assembly with the recommended A-Lok ring number.
- E. Acceptable manufacturers of Dual wall corrugated PVC pipe include Contech A2000, Uponor ETI Ultra-Corr or ENGINEER approved equal.

2.08 CLOSED PROFILE PVC PIPE

- A. Closed Profile PVC Pipe (CPVP) and fittings shall be manufactured in accordance with ASTM F1803.
- B. PVC profile wall pipe shall be made from a compound meeting the requirements of cell classification 12364A as defined by ASTM D1784.
- C. PVC profile wall pipe joints shall be rubber gasketed, bell and spigot type joints.
- D. Gaskets shall meet the requirements of ASTM F477 and be molded into a circular form or extruded to the proper section, then spliced into circular form, and shall be made of a properly cured high grade elastomeric compound.
- E. Gaskets shall be factory installed and chemically bonded to the bell end of the pipe. Field installed gaskets and field cut beveled lengths of pipe shall be done in accordance with the manufacturer's instructions and recommended equipment and materials.
- F. All pipe gaskets and spigots will be thoroughly cleaned and lubricated before assembly.

- G. Manhole connections shall be made with ALOK or Press Seal PSX rubber couplings only. No other connections are allowed.
- H. The pipe shall be handled with nylon slings. Cables or chains shall not be used.
- I. Lateral connections to PVC profile wall pipe may be made using Inserta-tee as manufactured by the Fowler Manufacturing Company, or the Predco Fast Fit tap system.
 - 1. All saddle or tapping tees will be installed per manufacturer's recommendation.
- J. Exposed channels in field cut ends need to be plugged with 3M Industrial Sealant DP-605 or approved equal.
- K. Acceptable Manufacturer of Closed Profile PVC Pipe is Lamson Vylon Pipe.

2.09 STRUCTURES

- A. Material for sanitary sewer structures shall conform to the requirements as indicated on the plans and as specified below. Precast concrete structures are required except when constructing a structure over an existing sewer which may require limited use of concrete block or brick as approved by the ENGINEER.
- B. Concrete Brick
 - 1. Concrete brick shall be ASTM C55, Grade S-II, solid units of nominal 3-inch (75 mm) thickness.
- C. Concrete Block
 - 1. Block shall conform to ASTM C139, Portland cement conforming to ASTM C150/C150M, Type II. Blocks shall be solid curved blocks with the inside and outside surfaces parallel and curved to the required radii. The blocks shall have a groove or other approved type of joint at the ends.
- D. Precast Concrete
 - 1. Precast concrete manhole, flat top slabs, risers, cone, transition sections and bottom sections shall conform to ASTM C478/C478M, and shall be circular with circular reinforcement.
 - a. For depths greater than 32 feet, manhole shall be designed for the earth loading at the design depth of bury with a factor of safety of 1.5.
 - b. Base slab shall be minimum 8 inches thick for depths up to 25 feet and minimum 12 inches thick for depths greater than 25 feet.
 - 2. Transition sections, reducers and flat top slabs shall be designed for the earth loading at the design depth of bury with a factor of safety of 1.5.
 - 3. Precast doghouse sections shall be used for:
 - a. connections to existing sewer 15 inches and smaller on straight through runs and depths no greater than 20 feet;
 - b. and on right angle runs, with a maximum of four cutouts for depths up to 12 feet.
 - c. Openings in precast doghouse sections shall be cast in the pipe before curing and no breaking or chipping of sections will be allowed after the manhole section has cured.
 - d. The size of the opening shall be cast as indicated on the Plans.
 - 4. Precast bottom sections shall be cast with the bottom end flat to provide bearing of the full wall thickness.
 - 5. The openings for sewer pipe shall be cast in the manhole section by the manufacturer.
 - 6. Connections to manholes for pipe sizes 6 through 24 inch shall use a mechanically compressible flexible joint, as indicated on the Plans.

7. Connections to manholes for pipe sizes 27 inch and larger shall be grouted, as indicated on the Plans.
8. Manhole sections shall have modified grooved tongue joints with "O" ring gaskets or a tongue and groove joint with a Butyl Rubber based gasket type sealant meeting the requirements of ASTM C990 and having a nominal size of 1 inch.
9. Eccentric cone sections of a manhole shall have modified grooved tongue joints with "O" ring gaskets and be provided with 4-stud inserts cast in the top. The top shall have a smooth finished surface.
10. Concrete grade rings shall have smooth finished top and bottom surfaces. Grade rings shall be provided with "O" ring gaskets.
11. Manholes on sewers to be subjected to air tests shall be equipped with a 1/2 inch diameter galvanized capped pipe nipple extending through the manhole wall, 3 inches into the manhole, and at an elevation equal to the top of the sewer pipe.
12. Pipe, 48 inches in diameter or larger, shall be installed as an integral part of the manhole (manhole tees) which shall be constructed of 3,500 psi concrete placed in one continuous pour to 12 inches above the top of pipe as indicated on the Plans.
13. Precast manhole tees will be allowed on straight through runs with no angle at the manhole and where stubs or openings in manhole are above the tee section.
14. Precast concrete manhole tee units shall conform to ASTM C76, Class IV and shall be circular with circular reinforcement. The precast tees must be a monolithic pour with wire cage inspection prior to concrete placement. Joints for tee shall be the same as the joints on the sanitary sewer.

E. Manhole Steps

1. Cast iron manhole steps shall conform to ASTM A48/A48M, Class 30, gray iron with a minimum cross section dimension of 1 inch in any direction.
2. Steel reinforced plastic manhole steps shall be of suitably approved co-polymer polypropylene conforming to ASTM D4101, PP0344B33534Z02 with 1/2 inch minimum diameter deformed reinforcing bar conforming to ASTM A615/A615M, Grade 60 and shall be in accordance with ASTM C478/C478M.
3. Manhole steps shall be of the types and sizes indicated on the Plans and shall comply with applicable Michigan Occupational Safety and Health Standards (MIOSHA).

F. Manhole Frames and Covers

1. Manhole frames and covers shall conform to ASTM A48/A48M, Class 30, gray iron and shall be of the types and sizes as indicated on the Plans. The castings shall be neatly made and free from cracks, cold sheets, holes and other defects.
2. Surfaces of casting shall be ground to assure proper fit and to prevent rocking.
3. For all sanitary manholes, use a bolted waterproof frame with a pressure tight cover. Bolted down frame and cover shall be installed as indicated on the Plans.

2.10 STEEL PIPE

- A. Pipe shall conform to ASTM A53/A53M, black and hot-dipped galvanized welded and seamless pipe of standard weight.

2.11 BOLT, STUDS, NUTS

- A. Bolt, studs, and nuts shall conform to the following ASTM Standards:
 1. Cadmium Plating: ASTM B766, Grade N.S.
 2. Zinc Coating: ASTM A153/A153M or ASTM B633, Type G.S.

2.12 CONCRETE

- A. Concrete shall conform to MDOT Section 1004, use 3,500 psi strength concrete; Type IA cement; MDOT 6A coarse aggregate; MDOT 2NS fine aggregate; 3 inch maximum slump; no admixtures without the ENGINEER's approval.

2.13 CONCRETE REINFORCEMENT

- A. Use ASTM A615/A615M, Grade 60 for bars and ASTM A1064/A1064M for welded wire fabric.
- B. In accordance with MDOT Section 905, use ASTM A615/A615M, Grade 60 for bars and ASTM A185 for welded wire fabric.

2.14 FLOWABLE FILL

- A. Flowable Fill for filling abandoned Water Mains.
 - 1. Materials
 - a. Cement: Cement shall conform to ASTM C150/C150M or ASTM C595/C595M
 - b. Fly Ash: Fly ash shall have a maximum loss on ignition of 12 percent and meeting the other requirements of ASTM C618 (Class F)
 - c. The water shall meet the requirements of ASTM C94/C94M
 - 2. Mixture Strength (50 to 100 psi)
 - a. Fly Ash: 2,000 lbs/cyd minimum
 - b. Cement: 100 lbs/cyd minimum
 - c. Sufficient water to produce the desired flowability (approximately 700 lbs/cyd)
- B. The temperature of the flowable fill mixture as manufactured and delivered shall be at least 50 degrees F.
- C. The flowable fill can be mixed by pugmill, central concrete mixer, ready mix truck, turbine mixer, or other acceptable equipment or method.
- D. CONTRACTOR shall submit a history of the mix design for seven (7) day and 28 day strengths, together with any other technical information. The design mix shall also be included as part of the CONTRACTOR's submittals for project.

EXECUTION

3.01 VERIFICATION OF EXCAVATION AND BEDDING

- A. Prior to the installation of any sanitary sewer piping, structures, or materials, examine all trenches and other excavations for the proper grades, lines, levels and clearances required to receive the new Work.
- B. Ascertain that all excavation bottoms, compacted subgrades and pipe bedding are adequate to receive the sanitary sewer materials to be installed.
- C. Correct all defects and deficiencies before proceeding with the Work.

3.02 EXISTING SANITARY SEWERS

- A. The CONTRACTOR shall expose the existing sanitary sewer and structures to which the new Work is to be connected and notify the ENGINEER of same. The ENGINEER will verify the vertical and horizontal locations of the existing system and shall inform the CONTRACTOR as to the necessary adjustments required to align the new sanitary sewer work with the existing system.
- B. Connecting to an existing manhole requires removing the existing flow channel and constructing a new flow channel as necessary.

- C. When connecting a new sewer to an existing sewer or a new building lead to an existing building lead, where the pipe joints are not compatible, use a "Fernco" rubber adapter. When connecting clay to clay, concrete to concrete or plastic to plastic, use stainless steel shear ring type couplers.

3.03 VERIFICATION OF PIPE CLASS AND JOINTS

- A. Prior to the installation of any sanitary sewer piping, ascertain that the class of pipe, joint material and bedding are as specified herein and as indicated on the Plans.

3.04 PREPARATION OF PIPE ENDS

- A. The outside surface of the spigot end and the inside surface of the bell end shall be cleaned and free of any foreign material, other than sealant recommended by the manufacturer, prior to installation.

3.05 EXAMINATION OF MATERIAL

- A. All pipe, frames, covers, accessories, and appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective or damaged material shall be rejected and removed from the Project by the CONTRACTOR.

3.06 INSTALLATION - GENERAL

- A. Each section of pipe, when placed to grade and line, shall have firm bearing on the trench bedding throughout its length.
- B. All pipe shall be laid to the line and grade called for on the Plans. Each pipe as laid shall be checked by the CONTRACTOR with line and grade pole or laser system to insure proper result is obtained.
 - 1. When employing a laser system, the CONTRACTOR shall have an alternate and independent means of checking the line and grade. CONTRACTOR shall check line and grade every 100 feet.
- C. The finished work shall be straight and shall be sighted through between manholes.
- D. Construction shall begin at the outlet end and proceed upstream with spigot ends pointing in direction of flow. Bell holes shall be excavated so that the full length of the barrel will bear uniformly on the bedding.
- E. Mechanical means shall be used for pulling home all pipe where manual means will not result in pushing and holding the pipe home. Mechanical means shall consist of a cable placed inside of the pipe with a suitable winch, jack, or come along for pulling the pipe home and holding the pipe in position.
- F. After laying of pipe, care shall be taken so as not to disturb its line and grade. Any pipe found off grade or out of line shall be re-laid.
- G. Cutting of pipe shall be done with approved tools and by approved methods suitable for the pipe material. Pipe cutting methods that produce a smooth, square-cut end without damage to the pipe and that minimize airborne particles shall be employed.
- H. Pipe cutting shall be performed using the recommendations of the manufacturer of the type of pipe materials being cut and according to the best trade practices.
- I. When cutting of pipe or fittings, care shall be taken to prevent damage to the lining and the exterior surface. Damage to either shall be cause for rejection of complete section.
- J. During the preparation of the pipe bedding and until the trench has been satisfactorily backfilled, the trench shall be kept free of water and sewage. A dewatering system, in accordance with Section 31 2319, Dewatering, shall be provided and maintained by the CONTRACTOR. The dewatering system shall remain in operation until the trench is backfilled.
- K. Where pipe is located in a flood plain or otherwise susceptible to flotation it shall be anchored against flotation.

- L. Backfill shall be as indicated on the Plans and as specified in Section 31 2333, Trenching and Backfilling.

3.07 PIPE LAYING

A. Rigid Pipe

1. Installation of rigid pipe shall conform to ASTM C12.
2. All pipe shall be jointed by means of a resilient gasket. The resilient gasket shall be lubricated and installed to form a watertight joint between the bell and spigot of the pipe. The bell of the pipe in place shall be cleaned and properly lubricated prior to the installation of the next pipe spigot. The pipe shall be centered in the bell or groove. After the spigot is well entered into the bell and the gasket is fully compressed and brought to final shape, check the gasket for proper position around the full circumference of the joint. Complete installation by pushing the pipe tightly together to form a smooth and continuous invert.
3. Circular concrete pipe with elliptical reinforcement shall be installed with the lift holes on the top of the pipe. The manufacturer's marks designating the top and bottom of the pipe shall not be more than five (5) degrees from the vertical plane through the longitudinal axis of the pipe. After the pipe is installed, the lift holes shall be sealed with suitable concrete plugs and grouted.
4. When adapters are required to properly connect the new pipe to an existing pipe of other materials or manufacture, the nominal inside diameter of adapters shall be the same size as the nominal pipe diameter to which it is to be connected.

B. Flexible Pipe

1. Installation of flexible pipe shall conform to ASTM D2321.
2. Except as otherwise specified herein, installation of ABS and PVC piping shall be made in complete accordance with the published installation guide of the pipe manufacturer.
3. Joints for ABS pipe shall be made by first applying a coat of primer to the inside of the socket and to the outside of the spigot end of the pipe.
 - a. Without delay, apply a coating of cement to the same surfaces in sufficient quantity that when the spigot is fully inserted into the socket, a bead of excess cement will form around the complete circumference of the outside junction of the spigot and socket.
 - b. Remove the excess cement and allow the assembly to cure 24 hours.
4. Joints for PVC pipe shall be made by using a lubricant immediately before joining.
 - a. Apply lubricant on the bell and spigot, coating the entire circumference of the bell and spigot bevel plus 1 inch behind the taper. Insert lubricated spigot into the bell, and using normal force insert spigot until insertion stripe mark is flush with the bell entrance.
5. When jointing ABS or PVC pipe, rotate the pipe when inserting it approximately 1/4 to 1/2 turns.
6. Taps to previously installed ABS and PVC pipes, where in-line fittings are not provided, shall be made with chemically welded saddle fittings unless otherwise indicated on the Plans.
 - a. Holes for saddle connections shall be by mechanical hole cutters, or by keyhole saw or saber saw.
 - b. Holes for saddles shall be laid out with a template and shall be deburred and beveled to provide a smooth hole shaped to conform precisely to the fitting.

- c. After the cemented saddle has been fixed to the pipe surface, quickly install band clamps each side of the saddle and tighten.

3.08 PIPE BEDDING

- A. After the bottom of trench has been excavated the pipe bedding material will be installed in accordance with Section 31 2333, Trenching and Backfilling.
- B. The pipe shall then be installed strictly in accordance with the manufacturer's recommendations.
- C. After the pipe is laid, the bedding shall be continued above the pipe as specified in Section 31 2333, Trenching and Backfilling.
- D. Particular care shall be taken to assure filling and tamping all spaces under, around and above the top of the pipe.
- E. A continuous and uniform bedding as specified in Section 31 2333, Trenching and Backfilling, shall be provided in the trench for all buried pipe.

3.09 INSTALLING PVC PIPE IN CASINGS

- A. When installed inside of a casing, the pipe shall not rest on the bell as it is pushed into the casing. Casing spacers shall be used in accordance with the manufacturer's recommendations.
- B. Three spacers should be used per pipe length. Follow the casing spacer manufacturers' recommendation. One of the spacers must be secured to the pipe at the second homing mark; the others should be equally spaced.
- C. Joint restraint shall be used in the casing.
- D. The annular space between PVC pipe and the casing pipe shall be filled with cellular grout. After installation of pipe in casing, the casing shall be kept dewatered until grouting is completed. Grout shall be placed by gravity flow following recommendations supplied by the pipe manufacturer. The pipe shall be kept full of water during the grouting process. Make certain the void is completely filled around the first pipe before moving on to the next.
 - 1. Block the pipe in place with casing spacers.
 - 2. Fill the entire pipe segment to be grouted with water.
 - 3. Use a lightweight cellular grout mix.
 - 4. Gravity flow or pump the grout into the annular space. Long runs may require pumping – keep the pressure less than 5 psi in the annular space. Pressure shall be monitored with an approved pressure gauge. Extreme caution is advised in pumping grouts in this annular space.
 - 5. All grouting shall be in accordance with pipe manufacturer's procedures and recommendations.
- E. A lightweight cellular grout minimizes floatation forces and can be gravity flowed or pumped at extremely low pressures without collapsing the carrier pipe. The grouting pressures must be closely monitored with a sensitive pressure gauge with 1 to 2 psi graduations. When not controlled, pressure grouting can collapse the PVC carrier pipe.
- F. The CONTRACTOR shall submit for Shop Drawing approval his procedure for placing the grout, joint restraint, and casing spacers for pipes installed in bores.

3.10 MANHOLE STRUCTURES

- A. Construct sanitary sewer manhole and other sanitary structures to the grades, lines and levels indicated on the Plans, or as specified herein.
- B. Structures shall be precast concrete, complete with concrete bases, reinforcing, frames, covers, and adjustment rings, as shown and as required for a complete installation.
- C. Sanitary manholes as called for on the Plans shall carry a stub opening as specified herein.

- D. Wye openings in manholes are prohibited unless indicated on Plans.
- E. Sanitary sewer structures shall conform to the type of material and dimensions indicated on the Plans. Construct as detailed on the Plans.
- F. Manholes shall be completed and ready for final inspection either before 600 feet of additional sewer construction is completed or within one (1) week after the manhole is constructed, whichever comes first.
- G. Block Structures
 - 1. Sanitary manholes may only be constructed with block where specifically shown on the plans or where approved by the ENGINEER.
 - 2. The first course of concrete block shall be placed on the prepared base in a full bed of mortar.
 - 3. Mortar joints shall be full and closed in all courses. Courses shall be level throughout.
 - 4. Stagger joints in adjoining courses by one-half the length of the block as nearly as practicable. Joints shall be uniform in thickness throughout the structure. Strike all joints and properly point to provide true, smooth surfaces.
 - 5. Prior to applying plaster coat, block shall be thoroughly wetted with water and the surface allowed to dry sufficiently to effect proper bonding.
 - 6. Cement mortar plaster coat shall be applied to the exterior surfaces of all brick and/or concrete block sections of all manholes. Plaster coat shall be 1/2 inch thick.
- H. Where precast doghouse sections cannot be used, the manhole shall be brick or block to 8 inches above top of highest pipe. Above that point manholes shall be precast concrete as shown on the plans.
- I. Provide and install all cast iron covers, frames, adjusting rings, and anchors to the elevation indicated on the Plans, or as specified herein. Castings shall be set on 1 inch diameter rubber "O" ring gasket, resting on adjustment rings. The casting shall be anchored to the precast concrete cone section as indicated on the Plans.
- J. Steps are to be installed at the plant by the manufacturer of precast units. Field install steps in other than precast structures of the types and in the locations indicated on the Plans.
- K. Concrete flow channels shall be constructed in each manhole, as indicated on the Plans.
 - 1. For manholes with outlet pipe diameter of 24 inches or less, construct concrete flow channel straight through a manhole to conform as closely as possible in shape, and slope to that of the connecting sewers.
 - 2. The channel walls shall be formed or shaped to the full height of the crown of the outlet sewer in such a manner to not obstruct maintenance, inspection or flow in the sewers.
 - 3. The concrete flow channel shall be constructed with a 3/4 to 1-1/4 inch gap provided at the pipe ends to maintain joint flexibility.
- L. For manholes with outlet pipe diameters from 27 to 42 inches or for manholes constructed over existing sewers to 42 inches in diameter, the channel shall be constructed by filling around the pipe to the spring line and splitting the pipe at the spring line and removing the top half after the manhole is constructed.

3.11 SANITARY SEWER STUB OPENING

- A. Stub openings shall be at least two (2) pipe lengths, with a minimum length of 10 feet (unless otherwise indicated on the Plan), and the first joint located approximately 18 inches from the outside manhole wall. The end of the stub shall have a manufactured bell, which shall be plugged with a watertight manufacturer plug that is blocked to prevent movement.

3.12 VENT ASSEMBLY

- A. Provide all materials and construct vent assemblies where indicated on the Plans. Install all piping, fittings, joints, vents, etc., as detailed.
- B. Vent assemblies shall be installed on undisturbed earth and provided with restraints as indicated on the Plans, and as required for a complete installation.
- C. Vent assemblies shall be connected to manholes as indicated on the Plans.

3.13 DROP CONNECTION ASSEMBLY

- A. Provide all materials and construct drop connection assembly where indicated on the Plans. Install all piping, fittings, joints, etc., as detailed.
- B. Tapping of existing manholes for drop connections shall be made by drilling holes through the wall of the manhole at 4 inches centers along the periphery of the opening, to create a plane of weakness joint, before breaking out section. Nonshrink grout shall be used to seal the opening and a 3,500 psi concrete collar 12 inches thick shall be poured around the pipe. Drop connections to existing or new manholes shall be made as indicated on the Plans.

3.14 BULKHEADS

- A. A solid masonry or approved water and airtight bulkhead shall be placed at each point of beginning and at each stub that is constructed or as indicated on the Plans.
- B. At the completion of construction and testing, all the bulkheads shall be removed, unless otherwise indicated on the Plans or as directed by the ENGINEER.

3.15 WYES

- A. One 6 inch wye or tee branch shall be provided for each lot or parcel 100 feet or less in width that is served by the sewer, or every 100 feet for lots or parcels in excess of 100 feet in width that is served by the sewer, unless otherwise indicated on the Plans or specified.
- B. In all cases, unless otherwise indicated, wyes shall be placed as near as practical to the lower 1/3 point of vacant lots or parcels to be served, and it shall be the responsibility of the CONTRACTOR to see that the wyes are so placed.
- C. Wyes to developed lots or parcels shall be placed at the location nearest the existing sanitary service lead.
- D. If the CONTRACTOR fails to place any wyes as herein outlined he shall return to the site and place additional wyes, in an approved manner, at his expense.
- E. If a concrete pipe with an inset opening is being used, a compression type joint shall be cast into bell end of the opening. Wye openings shall be closed with a 6 inch stopper, as recommended by the manufacturer, to make a watertight closure.

3.16 RISERS

- A. Risers shall be installed where the sewer is more than 12 feet below the established grade or future grade, and carried to between 9 to 10 feet of the established grade or future grade, as indicated on the Plans. Pipe 6 inches in diameter, with approved compression type joints, shall be installed in the manner indicated on the Plans.
- B. Riser openings shall be closed with a stopper, as recommended by the manufacturer, to make a watertight closure.

3.17 BUILDING LEADS

- A. All building leads shall be 6 inches diameter pipe and shall be laid on a uniform slope of 1/8 inch per foot unless greater slope will provide depth considered adequate by the ENGINEER.
- B. Building leads shall be provided to within 1 foot of property line for all lots or parcels on both sides of the street, unless otherwise indicated on the Plans. If in an easement, the lead shall be provided to within of the easement line.

- C. Building lead depth, 4 feet horizontal from property line or permanent easement line, shall be between 8 to 9 feet deep. From this point, a 45-degree bend shall be placed and a short length of pipe such that the end depth will be between 5 to 6 feet deep.
- D. Building leads under or within 5 feet of concrete or asphalt pavements shall be installed by boring or tunneling.
- E. Each building lead shall be closed with a stopper, as recommended by the manufacturer, to make a watertight closure.

3.18 WYE, RISER OR BUILDING LEAD MARKER

- A. Unless otherwise indicated in the Plans or Specifications, prior to the backfilling of a wye, riser or building lead, a 2 by 2 inch (minimum cross section) wooden marker shall be placed from a point immediately in front of the service connection to 1 foot below the finish ground surface. Do not rest the marker on any portion of the service connection or stopper.

3.19 ABANDONING SANITARY SEWER WITH FLOWABLE FILL

- A. Install a bulkhead in each end of the sanitary sewer to be abandoned leaving a small opening in the very top of each bulkhead
- B. Install a minimum 2 inch 2-inch (50 mm) diameter stand pipe in the top of the bulkhead of the sanitary sewer to be abandoned. The stand pipe should be installed such that it can be removed after use and the hole sealed.
- C. Install a minimum 2 inch air release pipe in the bulkhead in the opposite end of the sanitary sewer from the stand pipe. The air release pipe should bend up to a 90 degree angle with the end of the pipe being a minimum of 6 inches above the top of the sanitary sewer.
- D. Using the stand pipe, pump flowable fill into the sanitary sewer to be abandoned. The flowable fill shall be pumped into the sanitary sewer until free water flows from the air release pipe at the opposite end. Continue filling the sanitary sewer until the material released at the air release pipe is representative of the flowable fill being introduced at the fill end of the sanitary sewer.
- E. Remove the stand pipe and air release pipe and plug the hole in both bulkheads.

3.20 ABANDON EXISTING MANHOLES

- A. Manholes on the existing sanitary sewer shall be abandoned and the structures shall be removed in accordance with the following:
 - 1. The removal of existing structures shall consist of removing and salvaging the existing frame and cover.
 - 2. The ends of the existing sanitary sewer shall be bulkheaded.
 - 3. The top masonry shall be broken down to an elevation at least 30 inches below the proposed subgrade or finished grade.
 - 4. The abandoned structure shall be backfilled with flowable fill to 1 foot above the pipes and the remainder of the structure with sand-cement mixture at a 10 to 1 ratio to subgrade elevation.

3.21 FIELD QUALITY CONTROL

- A. After all the pipe, structures, and leads have been laid, constructed and backfilled, the system shall be final inspected and tested. The inspection and testing shall consist of the following parts:
 - 1. first inspection
 - 2. television inspection
 - 3. testing

- B. The first inspection shall be completed and all repairs made in ample time so that the television inspection of the underground portion of the system, can be completed within four (4) weeks of the completion of the construction.
- C. Television inspection shall be considered completed when the necessary construction repairs have been made and the installation re-televised when required, and the system is acceptable for the testing phase.
 - 1. When re-television is necessary, an additional two (2) weeks will be allowed for completion.
- D. Testing of the system shall immediately follow the television inspection and shall be completed within a 2-week period.
- E. Failure to maintain a schedule in compliance with this specification will automatically cause the stoppage of other work at the particular site in question until such time as the final inspection of the completed underground portion of the system has progressed to within acceptable limits.
- F. First Inspection
 - 1. The CONTRACTOR shall have the underground portion of the sewer system ready for the first inspection within two (2) weeks after the completion of the installation of each 2,000 foot section of sewer.
 - 2. The first inspection shall consist of:
 - a. a visible and audible check of the sewers and manholes to ascertain that the manhole steps have been placed,
 - b. all lift holes plugged,
 - c. the channeling of the manhole bottoms completed,
 - d. all visible or audible leaks stopped,
 - e. all pipe has been placed straight and true to the proper grades and elevation,
 - f. the required adjusting rings and frame and cover properly installed,
 - g. all trenches and structures backfilled in a workmanlike manner
 - h. and that the system has been thoroughly cleaned.
 - 3. The first inspection shall be considered completed when all the repairs have been made and the system is ready for television inspection.
- G. Television Inspection
 - 1. The CONTRACTOR shall provide for television inspection of the various sanitary sewer lines installed under this Contract.
 - 2. The CONTRACTOR shall arrange for, engage and pay all expenses involved for the services of a competent company to perform this television inspection.
 - 3. The television inspection shall observed by representatives of the OWNER, ENGINEER, and the CONTRACTOR. Any television viewing performed in the absence of the ENGINEER will not be considered as a part of the final inspection.
 - 4. The inspection shall involve the visual observation by closed-circuit television of all sanitary sewer 8 to 30 inches in diameter inclusive, installed as a part of this Contract.
 - 5. Prior to television inspection, the CONTRACTOR shall run water down the line to show any dips or high spots in the line. Water shall be run continuously during television inspection if necessary to determine changes in grade in the line.
 - 6. The inspection shall be performed at a maximum rate of speed of 30 feet per minute, which will allow examination of all points of infiltration, cracked or crushed pipe, defective joints, misalignment in line or grade, location of all wye openings and any defects or items

of poor workmanship which may appear.

7. All observations shall be documented per NASSCO current Pipeline Assessment Certification (PACP) requirements.
 - a. Any items which, in the opinion of the ENGINEER, require repair shall be precisely located and photographed along with a detailed statement of the condition.
8. The CONTRACTOR shall take immediate action to repair all such defects including excessive infiltration at any specific location, even though the infiltration limits as herein specified have not been exceeded for the entire length of sewer being inspected.
 - a. Following completion of the repair, the OWNER or the ENGINEER, at their discretion, may require a second television inspection of any repaired areas. The CONTRACTOR shall arrange for and pay all costs involved in performing this re-inspection.
9. As a part of the television inspection, the precise location of each wye shall be noted in relation to the downstream manhole. These locations shall be entered on the Wye Location Sheet as supplied by the ENGINEER and verified by comparison with the locations as established at the time of construction.
 - a. Any discrepancies in location between the field location record and the television inspection record shall be reconciled and the proper location of the wye determined as a part of the television inspection.
10. Two (2) copies of all notes, photographs, wye locations and other pertinent information shall be made as a part of the television inspection.
 - a. One (1) set of this information shall be turned over to the representative of the ENGINEER upon the completion of the inspection of each line.
 - b. The second copy of the information shall be held by the television inspection company until completion of the project, at which time it shall be neatly assembled and turned over to the ENGINEER as a complete, comprehensive report on the television inspection of the project.
11. Television inspection shall be recorded and shall be submitted in the format(s) as specified by the ENGINEER.
 - a. DVD Disk
 - 1) Audio/video route survey submission shall be on DVD media meeting the following specifications:
 - (a) DVD-R or DVD+R, 4.7GB, single layer
 - (b) DVD – Video
 - (c) Highest available bit rate (6-9 Megabit), 60 fields per second interlaced video
 - (d) Audio Encoding: Uncompressed stereo wave or stereo Dolby Digital (256 kilobit or better)
 - (e) 4x3 (720x480 pixels)
 - 2) No Macrovision or other copy protection encoding. No region code or region code 1.
12. Television inspection shall be considered completed when the necessary construction repairs have been made and the installation retelevized when required, and the system is acceptable for the testing phase.

H. Testing

1. The CONTRACTOR shall provide the necessary supervision, labor, tools, equipment and the materials necessary for the tests which shall be conducted in the presence of the ENGINEER. The ENGINEER shall be notified two (2) working days in advance of all testing. The following tests shall be performed and approved prior to placing any system in service:
 - a. Leakage tests shall be conducted on all new sewer lines and existing lines which have not been previously approved. All sewers shall be subjected to air, exfiltration or infiltration tests, or a combination of same, prior to acceptance.
 - 1) All sewers over 24 inch diameter shall be subjected to infiltration tests.
 - 2) All sewers of 24 inch diameter or smaller, where the groundwater level above the top of the sewer is over 7 feet, shall be subjected to infiltration tests.
 - 3) All sewers of 24 inch diameter or less, where the groundwater level above the top of the sewer is 7 feet or less, shall be subjected to air tests or exfiltration tests.
 - b. Exfiltration/Infiltration Test
 - 1) Exfiltration and Infiltration testing will be performed in accordance with ASTM C1091 for vitrified clay lines, C969 for precast concrete lines, F2487 for HDPE lines, or other appropriate standard except as specified herein.
 - 2) If an exfiltration test is performed, the maximum exfiltration rate shall be the same as the permitted from infiltration.
 - (a) For the purposes of exfiltration testing, the internal water level shall be equal to the external water level plus 7 feet as measured from the top of pipe, and the elevation must be at least as high as the highest house service.
 - 3) Maximum allowable infiltration shall not exceed 100 gallons per inch of diameter per mile of pipe between manholes per 24 hours for any section of the system and shall include the infiltration from all manholes and other appurtenances.
 - c. Air Test
 - 1) The procedure for air testing of sewers shall be in accordance with ASTM C828 for Vitrified Clay Pipe, and ASTM F1417 for Plastic Pipe, except as follows:
 - (a) All house leads shall be properly plugged and blocked to withstand the air pressure. The sewer line shall be tested in increments between manholes. The line shall be cleaned and plugged at each manhole.
 - (1) Such plugs shall be designed to hold against the test pressure and shall provide an airtight seal. One (1) of the plugs shall have an orifice through which air can be introduced into the sewer. An air supply line shall be connected to the orifice.
 - (2) The air supply line shall be fitted with suitable control valves and a pressure gauge for continually measuring the air pressure in the sewer.
 - (3) The pressure gauge shall have a minimum diameter of 3-1/2 inch and range of 0 to 10 psi. The gauge shall have minimum divisions of 0.10 psi and an accuracy of ± 0.04 psi.
 - (b) The sewer shall be pressurized to an initial test pressure of 4 psi greater than the greatest back pressure caused by groundwater over the top of the sewer pipe.
 - (1) At least two (2) minutes shall be allowed for the air pressure to stabilize.

- (2) If necessary, air shall be added to the sewer to maintain a pressure within 1 psi of the initial test pressure.
 - (c) After the stabilization period, the air supply control valve shall be closed so that no more air will enter the sewer. The sewer air pressure shall be noted and timing for the test begun. The test shall not begin if the air pressure is not within 1 psi of the initial test pressure.
 - (d) The time required for the air pressure to decrease 1 psi during the Test shall not be less than the time calculated from Table 1 and the Appendices of the applicable ASTM standard as noted above.
 - (e) Manholes on sewers to be subjected to air tests shall be equipped with a capped pipe nipple extending through the manhole wall and at an elevation equal to the top of the sewer pipe. See Part 2 of this specification.
 - (1) Prior to the air test, the groundwater elevation shall be determined by blowing air through the pipe nipple to clear it and then connecting a clear plastic tube to the pipe nipple.
 - (2) The tube shall be suspended vertically in the manhole and the groundwater elevation determined by observing the water level in the tube.
 - (3) The air test pressure shall be adjusted to compensate for the maximum groundwater level above the top of the sewer pipe to be tested.
 - (4) After all tests are performed and the sewer is ready for final acceptance, the pipe nipple shall be removed and the hole in the manhole wall shall be plugged with hydraulic cement.
2. If a sewer fails to pass any of the previously described tests, the CONTRACTOR shall determine the location of the leaks, repair them and retest the sewer. The tests shall be repeated until satisfactory results are obtained.

3.22 DEFLECTION TEST FOR PLASTIC PIPE

- A. Plastic pipe shall be tested for deflection, but no sooner than 30 days following the backfilling of the pipe.
- B. Maximum allowable deflection (reduction in vertical inside diameter) shall be five (5) percent. Locations with excessive deflection shall be excavated and repaired by re-bedding and/or replacement of the pipe.
- C. Optional devices for testing include a deflectometer, calibrated television or photography, or a properly sized "go, no-go" mandrel or sewer ball. Mandrel shall have a minimum of nine (9) legs.

END OF SECTION

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SECTION 33 41 00 STORM UTILITY DRAINAGE PIPING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section includes storm sewer Work indicated on the Plans complete with pipes, joints, structures, pipe bedding, final inspection and appurtenances.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 22 00 - Unit Prices
- B. Section 01 33 00 - Submittal Procedures
- C. Section 03 30 00 - Cast-in-Place Concrete
- D. Section 03 60 00 - Grouting
- E. Section 31 23 19 - Dewatering
- F. Section 31 23 16 - Structural Excavation and Backfill
- G. Section 31 23 33 - Trenching and Backfilling

1.03 REFERENCE STANDARDS

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. AASHTO M 36: Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains
 - 2. AASHTO M 167/M 167: Standard Specification for Corrugated Steel Structural Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches
 - 3. AASHTO M 196: Standard Specification for Corrugated Aluminum Pipe for Sewers and Drains
 - 4. AASHTO M 245: Standard Specification for Corrugated Steel Pipe, Polymer- Precoated, for Sewers and Drains
 - 5. AASHTO M 252: Standard Specification for Corrugated Polyethylene Drainage Pipe
 - 6. AASHTO M 274: Standard Specification for Steel Sheet, Aluminum-Coated (Type 2), for Corrugated Steel Pipe
 - 7. AASHTO M 278: Standard Specification for Class PS46 Poly(Vinyl Chloride) (PVC) Pipe
 - 8. AASHTO M 330: Standard Specification for Polypropylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter
 - 9. ASTM A48/A48M: Standard Specification for Gray Iron Castings
 - 10. ASTM A615/A615M Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - 11. ASTM A1064/A1064M: Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
 - 12. ASTM C12: Standard Practice for Installing Vitrified Clay Pipe Lines
 - 13. ASTM C14: Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
 - 14. ASTM C55: Standard Specification for Concrete Building Brick

15. ASTM C76: Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
16. ASTM C139: Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
17. ASTM C150/C150M: Standard Specification for Portland Cement
18. ASTM C361: Standard Specification for Reinforced Concrete Low-Head Pressure Pipe
19. ASTM C425: Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings
20. ASTM C443: Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
21. ASTM C478/C478M: Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
22. ASTM C507: Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
23. ASTM C700: Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
24. ASTM C877: Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections
25. ASTM C990: Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
26. ASTM C1433: Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers
27. ASTM C1577: Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers Designed According to AASHTO LRFD
28. ASTM D3212: Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
29. ASTM D4101: Standard Classification System and Basis for Specification for Polypropylene Injection and Extrusion Materials
30. ASTM F477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
31. ASTM F949: Standard Specification for Poly(Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings
32. ASTM F2881/F2881M: Standard Specification for 12 to 60 in. [300 to 1500 mm] Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications
33. American Concrete Pipe Association (ACPA)
34. Michigan Department of Transportation, Standard Specifications for Construction, latest edition (MDOT)

1.04 SOURCE QUALITY CONTROL

- A. Laboratory test not less than one (1) percent, with a minimum of three (3) pieces each size, material and class of gravity pipe required in the Work.

1.05 SUBMITTALS

- A. Submit a complete field report of the location of all wye openings and sump pump discharge leads to the Engineer at the end of each sewer section of the Project or on the last day of each week, whichever occurs first.

- B. Submit two (2) copies of the laboratory test reports required per Part 1, Source Quality Control, of this Section to the Engineer.
- C. Complete Shop Drawings for all manhole tees shall be submitted to the Engineer.
- D. Submit shop drawings and design information for all precast concrete box sections.

1.06 STORAGE OF MATERIALS

- A. Piping material shall not be stacked higher than 4 feet or as recommended by the manufacturer, whichever is lowest. Suitable racks, chairs, and other supports shall be provided to protect preformed pipe mating surfaces from damage. Store bottom tiers off the ground, alternate tiers and chock tier ends.
- B. Jointing and sealing materials used in the storm sewer system shall be protected from sunlight and stored in as cool and clean a place as practicable until ready for application.

1.07 HANDLING OF MATERIAL

- A. Load and unload materials using suitable approved equipment. Material shall not be dropped, bumped or allowed to impact against itself. Damaged material shall be rejected by the Engineer.
- B. Lifting devices shall be suited to the Work and shall protect surfaces from damage.

PART 2 PRODUCTS

2.01 MATERIALS

- A. It is the intent of the Articles in Part 2 of this specification section is to specify in detail the various types of sewer pipe, joints, manholes, etc. which have been indicated throughout the Plans and Specifications. These Articles shall not be construed as allowing any alternate type of material to that which is indicated on the Plans or elsewhere in the Specifications.

2.02 CLAY PIPE

- A. Clay pipe shall conform to ASTM C700, extra strength vitrified clay pipe.
- B. Premium joints shall be compression type joints conforming to ASTM C425.
- C. When not specified, joints shall be made with cold applied pipe joint sealer. See Part 2 of this Section for requirements for cold applied pipe joint sealer.

2.03 NONREINFORCED CONCRETE PIPE SYSTEMS

- A. Pipe shall conform to ASTM C14, Class III nonreinforced concrete sewer pipe.
- B. When not specified, pipe joints shall be made with cold applied pipe joint sealer. Part 2 of this Section for requirements for joints.

2.04 REINFORCED CONCRETE PIPE

- A. Reinforced concrete pipe shall conform to ASTM C76. Pipe sizes 12 to 30 inch diameter shall be Class II thru V, Wall B or Wall C, circular reinforced. Pipe sizes 36 to 108 inch diameter shall be Class I through V, Wall B or Wall C, circular reinforced or elliptical reinforced.
- B. When elliptical reinforcement is used, the following method of indexing the steel and the pipe barrel shall be used.
 - 1. A dummy lift pin form shall be set in the outer pipe wall form projecting into the pipe wall a minimum of 1-3/4 inch and a maximum of . An additional spacer chair shall be welded to the elliptical steel cage at the proper location so as to engage the dummy lift pin form during the pipe casting operation.
 - 2. It is the intent of the spacer chair and dummy lift pin arrangement to provide a means of assuring the final position of the elliptical steel cage within the barrel of the pipe and, further, for providing a means of indexing the pipe in the field to assume proper placement of the pipe.

3. Prior to shipment of the elliptically reinforced pipe, they shall be striped along the inside top with a minimum 1 inch wide indelible marker so that final inspection of the pipe orientation can be made following completion of the installation.
- C. For circular pipe 114 inch or larger in diameter, the design information in accordance with Section 6 of ASTM C76, shall be submitted to the Engineer for approval, prior to fabrication.
- D. The design of all pipes shall meet the d-load requirements for the class of pipe indicated on the Plans.
- E. When not specified, pipe joints shall be made with cold applied pipe joint sealer.

2.05 REINFORCED CONCRETE ELLIPTICAL PIPE

- A. Reinforced concrete elliptical pipe shall conform to ASTM C507.
- B. When not specified, pipe joints shall be made with cold applied pipe joint sealer.

2.06 PRECAST CONCRETE BOX SECTION

- A. Precast concrete box sections shall meet the requirements of ASTM C1433, ASTM C1577 or ACPA "Boxcar". Unless specified otherwise, CONTRACTOR shall use the same design conditions as exist at the time of construction or as planned for future development.

2.07 JOINTS FOR CONCRETE OR CLAY PIPE, BOX SECTIONS AND MANHOLES

- A. Sealed Joints (Cold Applied Pipe Joint Sealer):
 1. When not specified, pipe joints shall be made with cold applied pipe joint sealer.
 2. Cold-applied pipe joint sealer shall conform to MDOT Section 909.09. The bituminous material shall be of such consistency that it may be spread on the joints with a trowel when the temperature of the air is between 20 and 100 degrees F.
 3. The bituminous material shall adhere to the pipe so as to make a watertight seal and shall not flow, crack or become brittle when exposed to the atmosphere.
- B. Premium Joints:
 1. Premium joints for circular pipe shall conform to ASTM C443 limited as follows: Section 5.1 of ASTM C443, "Physical Requirements for Gaskets," shall be replaced with Section 6.9 of ASTM C361, "Rubber Gaskets." Also, Section 5 of ASTM C443 shall be limited to a modified grooved tongue to receive a rubber gasket.
 2. Premium joints for elliptical pipe shall conform to ASTM C877, external sealing bands for non-circular concrete pipe.
 - a. The width of the sealing bands shall be at least equal to twice the depth of the groove. For modified bell tongue and groove pipe, use the next larger gasket.
 - b. The length of the sealing bands shall be equal to the outside circumference of the pipe at its largest diameter plus an amount equal to the width of the gasket to be used.
 3. Only lubricant, as supplied by the pipe manufacturer, shall be used on the groove and on the tongue in making up joints, and the joints shall be coupled in accordance with the pipe manufacturer's requirement.
- C. Preformed Flexible Joint Sealant:
 1. Butyl Rubber Sealant complying with ASTM C990.
- D. The inside annular space of all concrete pipe 36 inch diameter (or equivalent) and larger shall have the inside annular space filled with cement mortar and troweled flush. Mortar shall consist of 1-part Portland cement and two (2) parts of plaster sand. Mortar for inside joints shall be mixed with only enough water for "dry packing."

2.08 CORRUGATED METAL PIPE

- A. Galvanized Corrugated Metal Pipe:
 - 1. Corrugated galvanized steel pipe with circular cross section and corrugated galvanized steel pipe with pipe-arch shape shall conform to the requirements of AASHTO M 36, and as specified in MDOT Section 909.05.
 - 2. Helical corrugated pipe shall have a minimum of two (2) circumferential corrugations rerolled on each end of each section of pipe.
- B. Polymeric Coated Corrugated Galvanized Steel Pipe:
 - 1. Polymeric coated corrugated galvanized steel pipe with circular cross section and polymeric coated corrugated galvanized steel pipe with pipe-arch shape shall conform to the requirements of AASHTO M245, and as specified in MDOT Section 909.05.
 - 2. Helical corrugated pipe shall have a minimum of two (2) circumferential corrugations rerolled on each end of each section of pipe.
- C. Aluminized Type 2 Corrugated Metal Pipe:
 - 1. Type 2 aluminized corrugated steel pipe with circular cross section and corrugated steel pipe with pipe-arch shape shall conform to the requirements of AASHTO M 36, AASHTO M 274, Type 2 and as specified in MDOT Section 909.05.
 - 2. Helical corrugated pipe shall have a minimum of two (2) circumferential corrugations rerolled on each end of each section.
- D. Corrugated Aluminum Alloy Pipe:
 - 1. Corrugated aluminum alloy pipe with circular cross section and corrugated aluminum alloy pipe with arch-pipe shape shall conform to the requirements of AASHTO M196 and MDOT Section 909.05.
- E. Joints for Corrugated Metal Pipe:
 - 1. The joints for corrugated metal pipe shall be made by use of coupling bands. The coupling bands shall be of the same material as specified for the pipe and shall prevent infiltration of the side fill material.
 - a. Coupling bands shall be corrugated to match the corrugations of the pipe to be jointed, and shall include two (2) "O" ring neoprene gaskets for each joint. Dimple bands shall not be used.
 - b. All joints shall be wrapped with a 3 foot wide geotextile filter fabric centered on the joint.
 - 2. When called for in the Contract Documents, joints shall have bell and spigot coupling system and rubber gasketed joint.

2.09 DUAL WALL CORRUGATED PVC PIPE – SMOOTH INTERIOR

- A. Pipe shall be a single extrusion of PVC with smooth interior and corrugated outer walls. Corrugated outer profile shall be annular and seamless.
- B. Pipe and fittings shall be in accordance with ASTM F949. Joints shall be bell and spigot type with a elastomeric gasket meeting the requirements of ASTM F477 and be suitable for storm sewer service.
- C. Wyes or tees shall be a molded wye or tee fitting per ASTM F949, with gasketed joints on each end suitable for directly inserting in the mainline pipe. Branch connection fitting shall be a gasketed joint suitable for the house lead pipe specified. Saddle connections are not allowed.
- D. Acceptable manufacturers of Dual wall corrugated pipe include Contech A2000, Uponor ETI Ultra-Corr or Engineer approved equal.

2.10 CORRUGATED POLYETHYLENE PIPE

- A. Smooth-Lined Corrugated Polyethylene Pipe:
 - 1. Smooth lined corrugated polyethylene pipe shall meet the requirements of MDOT section 909.06 and AASHTO M 252, Type S for sizes 4 to 10 inch diameter, and AASHTO M 294, Type S for 12 to 48 inch diameter.
 - 2. Fittings shall conform to the corresponding pipe specification and be constructed of the same material classification as the pipe. Fittings shall be welded on the interior and exterior at all junctions.
 - 3. Joints shall be bell & spigot type with rubber gaskets on both sides of the joint conforming to MDOT section 909.03 and ASTM F477. Split collar couplers are not allowed. Joints shall be watertight meeting the performance requirements of ASTM D3212.
- B. Corrugated Plastic Edge Drain / Underdrains.
 - 1. Corrugated plastic tubing for edge drains or underdrains shall meet the requirements of AASHTO M 252 for polyethylene tubing. Pipe shall be wrapped in a Geotextile Pipe Wrap per MDOT Section 910.03.A.

2.11 SMOOTH PLASTIC PIPE

- A. Smooth plastic pipe for underdrains shall be polyvinyl chloride PVC meeting the requirements of AASHTO M 278. Pipe shall be wrapped in a Geotextile Pipe Wrap per MDOT Section 910.03.A.

2.12 DUAL WALL CORRUGATE POLYPROPYLENE PIPING

- A. Dual Wall Corrugate Polypropylene Pipe shall have a smooth interior and annular exterior corrugations. Pipe 12 through 60 inch diameter shall meet the requirements of ASTM F2881/F2881M or AASHTO M 330.
- B. Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M 330, Section 6.1.
- C. Pipe shall be joined using a bell & spigot joint meeting the requirements of ASTM F2881/F2881M or AASHTO M 330. The joint shall be watertight according to the requirements of ASTM D3212.
- D. Gaskets shall meet the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A manufacturer approved joint lubricant shall be used on the gasket and bell during assembly.
- E. Fittings
 - 1. Fittings shall conform to ASTM F2881/F2881M or AASHTO M 330. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM D3212.

2.13 STRUCTURAL PLATES FOR FIELD ASSEMBLY OF PIPE, PIPE-ARCHES, AND ARCHES

- A. The plates, bolts and nuts to be used in field assembled circular pipe, pipe-arches and arches shall meet all applicable requirements of AASHTO M 167M/M 167 and as specified in MDOT Section 909.

2.14 END SECTIONS

- A. The precast concrete end section shall conform to ASTM C76, Class II and as specified in MDOT Section 909.04. The joint for connection to pipe shall be by means of a standard tongue and groove with cold-applied pipe joint sealer. See Part 2 of this Section for requirements for the cold-applied pipe joint sealer.

- B. Metal end sections shall conform to MDOT 909.05. See Part 2 "Corrugated Metal Pipe" for requirement for joints for end sections.

2.15 STORM STRUCTURES

- A. Materials for storm sewer structures shall conform to the requirements indicated on the Plans and as specified below.
- B. Concrete Brick:
 - 1. Concrete brick shall be ASTM C55, Grade S-II, solid units of nominal 3 inch thickness.
- C. Concrete Block:
 - 1. Block shall conform to ASTM C139, manufactured of Portland cement conforming to ASTM C150/C150M, Type II. Blocks shall be solid curved blocks with the inside and outside surfaces parallel and curved to the required radii. The blocks shall have a groove or other approved type of joint at the ends.
 - a. Blocks intended for use in the cones or tops of manholes shall have such shape as may be required to form the structure as indicated on the Plans.
- D. Precast Concrete:
 - 1. Precast concrete manhole, flat top slabs, risers, cone, bases, grade rings, transition sections and bottom sections shall conform to ASTM C478/C478M, and shall be circular with circular reinforcement.
 - a. For depths greater than 32 feet, the manhole shall be designed for the earth loading at the design depth of bury with a factor of safety of 1.5.
 - 2. Base slab shall be minimum 8 inches thick for depths up to 25 feet and minimum 12 inches thick for depths greater than 25 feet.
 - 3. Transition sections, reducers and flat top slabs shall be designed for the earth loading at the design depth of bury with a factor of safety of 1.5.
 - 4. Precast concrete manhole tee units shall conform to ASTM C76, Class IV and shall be circular with circular reinforcement. Shop Drawings shall be provided for all manhole tees.
 - 5. The joints on the precast manhole tee shall be the same as the joints on the storm sewer section.
- E. Manhole Steps:
 - 1. Cast iron manhole steps shall conform to ASTM A48/A48M, Class 30, gray iron with a minimum cross section dimension of 1 inch in any direction.
 - 2. Steel reinforced plastic steps shall be of suitably approved co-polymer polypropylene conforming to ASTM D4101, PP0344B33534Z02 with 1/2 inch minimum diameter deformed reinforcing bar conforming to ASTM A615/A615M, Grade 60.
 - 3. Manhole steps shall be of the type and size indicated on the Plans and shall comply with applicable occupational safety and health standards. Manhole steps shall be installed at locations indicated on the Plans.
- F. Frames and Covers:
 - 1. Frames and covers for manholes, catch basins, and inlets shall conform to ASTM A48/A48M, Class 30, gray iron and shall be of the types and sizes as indicated on the Plans. The castings shall be neatly made and free from cracks, holes and other defects.
 - 2. Surfaces of casting shall be ground to assure proper fit and to prevent rocking.

2.16 CONCRETE

- A. The concrete shall conform to MDOT Section 1004, use 3,500 psi strength concrete; Type IA cement; MDOT 6A coarse aggregate; MDOT 2NS fine aggregate; 3 inch maximum slump; no admixtures without the Engineer's approval.

2.17 CONCRETE REINFORCEMENT

- A. In accordance with MDOT Section 905, use ASTM A615/A615M, Grade 60 for bars and ASTM ASTM A1064/A1064M for welded wire fabric.

EXECUTION

3.01 VERIFICATION OF EXCAVATION AND BEDDING

- A. Prior to the installation of any storm sewer piping, structures, or materials, examine all trenches and other excavations for the proper grades, lines, levels and clearances required to receive the new Work.
- B. Ascertain that all excavation bottoms, compacted subgrades and pipe bedding are adequate to receive the storm sewer materials to be installed.
- C. Correct all defects and deficiencies before proceeding with the Work.

3.02 EXISTING STORM SEWERS AND DRAINS

- A. Expose the existing storm sewer and structures to which the new Work is to be connected and notify the Engineer of same. Engineer will verify the vertical and horizontal locations of the existing system and shall inform the Contractor as to the necessary adjustments required to align the new storm sewer Work with the existing system.

3.03 PREPARATION

- A. The outside surface of the spigot end and the inside surface of the bell end of the pipe shall be cleaned and free of any foreign materials, other than the sealant recommended by the manufacturer, prior to installation.
- B. Pipe, frames, covers, accessories, and appurtenances shall be examined carefully for damage and other defects immediately prior to installation. Defective or damaged material shall be rejected and removed from the Project by the Contractor.

3.04 INSTALLATION - GENERAL

- A. Each section of pipe, when placed to grade and line, shall have firm bearing on the trench bedding throughout its length.
- B. Cutting of pipe shall be done with approved tools and by approved methods suitable for the pipe material. Pipe cutting methods that produce a smooth, square-cut end without damage to the pipe and that minimize air-borne particles, shall be employed.
 - 1. Pipe cutting shall be performed using the recommendations of the manufacturer of the type of the pipe materials being cut and according to the best trade practices.
 - 2. When cutting pipe, care shall be taken to prevent damage to the interior and exterior surfaces. Damage to either shall be cause for rejection of a complete section of pipe.
- C. During the preparation of the pipe bedding and until the trench has been satisfactorily backfilled, the trench shall be kept free of water. A dewatering system, in accordance with Section 31 23 19 shall be provided and maintained by the Contractor. The dewatering system shall remain in operation until the trench is backfilled.
- D. Backfill shall be as indicated on the Plans and as specified in Section 31 23 33.

3.05 PIPE LAYING

- A. Installation of pipe shall conform to ASTM C12, and as recommended by the pipe manufacturer.

- B. The pipe shall be protected during handling against impact shocks and free fall. Hooks shall not be permitted to come in contact with premolded joint surfaces.
- C. Pipes having premolded joint rings or attached couplings shall be handled so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material.
- D. Care shall be taken to avoid dragging any pipe on the ground or allowing it to be damaged by contact with gravel, crushed stone, or other hard objects.
- E. Pipe shall be laid to the line and grade called for on the Plans. Each pipe as laid, shall be checked by the Contractor with line and grade pole or laser system to insure that this result is obtained. When employing a laser system, the Contractor shall have an independent and alternate means of checking the line and grade.
- F. Construction shall begin at the outlet end and proceed upgrade with spigot ends pointing in direction of flow. Bell holes shall be excavated so that the full length of the barrel will bear uniformly on the bedding material.
- G. Lubricants, primers or adhesives as recommended by the pipe or joint manufacturer shall be used immediately prior to jointing.
- H. The pipe shall be centered in the bells or grooves and pushed tight together to form a smooth and continuous invert. After laying of pipe, care shall be taken so as not to disturb its line and grade. Pipe found off grade or out of line shall be re-laid properly by the Contractor.
- I. Mechanical means shall be used for pulling home all pipe where manual means will not result in pushing and holding the pipe home. Mechanical means shall consist of a cable placed inside of the pipe with a suitable winch, jack, or come along for pulling the pipe home and holding the pipe in position.
- J. Circular concrete pipe with elliptical reinforcement shall be installed with the lift holes to the top of the pipe. The manufacturer's marks designating the top and bottom of the pipe shall not be more than five degrees from the vertical plane through the longitudinal axis of the pipe. After the pipe is installed, the lift holes shall be sealed with suitable concrete plugs.
- K. Type HE elliptical pipe shall be installed with the longer axis placed horizontally within a tolerance of $\pm$ five degrees.
- L. Type VE elliptical pipe shall be installed with the longer axis placed vertically within a tolerance of $\pm$ five degrees.
- M. The finished work shall be straight and shall be sighted through between manholes.

3.06 PIPE BEDDING

- A. After the bottom of trench has been excavated the pipe bedding material will be installed in accordance with Section 31 23 33. The pipe shall then be installed strictly in accordance with the manufacturer's recommendations.
- B. After the pipe is laid, the bedding shall be continued above the pipe as specified in Section 31 23 33. Particular care shall be taken to assure filling and tamping all spaces under, around and above the top of the pipe.
- C. A continuous and uniform bedding as specified in Section 31 23 33, shall be provided in the trench for all buried pipe.

3.07 UNDERDRAINS

- A. The pipe shall be laid in close conformity with the lines or grades shown on the Plans or established by the Engineer.
- B. The upgrade ends of all underdrains shall be closed with suitable plugs to prevent entry of soil or other foreign material.
- C. Perforated pipe shall be laid with the perforations down.

- D. Underdrains shall be bedded in MDOT open graded drainage course material. The bedding shall have a minimum thickness beneath the pipe of 6 inches, a minimum width of 6 inches on each side of the pipe and extend to a level not less than 12 inches above the top of the pipe.
- E. The bedding shall be placed equally on both sides of the underdrain at the same time. Staking or other methods to restrain the pipe may be necessary during the backfilling operation to maintain the line and grade of the underdrain.
- F. Rodent screens and outlet endings are required for all underdrains which terminate in a ditch or swale.

3.08 STORM STRUCTURES

- A. Construct storm sewer manholes, catch basins, inlets and other structures to the grades, lines and levels indicated on the Plans and as specified. Structures shall be complete with concrete bases, reinforcing, frames, covers, adjustment bricks, etc., as shown and as required for a complete installation.
- B. Storm sewer structures shall conform to the type of material and dimensions indicated on the Plans.
- C. Cast-in-place structures shall be constructed in accordance with Section 03 30 00.
- D. Block Structures:
 - 1. Construct concrete block structures in the locations and according to the details on the Plans. The first course of concrete blocks shall be placed on the prepared base or footings in a full bed of mortar.
 - 2. Mortar joints shall be full and close in all courses. Courses shall be level throughout. Stagger joints in adjoining courses by one-half the length of the block as nearly as practicable. Joints shall be uniform in thickness throughout the structures.
 - 3. Strike all joints and properly point to provide true, smooth surfaces.
 - 4. A cement mortar plaster coat shall be applied to the exterior surfaces of the brick and block sections of all storm structures as indicated on the Plans. Plaster coat shall be 1/2 inch thick.
- E. Precast Concrete Structures:
 - 1. Construct precast concrete structures as detailed on the Plans. Provide mortar joints struck smooth. Provide three (3) to five (5) courses of 8 inch brick or concrete grade rings at top of structure for future adjustment of castings.
- F. Provide and install all frames and covers to the elevations indicated on the Plans. Castings shall be set in a full bed of cement mortar 1/2 inch thick, minimum. Mortar joints shall be struck smooth.
- G. Steps shall be installed at the plant by the manufacturer of precast units. Field install steps for brick, block, or cast in place structures of the types and in the locations indicated on the Plans.
- H. Pipe up to 42 inches in diameter, shall be connected to storm structures using a grouted joint, as indicated on the Plans. The pipe shall be properly supported, so that any settlement will not disturb the connection.
- I. For pipe, in diameter or larger, the pipe shall be installed as an integral part of the manhole (manhole tees) which shall be constructed of 3500 pdi concrete and reinforcing, as indicated on the Plans.
- J. Manhole tees, as indicated on the Plans, may be used for pipe 42 inches in diameter or larger. Connection to manhole tees shall be made using tees and pipe having the same type of joint. The pipe and tee shall be properly supported with concrete as indicated on the Plans.
- K. Sump shall be provided, as indicated on the Plans, in all catch basins and storm manholes having outlets of 18 inches in diameter or less.

- L. Flow channels shall be constructed in all structures not requiring a sump and shall be constructed as indicated on the Plans.

3.09 FIELD QUALITY CONTROL

- A. After all the pipe and structures have been laid, constructed and backfilled, the system shall be final inspected. The sewer system shall be ready for the final inspection within two (2) weeks after the completion of each 2,000 feet section of sewer installed.
- B. The final inspection shall consist of a visible and audible check of the sewers and structures to ascertain that the steps have been placed, all lift holes filled, the channeling of the manhole bottoms completed, all visible or audible leaks stopped, all pipe has been placed straight and true to the proper slopes and elevations, the required brick courses for adjustment have been placed, the frame and cover properly installed, the required end section installed, all trenches and structures backfilled in a workmanlike manner, and that the system has been thoroughly cleaned.
- C. The final inspection shall be considered complete when all the repairs have been made.

3.10 DEFLECTION TEST FOR PLASTIC PIPE

- A. Plastic pipe shall be tested for deflection; but no sooner than 30 days following the backfilling of the pipe.
- B. Maximum allowable deflection (reduction in vertical inside diameter) shall be five (5) percent.
- C. Locations with excessive deflection shall be excavated and repaired by re-bedding and/or replacement of the pipe.
- D. Optional devices for testing include a deflectometer, calibrated television or photography, or a properly sized "go, no-go" mandrel or sewer ball. Mandrel shall have a minimum of nine (9) legs.

3.11 REMOVE STORM SEWER

- A. Excavate and remove the existing storm sewer where indicated on the plans. Bulkhead the opening in storm sewers or structures where the existing storm sewer has been removed.
- B. Where removal of existing storm sewer is occurring in essentially the same location as a new sewer or structure, the removal of the existing sewer is incidental to the project, unless otherwise indicated in the Proposal.

3.12 REMOVE CULVERTS

- A. Excavate and remove culverts where indicated on the plans. Backfill the completed work as specified under "Backfilling Trenches" in Section 31 23 33.

3.13 REMOVE STRUCTURE

- A. Excavate and remove structures where indicated on the plans. Bulkhead the ends of any sewers remaining in place. Backfill the completed work as specified under "Backfilling Trenches" in Section 31 23 33.
- B. Removal of existing storm structures is incidental to the project if a new structure or sewer is being constructed in essentially the same location; unless otherwise indicated in the Proposal.

3.14 REMOVE AND REPLACE STORM SEWER

- A. Remove and replace storm sewer shall consist of the complete removal and disposal of the existing sewer and replacement with the size and type of sewer as called for on the plans or specified.
- B. Materials and installation shall be in accordance with the requirements of this section and Section 31 23 33, as applicable.

3.15 REMOVE AND REPLACE STORM STRUCTURE

- A. Remove and replace storm structure shall consist of the complete removal and disposal of the existing structure and replacement with the size and type of structure as called for on the plans or specified.
- B. Materials and installation shall be in accordance with the requirements of this section and Section 31 23 33, as applicable.

END OF SECTION

SECTION 33 46 69 GREEN INFRASTRUCTURE STORMWATER MANAGEMENT SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes furnishing all labor, equipment, tools and materials for the construction of the green infrastructure stormwater management systems as shown on the plans.
- B. Items covered in this section include:
 - 1. Bioretention Soil Mixture
 - 2. Green Infrastructure Stormwater Management Systems Piping
 - 3. Trash Guard Protection Insert
 - 4. Geotextile Separator Fabric

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01 3300: Submittal Procedures
- B. Section 01 5713: Temporary Erosion and Sedimentation Control

1.03 SECTION 31 2200: GRADING

- A. Section 32 9219: Seeding
- B. Section 33 4100: Storm Utility Drainage Piping

1.04 DEFINITIONS

- A. Bioswale – Shallow cell beds graded and landscaped to collect stormwater. Water from across the subject site enters via sheet flow or through a controlled inlet. Much of the cell bed consists of engineered soils and an aggregate storage layer to retain stormwater and allow infiltration into the native soils beneath the bioswale. The overflow riser at one end of the cell bed provides an outfall when the bioswale reaches its design capacity.
- B. Underground Retention – Pipe bundles, single large diameter pipes, chambers.
- C. Shallow Retention – Permeable pavers
- D. Bioretention Soil Mixtures – Custom blends of sand, compost, and other materials.

1.05 SUBMITTALS

- A. General:
 - 1. Submittals shall be provided in accordance with the requirements of the Contract Documents.
 - 2. At least thirty days but no more than 60 days prior to starting work, CONTRACTOR shall submit to ENGINEER samples, certificates, manufacturer's literature, and certified tests for materials specified below.
 - 3. No materials shall be ordered until the required samples, certificates, manufacturer's literature, and test results have been reviewed and approved by ENGINEER. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance.
- B. Bioretention Soil Mixture: Submit to ENGINEER the source/supplier, gradation, maximum density, and a 1-gallon sample in a sealed Zip-Loc bag.
- C. Plant Material: Submit list of sources for all plant materials. Plant Material Sources shall include the names and locations of nurseries proposed as sources of acceptable plant materials and a list of the plants each nursery shall provide. The plant list shall include the botanical and

common name and the size at the time of selection. Inspect all nursery materials to determine that the materials meet the requirements of this section. When utilized, CONTRACTOR shall submit the name and location of the growing nursery from where the plant materials were obtained.

- D. Mulch: Submit to ENGINEER and Landscape Architect the source/supplier and a 1-gallon sample in a sealed Zip-Loc bag.
- E. Compost: A data sheet shall accompany the certification. The data sheet shall show the following:
 - 1. Standard compost total nutrient test results, including N, P, K, Ca, Mg, Mn, Cu, Fe total carbon, pH, as provided by an acceptable testing laboratory
 - 2. Organic content
 - 3. Inert contamination
 - 4. Soluble salts
 - 5. Carbon/Nitrogen ratio
 - 6. Proof of maturity/stability

1.06 REFERENCE STANDARDS

- A. AASHTO M-294
- B. AASHTO T-104; Soundness of Aggregate by use of Sodium Sulfate or Magnesium Sulfate
- C. AASHTO T-289; Determining Ph of Soil for use in Corrosion Testing
- D. ASTM C29, Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
- E. ASTM C330, Lightweight Aggregates for Structural Concrete
- F. ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort
- G. ASTM D2434, Standard Test Method for Permeability of Granular Soils
- H. ASTM D3212, Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
- I. ASTM D4491, Standard Test Methods for Water Permeability of Geotextiles by Permittivity
- J. ASTM D4533, Standard Test Method for Trapezoid Tearing Strength of Geotextiles
- K. ASTM D4632, Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
- L. ASTM D4751, Standard Test Methods for Determining Apparent Opening Size of a Geotextile
- M. ASTM D6241, Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe
- N. ASTM F477, Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

PART 2 PRODUCTS

2.01 BIORETENTION SOIL MIXTURE

- A. CONTRACTOR shall supply and install as directed on the plans for each bioswale an engineered soil mix consisting of the following materials:
 - 1. Soil texture and composition: Homogenous soil mix of 70 percent by volume sand (USDA Soil Textural Classification, ASTM C-33), 10 percent finished compost, and 20 percent screened topsoil.
 - 2. Phosphorus index: Phosphorus content or Phosphorous index (P.I. also known as Mehlich 3 P-index) should result in no less than 10 and no greater than 30. Soils that falls out of

this range shall be rejected.

3. Saturated Conductivity: The media will have 1-2 inches per hour post-installation infiltration rate/hydraulic conductivity, which should be a quality control specification by the supplier.

2.02 AGGREGATE STORAGE LAYER

- A. Aggregate in the storage layer shall be crushed stone with 90% fractured faces, LA Abrasion <40 per ASTM C-131, minimum CBR of 80% per ASTM D-1883.
- B. Do not use rounded river gravel.
- C. All stone materials shall be double washed with less than 1% passing the No. 200 sieve.
- D. Material shall conform to ASTM D 448 gradation as shown in the table below.

Sieve Size	Percent Passing
37.5 mm (1-1/2 inch)	100
25 mm (1 inch)	95 - 100
12.5 mm (1/2 inch)	25 - 60
4.75 mm (No. 4)	0 - 10
2.36 mm (No. 8)	0 - 5

2.03 CHOKER COURSE LAYER

- A. Aggregate for the choker course shall be two layers, the top layer shall be comprised of course sand meeting ASTM C-33 over a layer of Pea Stone (Gravel) meeting ASTM C-127 and C-33 with the gradation as shown in the following table.

Sieve Size	Percent Passing
1/2 in.	100
3/8 in.	85 - 100
No. 4	10 - 30
No. 8	0 - 10
No. 16	0 - 5
No. 200	< 1.0

2.04 CORRUGATED POLYETHYLENE (HDPE) PIPE AND STRUCTURES

- A. Smooth lined corrugated polyethylene pipe shall meet the requirements of AASHTO M252, Type S for sizes 4" to 10" diameter, and AASHTO M294 Type S for 12" to 48" diameter.
- B. Perforated pipe shall be Type SP, Class I
- C. Fittings shall conform to the corresponding pipe specification and be constructed of the same material classification as the pipe. Fittings shall be welded on the interior and exterior at all junctions.
- D. Joints shall be bell & spigot type with rubber gaskets on both sides of the joint conforming to ASTM F477. Split collar couplers are not allowed. Joints shall be watertight meeting the performance requirements of ASTM D3212.
- E. Structures:
 1. High-density polyethylene corrugated exterior/smooth interior pipe. Four inch through ten inch diameters shall meet all the requirements of AASHTO M252 with the addition that the pipe have a smooth interior liner. Twelve inch through 36-inch diameters shall meet all the requirements of AASHTO M294 Type S.
 2. Bottoms, stubs and connections shall be fully fusion welded.

2.05 TRASH GUARD PROTECTION INSERT

- A. Distribution piping from catch basins to underground storage cells shall be protected with Trash Guard "Plus" drainage structure inserts. The inserts can be applied to both existing as well as new inlet structures as may be necessary. Trash Guard is made of 100% recycled HDPE material by "Trash Guard Plus" Incorporated, P.O. Box 10 Roseboro, NC 28382 and distributed by ACF Environmental.
- B. Trash Guard "Plus" shall be installed over the outlet pipe with the catch basin according to the various installation applications provide by the Supplier and shall be installed in such a manner that the unit is securely fastened to the sidewall of the catch basin and completely covers the outlet pipe.

2.06 GEOTEXTILE SEPARATOR FABRIC

- A. Geotextile separation fabric shall consist of needled non-woven polypropylene fibers and meet the following properties:
 - 1. Grab Tensile Strength > 120 lbs
 - 2. Mullen Burst Strength (ASTM-D3786) > 225 psi
 - 3. Flow Rate (ASTM-D4491) > 95 gal/min/ft²
 - 4. UV Resistance after 500 hrs. (ASTM-D4355) > 70%

PART 3 - EXECUTION

3.01 INSTALLATION – GENERAL

- A. For stormwater management system to function properly, compaction of soils must be prohibited during construction and sediment must be prevented from entering the bioswale cells. Location of each cell will be marked by CONTRACTOR prior to start of construction. Equipment shall be kept off the cell footprints before, during, and after construction. CONTRACTOR shall restore all stormwater management systems to their original design criteria after completion of construction and the entire drainage area has been stabilized. Remove all sediment that has accumulated and replace all contaminated materials prior to placing the stormwater management facility into operation.
- B. Sediment can also damage effectiveness of stormwater cells. Cells shall not be constructed until all upstream drainage areas are stabilized, and erosion and sedimentation control practices can prevent all sediment from entering cell during construction and establishment. Erosion and sedimentation control devices will remain in-place upstream of cell at all times during construction and establishment.
- C. Soils shall be de-compacted, prepared and conditioned as noted in the drawings and in Section 31 00 00, Earthwork, to provide smooth, uniform, lightly graded, organic soil beds prior to plant installation. Dense, heavy, compacted soils, rock, fill, sticks, concrete, or other debris in planting beds will be removed. Construction activities that result in soil compaction, sedimentation, or damage to cells will be repaired and corrected at CONTRACTOR's expense.

3.02 CONSTRUCTION OF BIOSWALES

- A. Prior to beginning construction, clear and grub the site and verify site is ready for installation of stormwater management improvements. Ensure that soil erosion and sedimentation devices in accordance with section 01 57 13, Temporary Erosion and Sedimentation Control are installed and functioning properly.
- B. In the event of any discrepancies, immediately notify ENGINEER. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.
- C. Excavate with excavator operating outside the footprint of the cell. No equipment may enter cell unless approved in advance by ENGINEER. In instances where equipment is allowed within the cell bed, it shall consist of low-impact, lightweight equipment, and the soils underlying the bed of the cell shall be restored to a minimum depth of 6 inches.

- D. Excavate to the necessary depth to construct improvements.
- E. Scarify and loosen the soil to a depth of 6" below the bottom of excavated areas to receive the stormwater management cell.
- F. CONTRACTOR shall excavate and remove existing soil material as delineated on the plans.
- G. Completed Work shall be protected at all times during construction of areas adjoining the stormwater management systems improvements. Damaged improvements shall be removed and replaced to the satisfaction of ENGINEER at no additional cost to OWNER.

3.03 CONSTRUCTION OF STORMWATER BIOSWALE CELLS

- A. The infiltration cell (aggregate bed, choker course and bioretention soil mix) shall be placed according to the dimensions shown on the plans.
- B. Stormwater Management System piping shall be installed in accordance with Section 33 41 00, Storm Utility Drainage Piping, except as otherwise shown on the plans and specified herein.
- C. Construct structures of non-perforated HDPE pipe placed vertically as shown on the plans. Connections to the structures shall be heat fused/welded.
- D. Overflow structure and all appurtenances shall be installed according to manufacturers' specifications and as shown on the plans. Structures shall be placed in properly compacted fill and be uniformly bedded to the depth and in the manner specified.
- E. The completed work shall conform to the lines, grades, and elevations shown on the plans
- F. During course of installation, carefully record construction in as-built survey; noting any changes to the limits of excavation and fill; or other stormwater features.

3.04 COMPACTION OF AGGREGATE STORAGE LAYER MATERIALS

- A. Aggregate fill shall be placed in uniform layers. The lift thickness and number of passes by equipment used will be determined by ENGINEER depending on project requirements (i.e. stability, compaction, and density). Place aggregate in horizontal layers that do not exceed 12"-18" loose thickness. Each layer is then compacted using vibratory compaction equipment weighing no more than 12 tons static weight. The minimum number of passes is two. Additional passes may be required and will be determined in the field by ENGINEER to ensure stability of the layer.
- B. In confined areas, vibratory plate compaction equipment shall be used (5 hp to 20 hp) with a minimum of two passes in 6" lifts for a 5 hp plate and 12" lifts for a 20 hp plate.
- C. CONTRACTOR shall take all necessary precautions when working adjacent to the aggregate fill to ensure that the material is not over compacted. Construction equipment, other than for placement and compaction, should not operate on the exposed aggregate fill.

3.05 INSTALLATION OF BIORETENTION SOIL MIXTURE

- A. Install Bioretention Soil Mixture such that machinery does not traverse or compact it once it is placed. Bioretention Soil Mixture shall be boomed in from the side of the cell and hand raked to finish grade.
- B. Bioretention Soil Mixture shall be placed in horizontal layers not to exceed 12 inches in depth for the entire area of the stormwater management facility.
- C. Bioretention Soil Mixture shall be saturated over the entire area of the stormwater facility after each lift is placed to lightly consolidate the Bioretention Soil Mixture. Water for saturation shall be applied by spraying or sprinkling in a manner to avoid separation of the soil mixture components. Saturation of each lift shall be performed in the presence of ENGINEER.
- D. If the Bioretention Soil Mixture becomes contaminated during the construction of the facility, the contaminated material shall be removed and replaced with uncontaminated material at CONTRACTOR's expense.

- E. Final grading of the Bioretention Soil Mixture shall be performed after a 24-hour settling period. Final elevations shall be within 2 inches of elevations shown on the plans.
- F. Bioretention Soil Mixture shall be firmed using one pass of a 50-pound roller to help ensure successful plant establishment.
- G. Following finish grading, CONTRACTOR shall notify ENGINEER that the stormwater basin is acceptable for drainage testing. ENGINEER will direct CONTRACTOR on the procedure to flood the basin. Following evaluation of drainage, ENGINEER shall either approve or reject the basin.
 - 1. If approved, CONTRACTOR will be released to prepare the basin for installation of live plant materials. This will include allowing the basin to dry, following drainage testing, so that installers do not disturb the finish grade of the basin. For purposes of this specification, "dry" will be defined as the point when soils will not stick to the bottom of a shoe or when indentations do not remain after walking in the basin.
 - 2. If rejected, CONTRACTOR will be directed to remediate the basin by removing siltation at the surface, tilling, and amending the soil, removing and replacing the Bioretention Soil Mixture or any other measures necessary to correct the deficiencies.
- H. Vegetative cover shall be established immediately after finish grading and erosion shall be prevented during planting and establishment, including but not limited to installing erosion control blankets, silt fence or straw wattles.

END OF SECTION

Build America, Buy America Act: Buy America Preference Overview for CPD Programs

What is the Buy America Preference?

The Build America, Buy America Act (BABA) requires that all iron, steel, manufactured products, and construction materials used for federally funded infrastructure projects are produced in the United States, unless otherwise exempt or subject to an approved waiver. This requirement is known as the "Buy America Preference (BAP)" and the specific requirements are codified in 2 CFR § 184.

The BAP establishes a domestic preference for construction materials. For more information: hudexchange.info

This BABA CPD Overview Quick Guide provides grantees with the following details about the BAP:

- Products Covered by the BAP
- BAP Applicability to CPD-funded Projects and Activities
- When the BAP Doesn't Apply
- BAP Implementation Timeline for CPD Programs
- Project/Product-Specific Waivers
- Project Implementation and Recordkeeping

Products Covered by the BAP

Products covered under the BAP include:

1. Iron and steel
2. Construction materials
3. Manufactured products

Products should be classified into just one of these categories. The classification must be made based on the product's status when brought to the work site.

Grantees are encouraged to work closely with subrecipients, developers, and contractors to ensure that products used in federally funded infrastructure projects are produced in the United States as required. Federal financial assistance includes grants, cooperative agreements, non-cash contributions or donations, direct assistance, loans and loan guarantees, and other financial assistance.

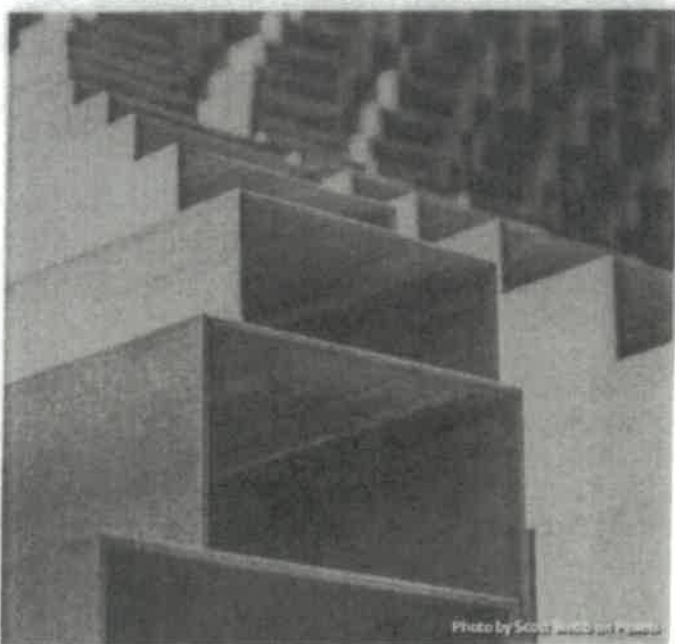
Iron and Steel

What is it?

Items that consist completely or predominantly of iron, steel, or a combination of both. "Predominantly" means the cost of the iron and steel content *exceeds* 50% of the total cost of all the item's components.

Production Requirements

All manufacturing processes, starting from the initial melting stage and continuing through the application of coatings, must occur in the United States.



Construction Materials

What is it?

Articles, materials, or supplies used for construction activities that consist of only one of the items described below. For the purposes of the HUD Phased Implementation Waiver timeline described below, construction materials are divided into two categories: specifically listed construction materials and not listed construction materials.

Specifically Listed Construction Materials: Items include (1) non-ferrous metals; (2) lumber; and (3) plastic- and polymer-based composite building materials, pipe, and tube.

Not Listed Construction Materials: Items include (1) all other plastic- and polymer-based materials (such as polymers used in fiber optic cables), (2) glass, (3) fiber optic cable, (4) optical fiber, (5) engineered wood, and (6) drywall.

Construction Material Standards (2 CFR 184.6)

All manufacturing processes for the construction material must occur in the United States.



Minor additions of materials, supplies, or binding agents to a construction material (such as the binding agent used in engineered wood) do not change the categorization of the construction material.

Manufactured Products¹

What is it?

Manufactured products include articles, materials, or supplies that have either been:

1. Processed into a specific form or shape, or
2. Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

A manufactured product may include components that are construction materials or iron and steel products, unless the manufactured product also meets the definition of iron and steel or construction materials. In such instances, the product should be recategorized in the appropriate category.

Determining the Cost of Components for Manufactured Products (2 CFR 184.5)

Manufactured products must meet two production requirements. First, the final product must be manufactured in the United States. Second, at least 55% of the cost of the components making up the manufactured product must be associated with components that were mined, produced, or manufactured in the United States.

What materials and activities aren't covered by the BAP?

1. Temporary products and materials that are removed at or before project completion, such as temporary scaffolding, equipment, or tools
2. Equipment and furnishings such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of or permanently affixed to the structure
3. Technical assistance and management costs
4. Design and planning costs, project scoping, or advance assistance. However, domestic preferences must be considered in planning to ensure compliance for construction projects e.g., design-build contracts
5. Acquisition and demolition projects where there are no articles, materials, or supplies that are incorporated into an infrastructure project

¹ - Cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives (collectively known as Section 70517(c) materials) are generally exempt from the BAP. However, Section 70517(c) materials may be used to produce a manufactured product, such as pre-cast concrete. Manufactured products that incorporate Section 70517(c) components are subject to the BAP.





BAP Applicability to CPD-funded Projects and Activities

CPD-funded infrastructure projects, as broadly defined by 2 CFR 184, are subject to the BAP once the obligation date has passed according to HUD's Phased Implementation Waiver (see section below), unless the project is covered by another general waiver. For the purposes of the BAP, an infrastructure project is defined as any project that includes construction, alteration, maintenance, or repair of infrastructure regardless of whether infrastructure is the primary purpose of the project.

Examples of CPD-funded activities that may be subject to the BAP:	Examples of CPD-funded activities that may NOT be subject to the BAP:
• Rehabilitation of buildings and real property • Construction of public facilities and improvements, such as water and sewer facilities, streets, sidewalks, neighborhood centers, and the conversion of buildings for eligible purposes • Utility installation or improvements • Water systems (drinking water and wastewater) • Electrical transmission facilities and systems • Broadband infrastructure • Transportation infrastructure	• Acquisition of real property • Relocation and demolition • Public services • Shelter or public facility operating expenses • Supportive services • Short-term payments to prevent homelessness • Special economic development activities • Administrative activities • Disaster and emergency response



Projects that exclusively use CDBG-DR, CDBG-MIT, CDBG-CV, ESG-CV, and/or HOPWA-CV funding are not subject to the BAP because funds for disaster and emergency purposes are exempt from the BAP.

When the BAP Doesn't Apply

In addition to the Phased Implementation Waiver described in the section below, HUD has approved three Department-wide public interest general waivers for BAP applicability. If all the conditions for a general waiver are met, the BAP requirements may be waived for that project, or a portion of the materials used in a project.

CPD grantees can employ these waivers without the need for a formal request to HUD and should maintain records to substantiate the waiver's application to a project. For example, a grantee may write a memo to the project file documenting how it determined that a general waiver applied to a specific project.

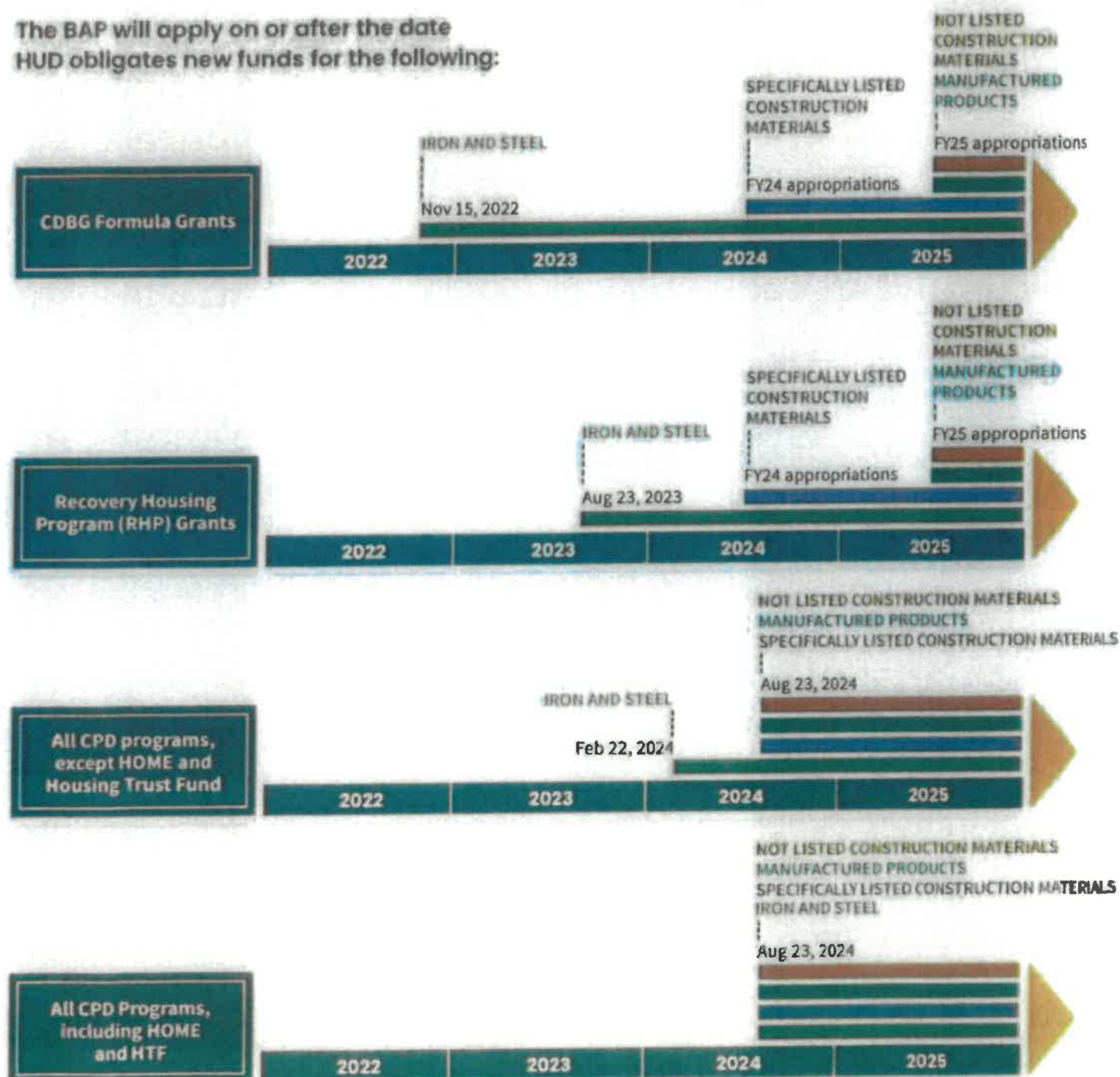
HUD General Waivers	What is it?	Examples
Exigent Circumstances	This public interest general waiver is effective through November 23, 2027, for projects that must be completed immediately to protect life, ensure safety, or prevent the destruction of property	A HOME-funded multi-family rental development is damaged by a burst hot water pipe in the middle of winter. Repairs to the damaged structure must be completed immediately to protect the life, safety, and property of the residents of the housing development. Following a tornado, CDBG funds are used to repair public facilities made structurally unsound during the disaster. Stabilizing these buildings is critical to prevent further destruction of property.
De Minimis and Small Grants	This public interest general waiver is effective through November 23, 2027, for projects whose total cost (from all sources) does not exceed the simplified acquisition threshold value (\$250,000). OR If covered BAP materials for a portion of the project comprise no more than 5 percent of the total cost of covered materials used in a project (not to exceed \$1 million), the BAP can be waived for that portion of the project.	A homeless service provider is rehabilitating an emergency shelter to update bathroom facilities. The provider is using \$100,000 in ESG funding for the project and a State grant is contributing an additional \$100,000. Because the total project cost does not exceed \$250,000, the BAP does not apply. A city is using CDBG funds for construction of a playground. The total cost of materials used in the project is \$1 million. The city can source domestic materials for nearly all the items needed for the playground but cannot find a domestically produced equivalent of a particular slide. The slide costs \$20,000. Because this is less than 5% of the total cost of materials used in the project, the city can use the De Minimis Waiver to waive the BAP for the slide. The other materials used in the project still must comply with the BAP.
Tribal Recipients	The BAP does not apply for HUD funds to Tribes, Tribally Designated Housing Entities, and other Tribal Entities covered by this public interest general waiver effective until May 23, 2024.	After receiving Tribal feedback, HUD will implement the BAP through an approach that does not serve as a major barrier to Tribal community efforts to develop infrastructure. HUD's Phased Implementation Waiver does not apply to funds awarded to Tribes.
Pacific Island/Territory Recipients	HUD accepted public comment on a proposed general waiver for Pacific Island/Territory recipients through September 1, 2023.	HUD will consider the public comments received and base its decision for adoption of the BAP in Pacific Island/Territory Communities in a future general waiver published in the Federal Register.

BAP Implementation Timeline for CPD Programs

To facilitate a smooth transition to the BAP requirements, HUD established a Phased Implementation Waiver for its programs based on the date when funds are obligated (i.e., typically the date when HUD executes the grant agreement). As illustrated below, the BAP is phased both by program and the type of product (iron and steel, construction materials, and manufactured products).

HUD chose to initially implement the BAP for all iron and steel products used in CDBG infrastructure projects using funding obligated on or after November 15, 2022. The specific focus on iron and steel in infrastructure projects will gradually extend to encompass the full implementation of the BAP across all HUD programs.

The BAP will apply on or after the date HUD obligates new funds for the following:



Project Examples



Senior Center New Construction

A grantee is using FY2023 CDBG funds (grant agreement executed by HUD in September 2023) to construct a new senior center. Because the project is using funds obligated after November 15, 2022, the grantee must ensure that the iron and steel used in the project complies with the BAP requirements. However, the project does not need to comply with the BAP requirements for construction materials or manufactured products because the funds do not include funding obligated from FY24 or FY25 appropriations.



Single-Family Owner-Occupied Rehab Program

A participating jurisdiction (PJ) operates a single-family owner-occupied rehabilitation program using HOME funds obligated after August 23, 2024. The PJ determines that since the total project costs from all sources for each activity do not exceed \$250,000, individual rehabilitation activities are covered by the Small Grant Waiver and do not need to comply with the BAP.



Project/Product-Specific Waivers

Project/product-specific waivers are available on a limited, case-by-case basis, after HUD's review, a public comment period, and final approval from the Office of Management and Budget's Made In America Office (MIAO). Project-specific waivers are generally available for three reasons:

- **Public interest:** Adhering to the BAP would be inconsistent with the public interest.
- **Nonavailability:** Covered materials are not produced in the USA in sufficient and reasonably available quantities or of a satisfactory quality.

- **Unreasonable cost:** Inclusion of domestically produced covered materials will increase the cost of the overall project by more than 25 percent.

If more than one Federal agency is funding an infrastructure project, project-specific waivers will require coordination among those Federal agencies prior to a determination by the MIAO.

Project Implementation and Recordkeeping

CPD grantees engaging in infrastructure projects must comply with the BAP. Since the terms and conditions of the BAP flow down to subrecipients, the BAP language found in the "Special Conditions" section should be incorporated into all agreements, even if the BAP does not yet apply based on the phased implementation date.

Grantees may want to use activity by grant expenditure reports to help identify which projects might be subject to BAP requirements. In some instances, grantees may need to amend existing agreements or other award documents.

The BAP requirements must be included in the terms and conditions for subrecipient agreements, contracts, subawards, and purchase orders for all infrastructure projects. Grantees must maintain documentation of compliance with BAP requirements or exemption due to a waiver in accordance with program-specific recordkeeping requirements and 2 CFR § 200.334 as applicable to Federal grants.



CPD grantees should retain documentation that demonstrates:

1. *All the iron, steel, manufactured products, and construction materials used in infrastructure projects are produced in the United States in accordance with HUD's Phased Implementation Waiver, or*
2. *The project is covered by a HUD general waiver and is therefore exempt from the BAP, or*
3. *A project/product-specific waiver was reviewed by HUD and approved by the MIAO.*

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Record of Employee Interview Instructions	U.S. Department of Housing and Urban Development Office of Davis-Bacon and Labor Standards	OMB Approval No. 2501-0009 (exp. 12/31/2024)
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Instructions

General:

This form is to be used by HUD and local agency staff for recording information gathered during on-site interviews with laborers and mechanics employed on projects subject to Federal prevailing wage requirements. Typically, the staff that will conduct on-site interviews and use this form are HUD staff and fee construction inspectors, HUD Labor Standards staff, and local agency labor standards contract monitors.

Information recorded on the form HUD-11 is evaluated for general compliance and compared to certified payroll reports submitted by the respective employer. The comparison tests the veracity of the payroll reports and may be critical to the successful conclusion of enforcement actions in the event of labor standards violations. The thoroughness and accuracy of the information gathered during interviews is crucial.

Note that the interview itself and the information collected on the form HUD-11 are considered confidential. Interviews should be conducted individually and privately. All laborers and mechanics employed on the job site must be made available for interview at the interviewer's request. The employee's participation, however, is voluntary. Interviews shall be conducted in a manner and place that are conducive to the purposes of the interview and that cause the least inconvenience to the employer(s) and the employee(s).

Completing the form HUD-11:

Items 1a - 1c: Self-explanatory

Items 2a - 2d: Enter the employee's full name, a telephone number where the employee can be reached, and the employee's home address. Many construction workers use a temporary address in the locality of the project and have a more permanent address elsewhere from which mail may be forwarded to them. Obtain a more permanent address, if available. Ask the employee for a form of identification (e.g., driver's license) to verify their name.

Items 3a - 4c: Enter the employee's responses. Ask the employee whether they have a pay stub with them; if so, determine whether the pay stub is consistent with the information provided by the employee.

Items 5 - 7: Be certain that the employee's responses are specific. For example, job classification (#5) must identify the trade involved (e.g., Carpenter, Electrician, Plumber) - responses such as "journeyman" or "mechanic" are not helpful for our purposes.

Items 8 - 12b: Self-explanatory

Items 13 - 15c: These items represent some of the most important information that can be gathered while conducting on-site interviews. Please be specific about the duties you observed the employee performing. It may be easiest to make these observations before initiating the interview. Please record any comments or remarks that may be helpful. For example, if the employee interviewed was working with a crew, how many workers were in the crew? Was the employee evasive?

The level of specificity that is warranted is directly related to the extent to which interview(s) or other observations indicate that there may be violations present. If interviews indicate that there may be underpayments involving a particular trade(s), the interviewer is encouraged to interview as many workers in that trade(s) that are available.

Items 16 - 17b: The information on the form HUD-11 may be reviewed for general compliance, initially. For example, are the job classification and wage rate stated by the employee compatible with the classifications and wage rates on the applicable wage decision? Are the duties observed by the interviewer consistent with the job classification?

Item 18: Please place here any additional information you may want to document or continuing information from other lines that do not fit in their block space.

Once the corresponding certified payroll reports are received, the information on the HUD-11 shall be compared to the payroll reports. Any discrepancies noted between the HUD-11 information and that on the payroll report shall be noted in Item 16, Remarks. If discrepancies are noted, follow-up actions to resolve the discrepancies must be taken.

Record of Employee Interview

U.S. Department of Housing and Urban Development
Office of Davis-Bacon and Labor Standards

OMB Approval No. 2501-0009
(exp. 12/31/2024)

18. Additional Remarks

CONFIDENTIAL

Record of Employee Interview

U.S. Department of Housing and Urban Development Office of Labor Relations

OMB Approval No. 2501-0009
(exp. 12/31/2013)

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number. The information is collected to ensure compliance with the Federal labor standards by recording interviews with construction workers. The information collected will assist HUD in the conduct of compliance monitoring; the information will be used to test the veracity of certified payroll reports submitted by the employer. **Sensitive Information.** The information collected on this form is considered sensitive and is protected by the Privacy Act. The Privacy Act requires that these records be maintained with appropriate administrative, technical, and physical safeguards to ensure their security and confidentiality. In addition, these records should be protected against any anticipated threats or hazards to their security or integrity that could result in substantial harm, embarrassment, inconvenience, or unfairness to any individual on whom the information is maintained. **The information collected herein is voluntary, and any information provided shall be kept confidential.**

1a. Project Name			2a. Employee Name		
1b. Project Number			2b. Employee Phone Number (including area code)		
1c. Contractor or Subcontractor (Employer)			2c. Employee Home Address & Zip Code		
			2d. Verification of identification? Yes ☐ No ☐		
3a. How long on this job?	3b. Last date on this job before today?	3c. No. of hours last day on this job?	4a. Hourly rate of pay?	4b. Fringe Benefits? Vacation Yes ☐ No ☐ Medical Yes ☐ No ☐ Pension Yes ☐ No ☐	4c. Pay stub? Yes ☐ No ☐
5. Your job classification(s) (list all) --- continue on a separate sheet if necessary					
6. Your duties					
7. Tools or equipment used					
8. Are you an apprentice or trainee?		Y ☐ N ☐	10. Are you paid at least time and ½ for all hours worked in excess of 40 in a week?		Y ☐ N ☐
9. Are you paid for all hours worked?		Y ☐ N ☐	11. Have you ever been threatened or coerced into giving up any part of your pay?		Y ☐ N ☐
12a. Employee Signature			12b. Date		
13. Duties observed by the Interviewer (Please be specific.)					
14. Remarks					
15a. Interviewer name (please print)			15b. Signature of Interviewer		15c. Date of interview

Payroll Examination

16. Remarks

17a. Signature of Payroll Examiner

17b. Date

Previous editions are obsolete

Form HUD-11 (08/2004)

PAYROLL

WAGE AND HOUR DIVISION
Revised December 2008

OMB No. 1235-0008
Expires 09/30/2026

PROJECT OR CONTRACT NO.

[illegible]

Public Burden Statement

{over}

I, _____
(Name of Signatory Party) _____
(Title)

(1) That I pay or supervise the payment of the persons employed by

from the full

(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967, 76 Stat. 357; 40 U.S.C. § 3145), and described below.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

- Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

[illegible]

REMARKS:

NAME AND TITLE

SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 3729 OF TITLE 31 OF THE UNITED STATES CODE.



Section 3 Resource Hub

Section 3 Resource Hub Now Available

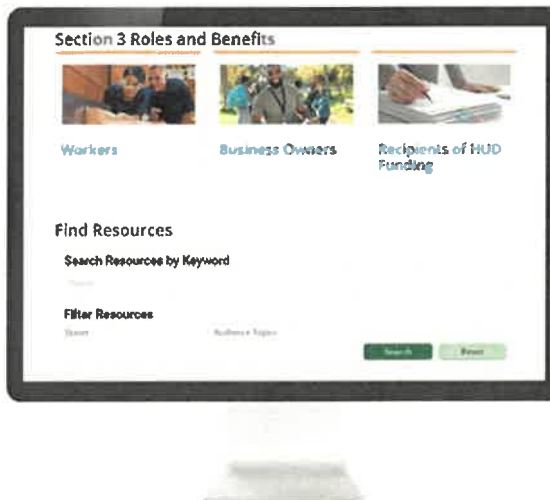
The [Section 3 Resource Hub](#) is a centralized platform that offers a filterable search for state-specific resources, making it easier for users to discover local opportunities for workforce and business development.

How is the Section 3 Resource Hub Helpful to Recipients of HUD Funding?

The Hub helps users understand Section 3 and connect:

- **Workers** with resources needed to obtain employment and training in their state and local community.
- **Businesses** with state and local resources needed to start or grow their business and compete on government contracts.
- **Recipients of HUD funding** with Section 3, business development, workforce development, and contracting resources to support business and workers.

Recipients can also submit suggestions for additional resources to be added to the platform.



[Visit the Section 3 Resource Hub Today](#)



Tips for Marketing to Workers

Recipients can use the following insights to elevate their marketing strategy and drive awareness about the Section 3 Resource Hub to workers seeking information about Section 3, employment, and training opportunities through local community channels.

- **Social Media Campaigns:** Utilize platforms like Facebook, Instagram, and LinkedIn to promote the Resource Hub and its benefit to workers – helping them understand Section 3 and find local job openings and training opportunities. Encourage use of targeted ads to reach specific demographics.
- **Partnerships with Local Organizations:** Collaborate with local partners such as workforce development centers (local workforce investment boards), adult and youth educational organizations (e.g. apprenticeship sponsors), YouthBuild programs, employers and more to promote the Hub and its value and to make connections for employers to support employment and training opportunities. Housing and community development recipients of HUD funding and PHAs can partner and coordinate with one another to promote the Hub and internally with workforce and economic development partners in the community.
- **Email Newsletters:** Create and distribute newsletters to email list serves highlighting the Resource Hub, new and upcoming job Section 3 postings, available training programs, and Section 3 success stories. Encourage workers to reach out to organizations through social media and local events to learn more about Section 3.
- **Workshops and Webinars:** Partner with workforce development partners and employers to host online and in-person workshops on resume building, interview skills, and job search strategies. Promote these events, Section 3, and the use of the Hub through social media and local partners.
- **Leverage Section 3 Resource Hub to build Section 3 worker database for Section 3 projects and/or contracts:** Promote the Hub through the channels outlined above and provide information for how workers can be added to a Section 3 worker database or list and/or be made aware of Section 3 opportunities.
- **Incorporate Section 3 Resource Hub into existing Section 3 plan and procedures:** Update Section 3 plan and procedures to reference the Hub and promote the Hub throughout the life of a Section 3 project and/or contract (e.g. promote Hub during pre-bid meeting, pre-construction conference, prior to contract award and throughout the life of Section 3 projects and/or contracts).



Tips for Marketing to Businesses

Recipients can use the following insights to elevate their marketing strategy and drive awareness about the Section 3 Resource Hub to businesses and entrepreneurs seeking information about Section 3, business development, and government contracting opportunities.

- **Cross promote the Hub:** Promote through existing Minority and Women-owned Business Entity procurement channels and resources.
- **Targeted Email Campaigns:** Send personalized emails to contractors highlighting the benefits of the Hub, including available local resources and as an avenue to facilitate Section 3 opportunities.
- **Networking Events:** Organize events where businesses can learn about the Hub, network with other businesses, and meet potential employees. Recipients are encouraged to partner with organizations that have existing events (internal and external to the organization).
- **Partnerships with Local Organizations:** Collaborate with local partners (e.g. small business development centers, Chamber of Commerce, etc.) to promote the Hub and to make connections for businesses and entrepreneurs that need capacity building resources and/or avenues for facilitating employment, training and contracting opportunities.
- **Email Newsletters:** Create and distribute newsletters to email list serves highlighting the Resource Hub, new and upcoming Section 3 contracting opportunities and capacity building resources. Encourage businesses to reach out to organizations included on the Hub to learn more about securing government contracts and provide contact information for how businesses can learn about Section 3 opportunities.
- **Leverage Section 3 Resource Hub to build Section 3 Business Concern database for Section 3 projects/contracts:** Promote the Hub through the channels outlined above and provide information for how businesses can be added to a Section 3 business concern database or list and how to learn about Section 3 contracting opportunities. Also provide information for how businesses can find eligible Section 3 workers through local employment and workforce development partners.
- **Incorporate into existing plan and procedures:** Update Section 3 plan and procedures to reference the Hub and promote the Hub throughout the life of a Section 3 project and/or contract (e.g. promote Hub during pre-bid meeting, pre-construction conference, prior to contract award and throughout the life of Section 3 projects and/or contracts).

For more information on the regulations and to access training materials, and download sample tools, visit the [Section 3](#) page on the HUD Exchange.



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WAYNE COUNTY

COUNTY KEY

NOT TO SCALE



Lisa Hicks-Clayton
TREASURER

COUNCIL

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**Know what's below.
Call before you dig.**

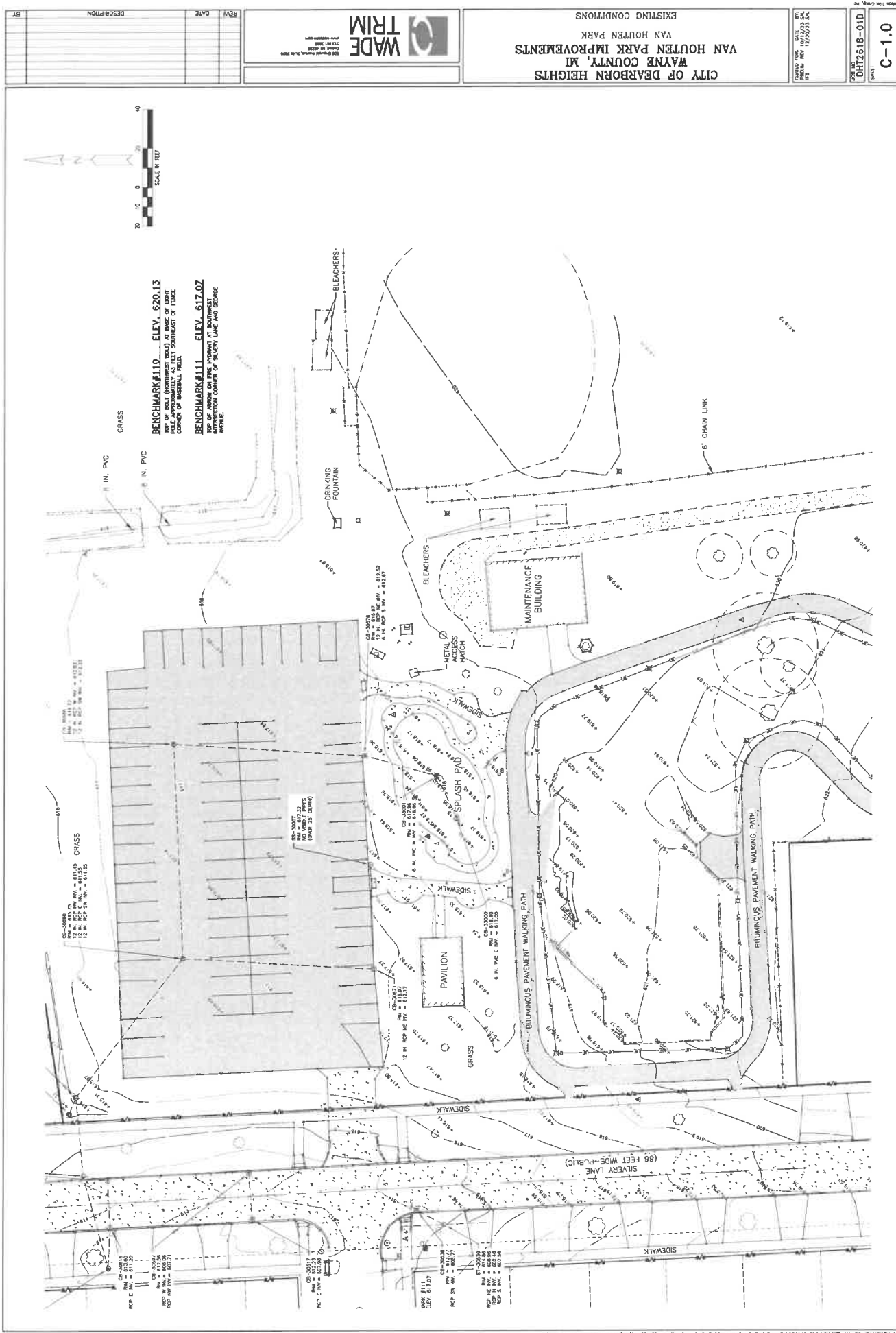
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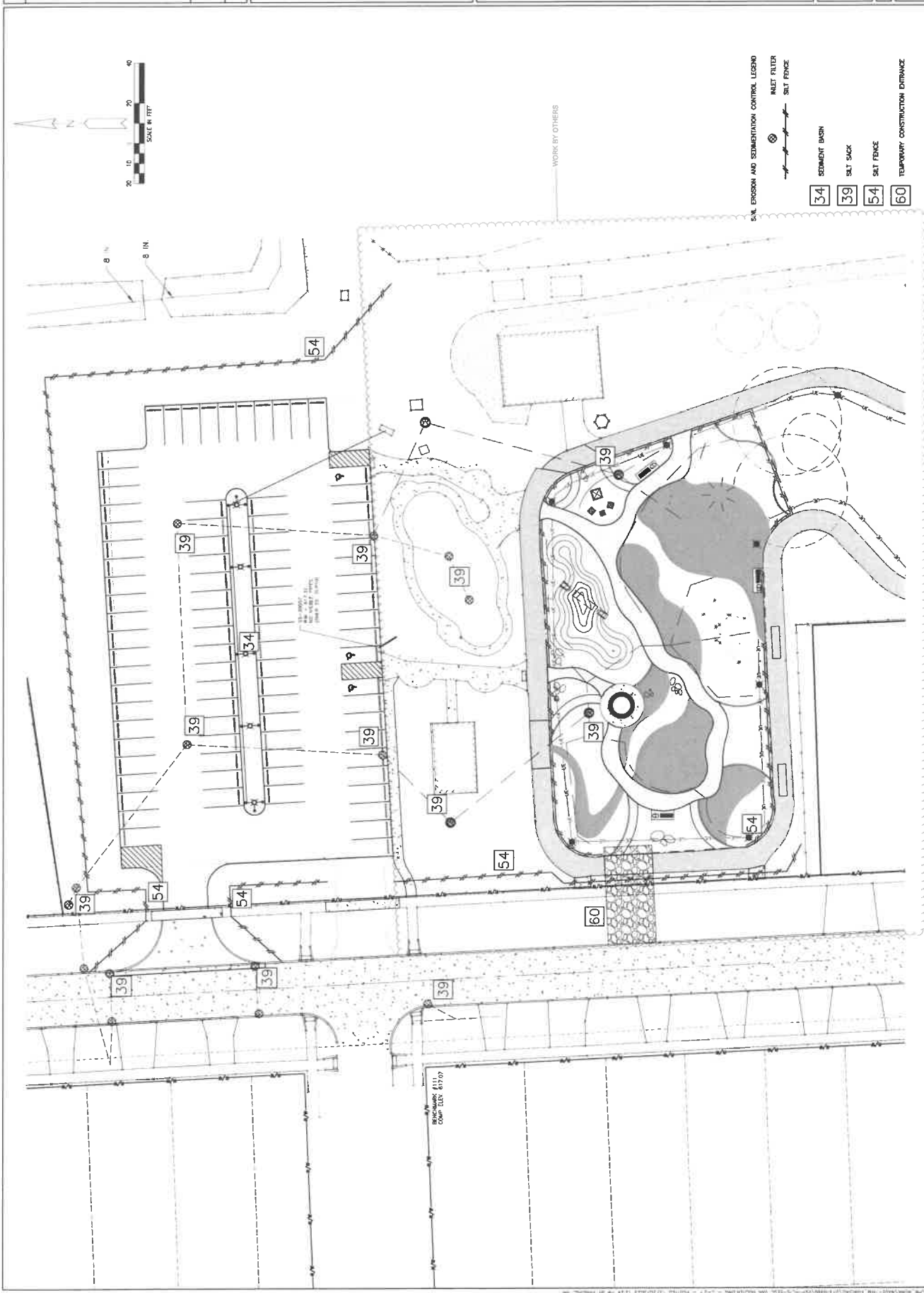
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TRANSMISSION FEATURES	EXISTING	PROPOSED
BOUNDARY	---	---
BUILDING	=====	=====
BUILDING SETBACK	=====	=====
CONTOURS (MINOR)	-----	-----
CONTOURS (MAJOR)	-----	-----
EASEMENT	=====	=====
FENCE CHAINLINK	-----	-----
FENCE ORNAMENTAL	-----	-----
FENCE WOOD	-----	-----
FIELD	-----	-----
FLOOD PLAIN	-----	-----
FLOWER BED	-----	-----
GARDEN	-----	-----
JUNK YARD	-----	-----
LANDSCAPE	-----	-----
PLAYGROUND	-----	-----
SECTION LINE	-----	-----
WALL	=====	=====
ANTENNA	K	
FLAG POLE	Q ₁	
U/G GAS TANK	Q ₂	
MAILBOX	Q ₃	
MONITORING WELL	Q ₄	
NEWSPAPER BOX	Q ₅	
SEWER POST	Q ₆	
SQUARE POST	Q ₇	
ROCK	Q ₈	
SPRINKLER HEAD	Q ₉	
SON POST	Q ₁₀	
SOIL BORING	Q ₁₁	
UNDERGROUND MARKERS		
CABLE	-----	-----
ELECTRIC	-----	-----
FIBER OPTIC	-----	-----
GAS	-----	-----
TELEPHONE	-----	-----
WATER	-----	-----
UTILITY MARKER	-----	-----
STREETS AND ROADWAYS		
RIGHT OF WAY	=====	=====
GRADED RAIL	=====	=====
GRADED GUTTER	=====	=====
EDGE OF PAVEMENT	=====	=====
EDGE OF PAVEMENT	=====	=====
ROAD CENTERLINE	=====	=====
RAILROAD	=====	=====
HIGHWAY DELIMITER	=====	=====
TRAFFIC SIGNAL	=====	=====
RAILROAD SIGNAL	=====	=====
MONUMENTS		
IRON BAR	=====	=====
IRON PIPE	=====	=====
WOOD MONUMENT	=====	=====
GPS MONUMENT	=====	=====
MONUMENT CORNER	=====	=====
MONUMENT BOX	=====	=====
MONUMENT	=====	=====
NIS MONUMENT	=====	=====
NAIL & TAG	=====	=====
PINCHED IRON	=====	=====
RAILROAD SPIKE	=====	=====
RIGHT OF WAY MARKER	=====	=====
SPIKE	=====	=====
TIE IRON	=====	=====
USGS MONUMENT	=====	=====
CROSS CUT	=====	=====
WOOD STAKE	=====	=====



DATE: 12/20/2013	TIME: 12:24 PM	BY: JWB/ML, WJ
PROJECT: VAN HOUTEN PARK IMPROVEMENTS	SHEET: C-1.0	
DESIGN: JWB/ML	CHECK: JWB/ML	DATE: 12/20/2013
DATE: 12/20/2013	TIME: 12:24 PM	BY: JWB/ML, WJ



Michigan unified keying system

(modified)

* indicates applicability of a specific control measure to one or more of the seven problem areas

KEY	DETAIL	CHARACTERISTICS	SLOPES	SURFACE MATERIALS	ENCLOSED DRAINAGEWAYS	LARGE FLAT AREAS	STOCKPILE AREAS	ADJACENT PROPERTIES
1	Base Course	Base course is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
2	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
3	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
4	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
5	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
6	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
7	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
8	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
9	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
10	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
11	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
12	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
13	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
14	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
15	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
16	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
17	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
18	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
18A	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
19	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
20	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
21	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
21A	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
22	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
23	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
24	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
25	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
26	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
27	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
28	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
29	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
30	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
31	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
32	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
33	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
34	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*

KEY	DETAIL	CHARACTERISTICS	SLOPES	SURFACE MATERIALS	ENCLOSED DRAINAGEWAYS	LARGE FLAT AREAS	STOCKPILE AREAS	ADJACENT PROPERTIES
35	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
36	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
37	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
38	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
39	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
40	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
41	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
42	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
43	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
44	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
45	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
46	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
47	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
48	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
49	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
50	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
51	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
52	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
53	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
54	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
55	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
56	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
57	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
58	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
59	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*
60	Subgrade	Subgrade is required to provide a stable, uniform subgrade for the pavement structure.	*			*	*	*

SOIL EROSION AND SEDIMENTATION CONTROL

1. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT SOIL EROSION AND SEDIMENTATION MEASURES ARE IN PLACE PRIOR TO EXCAVATION AND TEMPORARY EROSION CONTROL MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING AND/OR GRADING OPERATIONS.

2. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.

3. MEASURES ARE NOT DESTROYED OR DAMAGED BY CONSTRUCTION OPERATIONS.

4. THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES WILL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.

5. TEMPORARY EROSION CONTROL MEASURES SHALL BE COMPLETELY REMOVED IMMEDIATELY UPON COMPLETION OF THE PROJECT.

6. EROSION BELLS MAY BE USED IN LIEU OF SILT FENCE ALONG SHED EDGES.

7. CONTRACTOR SHALL INSTALL EITHER SILT FENCE OR EROSION BELLS AT ALL LOCATIONS ALONG REVERSEPONT WHERE ADJACENT CONSTRUCTION IS OCCURRING.

CONSTRUCTION SEQUENCE

1. EXCAVATION AND STOCKPILING OF SOIL

2. IMPLEMENTATION OF TEMPORARY EROSION CONTROL MEASURES, SELECTIVE DRAINAGE, DIVERSIONS AS REQUIRED IN FIELD, PROTECTION OF STORM SEWER FACILITIES.

3. CONSTRUCTION OF PERMANENT EROSION CONTROL MEASURES.

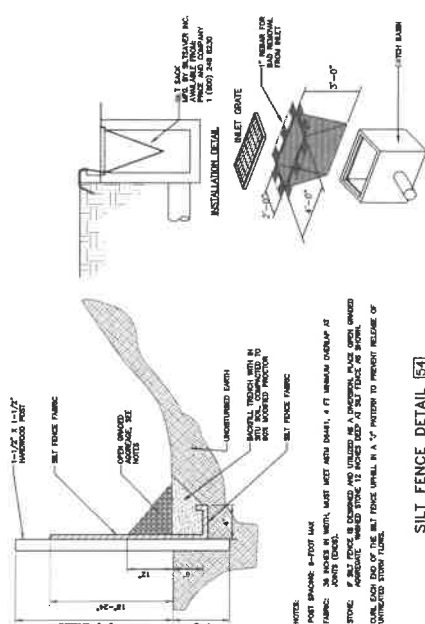
4. PERMANENT MEASURES, FINAL GRADING, SEEDING AND MULCHING.

SEE UNITED KEYING SYSTEM FOR EROSION CONTROL KEY NUMBERS

SOIL EROSION AND SEDIMENTATION CONTROL SCHEDULE

CONSTRUCTION SEQUENCE	1	2	3	4	5	6	7	8	9	10	11	12
EXCAVATION AND STOCKPILING OF SOIL												
IMPLEMENTATION OF TEMPORARY EROSION CONTROL MEASURES, SELECTIVE DRAINAGE, DIVERSIONS AS REQUIRED IN FIELD, PROTECTION OF STORM SEWER FACILITIES												
CONSTRUCTION OF PERMANENT EROSION CONTROL MEASURES												
PERMANENT MEASURES, FINAL GRADING, SEEDING AND MULCHING												
EROSION BELLS MAY BE USED IN LIEU OF SILT FENCE ALONG SHED EDGES												
CONTRACTOR SHALL INSTALL EITHER SILT FENCE OR EROSION BELLS AT ALL LOCATIONS ALONG REVERSEPONT WHERE ADJACENT CONSTRUCTION IS OCCURRING												

NOTE: ABOVE SCHEDULE IS A GENERAL GUIDE TO BE COMPLETED AND SUBMITTED BY CONTRACTOR



- APPLICABLE TO AREAS WHERE CB IS SURROUNDED BY PAVEMENT**
1. INSPECT WEEKLY AND AFTER EACH RAIN EVENT
 2. REPLACE DAMAGED FILTER BAGS OR CLOGGED FABRIC IMMEDIATELY
 3. IF UPON INSPECTION REPAIRS ARE NEEDED, INSTITUTE IMMEDIATELY
 4. MAINTAIN BAGS THROUGHOUT CONSTRUCTION UNTIL PROJECT IS COMPLETE OR OWNER ACCEPTS PROJECT
 5. CLEAN SUMP OF CATCH BUSH UPON COMPLETION OF PROJECT
- SILT SACK**
NOT TO SCALE

SILT FENCE DETAIL

ZONE	TYPE OF PROTECTION	DATE	TIME	BY	REMARKS
ZONE 1					
ZONE 2					

PERMANENT SEEDING GUIDE

SEEDING GUIDE

TEMPORARY SEEDING GUIDE

SEEDING GUIDE

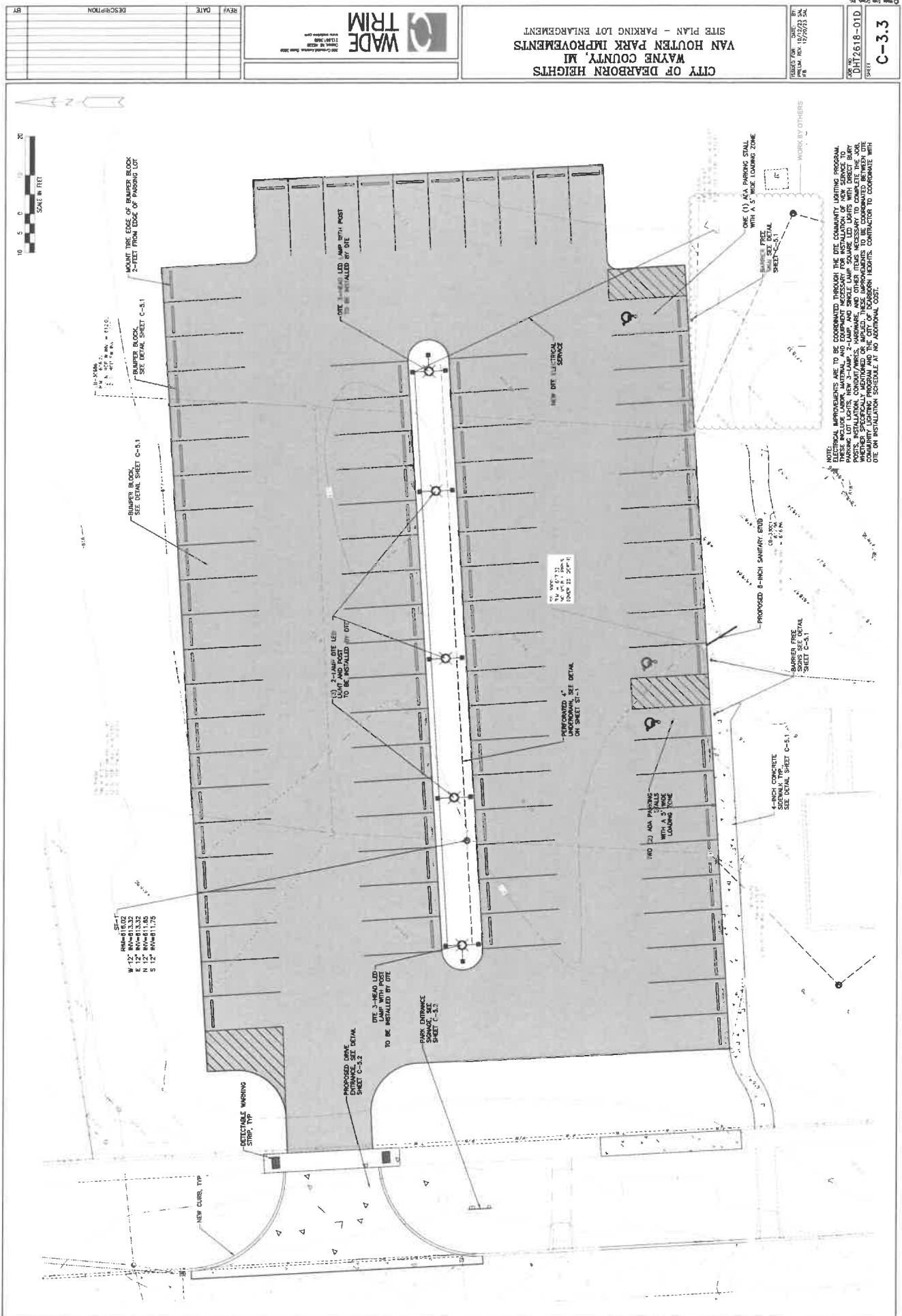
TYPE OF SOIL	DATE	TIME	BY	REMARKS
ZONE 1				
ZONE 2				

CITY OF DEARBORN HEIGHTS
WAYNE COUNTY, MI
VAN HOUTEN PARK IMPROVEMENTS
SOIL EROSION & SEDIMENTATION CONTROL DETAILS

MADE TRIM
1100 1000
1100 1000
1100 1000

DATE: 12/12/2012
TIME: 12:24 PM
BY: HANDBOOK

PROJECT: VAN HOUTEN PARK IMPROVEMENTS
SHEET: C-2.2



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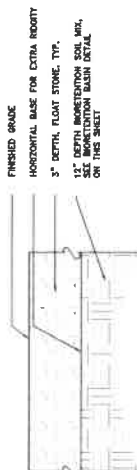
LANDSCAPE NOTES

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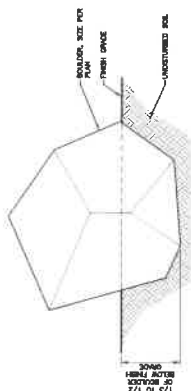
PLANTING MIXTURE NOTES

- [illegible]

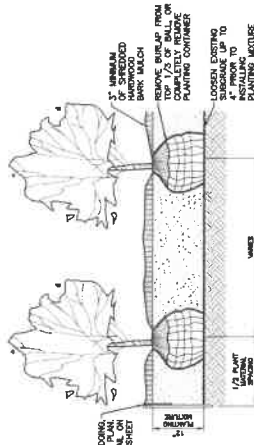
FLOAT STONE DETAIL



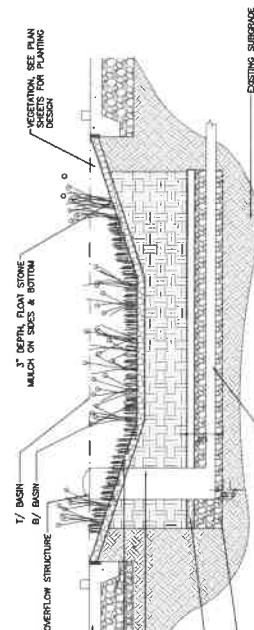
BOULDER PLACEMENT DETAIL



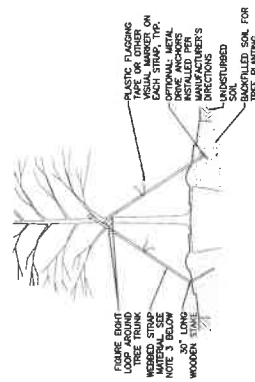
SHRUB PLANTING DETAIL



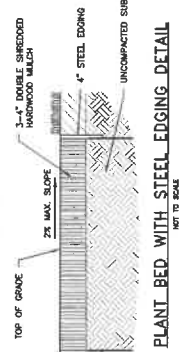
BIORETENTION BASIN DETAIL



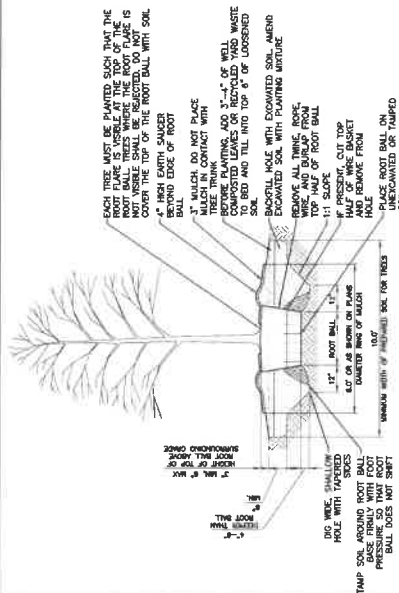
TREE PLANTING DETAIL



TREE STAKING DETAIL



PLANT BED WITH STEEL EDGING DETAIL

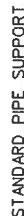


THE

1. FOR COVERINGS-DROWN TREES: TREES OUT OR SMALL AND TOOLS TO PULL THE BRUSHES OUT OF THE PLANTING HOLES. PLANTING SHOULDS BE DONE ON THE SAME DAY.
2. FOR COVERINGS-UPROOTED TREES: TREES OUT OR SMALL AND TOOLS TO PULL THE BRUSHES OUT OF THE PLANTING HOLES. PLANTING SHOULDS BE DONE ON THE SAME DAY.
3. AFTER DOINGS MUST FALL WITH WATER TO CONFIRM THAT WATER DRAINS OUT OF THE SOIL. A HOLE THAT DOES NOT PERMEATE, DO NOT PLANT THERE. NOTIFY LANDSCAPE ARCHITECT FOR DIRECTION.
4. FOR COVERINGS-UPROOTED TREES: TREES OUT OR SMALL AND TOOLS TO PULL THE BRUSHES OUT OF THE PLANTING HOLES. PLANTING SHOULDS BE DONE ON THE SAME DAY.
5. THE PLANTING PROCESSES IS SIMILAR FOR DOCKBOARDS AND EXPOSED TREES.
6. THE PLANTING PROCESSES IS SIMILAR FOR DOCKBOARDS AND EXPOSED TREES.
7. SET TREES PLANTS WITH VERTICAL TRUNK.
8. SET TREES ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT SEE DETAIL ON THIS SHEET.
9. SET TREES ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT.
10. SET TREES ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT.

1

- [illegible]



NOTE: WHERE CONCRETE ENCASMENT IS SPECIFIED FOR NEW UTILITY A 6" MINIMUM LAYER OF MECHANICALLY COMPACTED SAND SHALL BE MAINTAINED BETWEEN EXISTING UTILITY & TOP OF CONCRETE ENCASMENT.

STANDARD CASING SECTION

GENERAL NOTES

-

GENERAL NOTES

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GENERAL NOTES

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CITY OF DEARBORN HEIGHTS
WAYNE COUNTY, MI



CLASS "E-111"

MINIMUM WIDTH OF TRENCH AT 12" ABOVE TOP OF PIPE	MINIMUM TRENCH WIDTH
PIPE O.D.	O.D. + 16"
UP TO 16" GREATER THAN 16"	O.D. x 1.25 PLUS 12"

CLASS "E-111"

REV	DATE	DESCRIPTION
BY		

WADE TRIM

NOT A QUALITY ASSURANCE PROGRAM
NOT A QUALITY ASSURANCE PROGRAM
NOT A QUALITY ASSURANCE PROGRAM

CITY OF DEARBORN
AND
CITY OF DEARBORN HEIGHTS

SIDEWALK DETAILS

PROJECT NO. _____

SHEET _____

DATE _____

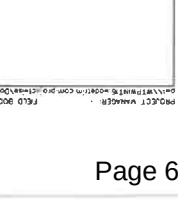
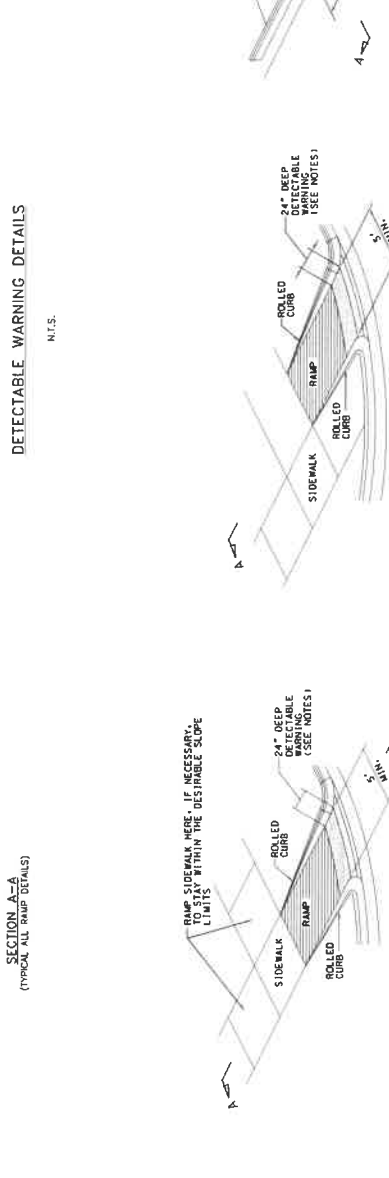
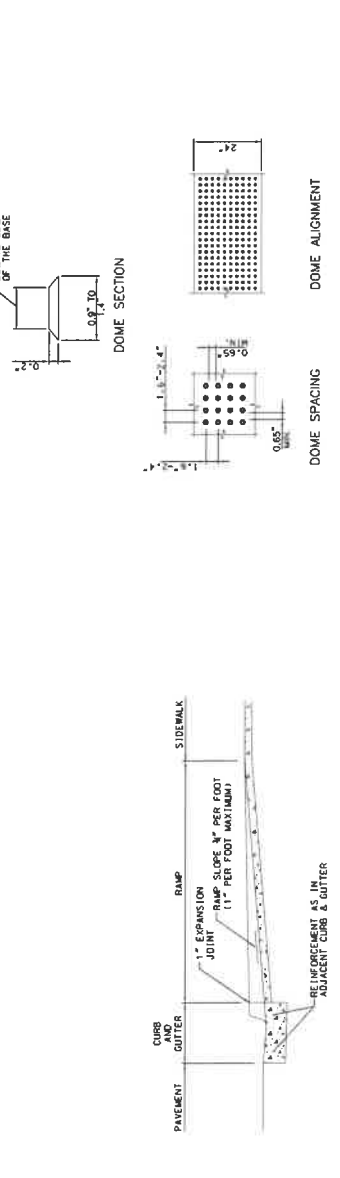
BY _____

NOTE:

- ONE-HALF INCH TRANSVERSE EXPANSION JOINTS SHALL BE PLACED THROUGH THE EXPANSION JOINT SHALL ALSO BE PLACED BETWEEN THE SIDEWALK AND ADJUTING DRIVE APPROACHES. ONE INCH EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK RAMP AND BACK OF CURB.
- PLANS OF OVERLAP JOINTS SHALL BE PLACED EVERY 3 FEET AND BE PRODUCED OR BY CUTTING JOINTS IN THE CONCRETE AFTER FLOWING TO A DEPTH OF 1/2 INCH. JOINTS SHALL BE FINISHED SMOOTH AND TRUE TO LINE.

SIDEWALK RAMP NOTES:

- ALL SIDEWALK RAMP AS CALLED FOR ON THE PLANS SHALL HAVE DETECTABLE WARNING.
- DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKING SURFACE.
- DETECTABLE WARNING SHALL BE MODULAR PLASTIC TILE, POLYMER CONCRETE TILE OR OTHER SIMILAR MATERIAL EMBEDDED INTO THE FRESH CONCRETE WITH INTEGRAL COLOR (NOT SHADE-ON COLOR). ADHESIVE APPLIED DETECTABLE WARNING ARE NOT ACCEPTABLE.
- ALL DETECTABLE WARNING SHALL HAVE SKID RESISTANT SURFACE SYSTEM AND COLOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO BEGINNING WORK.



"General Decision Number: MI20240001 08/23/2024

Superseded General Decision Number: MI20230001

State: Michigan

Construction Types: Highway (Highway, Airport & Bridge xxxxx and Sewer/Incid. to Hwy.)

Counties: Michigan Statewide.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

Van Houten
parking lot Replacement
provided by Davis Bacon
Compliance officer Mr. Hassan
Bazzi

H. Bazzi

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	- Executive Order 14026 generally applies to the contract. - The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	- Executive Order 13658 generally applies to the contract. - The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	02/23/2024
2	04/05/2024

3	04/19/2024
4	04/26/2024
5	05/03/2024
6	05/17/2024
7	05/24/2024
8	06/07/2024
9	06/14/2024
10	06/28/2024
11	07/12/2024
12	07/26/2024
13	08/02/2024
14	08/23/2024

CARP0004-004 06/01/2019

REMAINDER OF STATE

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 27.62	20.59

CARP0004-005 06/01/2018

LIVINGSTON (Townships of Brighton, Deerfield, Genoa, Hartland, Oceola & Tyrone), MACOMB, MONROE, OAKLAND, SANILAC, ST. CLAIR AND WAYNE COUNTIES

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 30.50	27.28

ELEC0017-005 06/01/2024

STATEWIDE

	Rates	Fringes
Line Construction		
Groundman/Driver.....	\$ 32.00	33%+7.31
Journeyman Signal Tech, Communications Tech, Tower Tech & Fiber Optic Splicers.	\$ 47.35	33%+7.31
Journeyman Specialist.....	\$ 54.45	33%+7.31
Operator A.....	\$ 40.09	33%+7.31
Operator B.....	\$ 37.46	33%+7.31

Classifications

Journeyman Specialist: Refers to a crew of only one person working alone.

Operator A: Shall be proficient in operating all power equipment including: Backhoe,

Excavator, Directional Bore and Boom/Digger truck.

Operator B: Shall be proficient in operating any 2 of the above mentioned pieces of equipment listed under Operator A.

ENGI0324-003 06/01/2024

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LENAWEE, LIVINGSTON, MACOMB, MIDLAND, MONROE, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO,

PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLAIR, SANILAC,
SHIAWASSEE, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
GROUP 1.....	\$ 55.42	25.25
GROUP 2.....	\$ 56.42	25.25
GROUP 3.....	\$ 53.92	25.25
GROUP 4.....	\$ 54.92	25.25
GROUP 5.....	\$ 52.42	25.25
GROUP 6.....	\$ 53.42	25.25
GROUP 7.....	\$ 52.15	25.25
GROUP 8.....	\$ 53.15	25.25
GROUP 9.....	\$ 51.70	25.25
GROUP 10.....	\$ 52.70	25.25
GROUP 11.....	\$ 50.97	25.25
GROUP 12.....	\$ 51.97	25.25
GROUP 13.....	\$ 50.61	25.25
GROUP 14.....	\$ 51.61	25.25
GROUP 15.....	\$ 49.97	25.25
GROUP 16.....	\$ 46.77	25.25
GROUP 17.....	\$ 32.29	12.40
GROUP 18.....	\$ 35.78	25.25

FOOTNOTE:

Paid Holidays: New Year's Day, Memorial Day, Fourth of July,
Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Engineer when operating combination of boom and jib
400' or longer

GROUP 2: Engineer when operating combination of boom and jib
400' or longer on a crane that requires an oiler

GROUP 3: Engineer when operating combination of boom and jib
300' or longer

GROUP 4: Engineer when operating combination of boom and jib
300' or longer on a crane that requires an oiler

GROUP 5: Engineer when operating combination of boom and jib
220' or longer

GROUP 6: Engineer when operating combination of boom and jib
220' or longer on a crane that requires an oiler

GROUP 7: Engineer when operating combination of boom and jib
140' or longer

GROUP 8: Engineer when operating combination of boom and jib
140' or longer on a crane that requires an oiler

GROUP 9: Tower crane & derrick operator (where operator's
work station is 50 ft. or more above first sub-level)

GROUP 10: Tower crane & derrick operator (where operator's
work station is 50 ft. or more above first sub-level) on a
crane that requires an oiler

GROUP 11: Engineer when operating combination of boom and jib 120' or longer

GROUP 12: Engineer when operating combination of boom and jib 120' or longer on a crane that requires an oiler

GROUP 13: Crane operator; job mechanic and 3 drum hoist and excavator

GROUP 14: Crane operator on a crane that requires an oiler

GROUP 15: Hoisting operator; 2 drum hoist and rubber tired backhoe

GROUP 16: Forklift and 1 drum hoist

GROUP 17: Compressor or welder operator

GROUP 18: Oiler

ENGI0324-004 06/01/2024

AREA 1: ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, EATON, HILLSDALE, IONIA, KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH, VAN BUREN

AREA 2: ANTRIM, BENZIE, CHARLEVOIX, EMMET, GRAND TRAVERSE, KALKASKA, LEELANAU, MISSAUKEE AND WEXFORD COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
AREA 1		
GROUP 1.....	\$ 55.02	25.25
GROUP 2.....	\$ 52.15	25.25
GROUP 3.....	\$ 50.61	25.25
GROUP 4.....	\$ 46.77	25.25
GROUP 5.....	\$ 32.29	12.40
GROUP 6.....	\$ 35.78	25.25
AREA 2		
GROUP 1.....	\$ 55.02	25.25
GROUP 2.....	\$ 52.15	24.25
GROUP 3.....	\$ 50.61	25.25
GROUP 4.....	\$ 46.77	25.25
GROUP 5.....	\$ 32.29	12.40
GROUP 6.....	\$ 35.78	25.25

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 additional to the group 1 rate. Crane operator with main boom and jib 400' or longer: \$3.00 additional to the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Crane Operator with main boom & jib 400', 300', or 220' or longer.

GROUP 2: Crane Operator with main boom & jib 140' or longer, Tower Crane; Gantry Crane; Whirley Derrick.

GROUP 3: Regular Equipment Operator, Crane, Dozer, Loader, Hoist, Straddle Wagon, Mechanic, Grader and Hydro Excavator.

GROUP 4: Air Tugger (single drum), Material Hoist Pump 6" or over, Elevators, Brokk Concrete Breaker.

GROUP 5: Air Compressor, Welder, Generators, Conveyors

GROUP 6: Oiler and fire tender

ENGI0324-005 09/01/2023

AREA 1: GENESEE, LAPEER, LIVINGSTON, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALCONA, ALLEGAN, ALGER, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KWEENAW, LAKE, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

Rates Fringes

OPERATOR: Power Equipment
(Underground construction
(including sewer))

AREA 1:

GROUP 1.....	\$ 41.08	25.25
GROUP 2.....	\$ 36.25	25.25
GROUP 3.....	\$ 35.52	25.25
GROUP 4.....	\$ 34.95	25.25
GROUP 5.....	\$ 25.35	12.10

AREA 2:

GROUP 1.....	\$ 39.27	25.25
GROUP 2.....	\$ 34.38	25.25
GROUP 3.....	\$ 33.88	25.25
GROUP 4.....	\$ 33.60	25.25
GROUP 5.....	\$ 25.35	12.10

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backfiller tamper; Backhoe; Batch plant operator (concrete); Clamshell; Concrete paver (2 drums or larger); Conveyor loader (Euclid type); Crane (crawler, truck type or pile driving); Dozer; Dragline; Elevating grader; Endloader; Gradall (and similar type machine); Grader; Mechanic; Power shovel; Roller (asphalt); Scraper (self-propelled or tractor drawn); Side boom tractor (type D-4 or equivalent and larger); Slip form paver; Slope paver; Trencher (over 8 ft. digging capacity); Well drilling rig; Concrete pump with boom operator; Hydro Excavator

GROUP 2: Boom truck (power swing type boom); Crusher; Hoist; Pump (1 or more - 6-in. discharge or larger - gas or diesel- powered or powered by generator of 300 amperes or more - inclusive of generator); Side boom tractor (smaller than type D-4 or equivalent); Tractor (pneu-tired, other than backhoe or front end loader); Trencher (8-ft. digging capacity and smaller);Vac Truck and End dump operator;

GROUP 3: Air compressors (600 cfm or larger); Air compressors (2 or more-less than 600 cfm); Boom truck (non-swinging, non- powered type boom); Concrete breaker (self-propelled or truck mounted - includes compressor); Concrete paver (1 drum-1/2 yd. or larger); Elevator (other than passenger); Maintenance person; Pump (2 or more-4-in. up to 6-in. discharge-gas or diesel powered - excluding submersible pumps); Pumpcrete machine (and similar equipment); Wagon drill (multiple); Welding machine or generator (2 or more-300 amp. or larger - gas or diesel powered)

GROUP 4: Boiler; Concrete saw (40 hp or over); Curing machine (self-propelled); Farm tractor (with attachment); Finishing machine (concrete); Hydraulic pipe pushing machine; Mulching equipment; Pumps (2 or more up to 4-in. discharge, if used 3 hours or more a day, gas or diesel powered - excluding submersible pumps); Roller (other than asphalt); Stump remover; Trencher (service); Vibrating compaction equipment, self-propelled (6 ft. wide or over); Sweeper (Wayne type); Water wagon and Extend-a boom forklift

Group 5: Fire Person, Oiler

* ENGI0324-006 06/01/2024

GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW, WAYNE, ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
Power equipment operators: (AIRPORT, BRIDGE & HIGHWAY CONSTRUCTION)		
GROUP 1.....	\$ 43.71	25.25
GROUP 2.....	\$ 42.56	25.25
GROUP 3.....	\$ 35.83	25.55
GROUP 4.....	\$ 35.27	25.25

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Paver Operator (5 bags or more); Slip Form Paver; Asphalt Paver (self propelled); Shovel (Excavator) installing utilities over 20 feet in depth.

Group 2: Asphalt plant operator; crane operator (does not include work on bridge construction projects when the crane operator is erecting structural components); Dragline operator; Shovel (Excavator) operator; Locomotive operator; Elevating grader operator; Pile driving operator; Roller operator (asphalt); Blade grader operator; Trenching machine operator (ladder or wheel type); Auto-grader; Self-propelled or tractor-drawn scraper; Conveyor loader operator (Euclid type); Bulldozer; Hoisting engineer; Tractor operator; Finishing machine operator (asphalt); Mechanic; Pump operator (6-in. discharge or over, gas, diesel powered or generator of 300 amp. or larger); Shouldering or gravel distributing machine operator (self-propelled); Backhoe (with over 3/8 yd. bucket); Side boom tractor (type D-4 or equivalent or larger); Tube finisher (slip form paving); Gradall (and similar type machine); Asphalt planner (self-propelled); Batch plant (concrete-central mix); Slurry machine (asphalt); Concrete pump (3 in. and over); Roto-mill; Swinging boom truck (over 12 ton capacity); Hydro demolisher (water blaster); Farm-type tractor with attached pan; Vacuum truck operator; Batch Plant (concrete dry batch); Concrete Saw Operator (40h.p. or over; Tractor Operator (farm type); Finishing Machine Operator (concrete); Grader Operator (self-propelled fine grade or form (concrete); tractor operator (farm type with attachment); Wagon Drill operator; Boom or winch hoist truck operator.

GROUP 3: Screening plant operator; Washing plant operator; Crusher operator; Backhoe (with 3/8 yd. bucket or less); Side boom tractor (smaller than D-4 type or equivalent); Sweeper (Wayne type and similar equipment); Greese Truck; Air Compressor Operator (600 cu.ft. per min or more); Air Compressor Operator (two or more, less than 600 cfm); End Loader operator (1 yard Capacity and over); Side boom tractor (type D or equivalent or larger; Endloader operator *under 1 yard capacity; Trencher (service).

GROUP 4: Boiler fire tender; Concrete Breaker; Oiler; Fire tender; Trencher (service); Flexplane operator; Cleftplane operator; Roller operator (other than asphalt); Curing equipment operator (self-propelled); Power bin operator; Plant drier operator (asphalt); Vibratory compaction equipment operator (6 ft. wide or over); Guard post driver operator (power driven); All mulching equipment; Stump remover; Concrete pump (under 3-in.); Mesh installer (self-propelled); End dump; Skid steer.

ENGI0324-007 05/01/2024

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
Compressor, welder and forklift.....	\$ 40.90	25.00
Crane operator, main boom & jib 120' or longer.....	\$ 47.37	25.00
Crane operator, main boom		

& jib 140' or longer.....\$ 47.37	24.60
Crane operator, main boom	
& jib 220' or longer.....\$ 48.26	25.00
Mechanic with truck and	
tools.....\$ 46.50	25.00
Oiler and fireman.....\$ 39.96	25.00
Regular operator.....\$ 44.72	25.00

ENGI0324-008 10/01/2023

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE, MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

	Rates	Fringes
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OPERATOR: Power Equipment
(Sewer Relining)

GROUP 1.....\$ 37.37	15.44
GROUP 2.....\$ 35.33	15.44

SEWER RELINING CLASSIFICATIONS

GROUP 1: Operation of audio-visual closed circuit TV system, including remote in-ground cutter and other equipment used in connection with the CCTV system

GROUP 2: Operation of hot water heaters and circulation systems, water jetters and vacuum and mechanical debris removal systems

ENGI0325-012 05/01/2024

	Rates	Fringes
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Power equipment operators -
gas distribution and duct
installation work:

GROUP 1.....\$ 37.98	25.25
GROUP 2.....\$ 34.75	25.25

SCOPE OF WORK: The construction, installation, treating and reconditioning of pipelines transporting gas vapors within cities, towns, subdivisions, suburban areas, or within private property boundaries, up to and including private meter settings of private industrial, governmental or other premises, more commonly referred to as "distribution work," starting from the first metering station, connection, similar or related facility, of the main or cross country pipeline and including duct installation.

Group 1: Backhoe, crane, grader, mechanic, dozer (D-6 equivalent or larger), side boom (D-4 equivalent or

larger), trencher(except service), endloader (2 yd. capacity or greater).

GROUP 2: Dozer (less than D-6 equivalent), endloader (under 2 yd. capacity), side boom (under D-4 capacity), backfiller, pumps (1 or 2 of 6-inch discharge or greater), boom truck (with powered boom), tractor (wheel type other than backhoe or front endloader). Tamper (self-propelled), boom truck (with non-powered boom), concrete saw (20 hp or larger), pumps (2 to 4 under 6-inch discharge), compressor (2 or more or when one is used continuously into the second day) and trencher(service). Oiler, hydraulic pipe pushing machine, grease person and hydrostatic testing operator.

IRON0008-007 06/01/2022

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector.....	\$ 23.70	6.95
IRONWORKER		
General contracts \$10,000,000 or greater.....	\$ 38.14	28.70
General contracts less than \$10,000,000.....	\$ 38.14	28.70

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0025-002 06/01/2024

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LIVINGSTON, MACOMB, MIDLAND, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector		
ALLEGAN, ANTRIM, BARRY, BENZIE, BRANCH, CALHOUN, CHARLEVOIX, EATON, EMMET, GRAND TRAVERSE, HILLSDALE, IONIA, KALAMAZOO, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH, VAN BUREN AND WEXFORD COUNTIES:..	\$ 35.55	33.14
Bay, Genesee, Lapeer, Livingston (east of Burkhardt Road), Macomb,		

Midland, Oakland, Saginaw,
St. Clair, The University
of Michigan, Washtenaw
(east of U.S. 23) & Wayne...\$ 25.81 26.43

IRONWORKER

Ornamental and Structural...\$ 34.50 38.44
Reinforcing.....\$ 33.43 37.15

IRON0055-005 07/01/2022

LENAWEE AND MONROE COUNTIES:

Rates Fringes

IRONWORKER

Pre-engineered metal
buildings.....\$ 23.59 19.35
All other work.....\$ 33.00 27.20

IRON0292-003 06/01/2020

BERRIEN AND CASS COUNTIES:

Rates Fringes

IRONWORKER (Including
pre-engineered metal building
erector).....\$ 31.75 22.84

* LABO0005-006 10/01/2022

Rates Fringes

Laborers - hazardous waste
abatement: (ALCONA, ALPENA,
ANTRIM, BENZIE, CHARLEVOIX,
CHEBOYGAN, CRAWFORD, EMMET,
GRAND TRAVERSE, IOSCO,
KALKASKA, LEELANAU,
MISSAUKEE, MONTMORENCY,
OSCODA, OTSEGO, PRESQUE ISLE
AND WEXFORD COUNTIES - Zone
10)

Levels A, B or C.....\$ 17.45 12.75
class b.....\$ 18.64 12.90
Work performed in
conjunction with site
preparation not requiring
the use of personal
protective equipment;
Also, Level D.....\$ 16.45 ** 12.75
class a.....\$ 17.64 12.90

Zone 10

Laborers - hazardous waste
abatement: (ALGER, BARAGA,
CHIPPEWA, DELTA, DICKINSON,
GOGEbic, HOUGHTON, IRON,
KEWEENAW, LUCE, MACKINAC,
MARQUETTE, MENOMINEE,
ONTONAGON AND SCHOOLCRAFT
COUNTIES - Zone 11)

Levels A, B or C.....\$ 25.18 12.90
Work performed in
conjunction with site
preparation not requiring

the use of personal protective equipment;	
Also, Level D.....\$ 22.58	12.90
Laborers - hazardous waste abatement: (ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, IONIA COUNTY (except the city of Portland); KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH AND VAN BUREN COUNTIES - Zone 9)	
Levels A, B or C.....\$ 21.88	13.26
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 20.80	12.90
Laborers - hazardous waste abatement: (ARENAC, BAY, CLARE, GLADWIN, GRATIOT, HURON, ISABELLA, MIDLAND, OGEMAW, ROSCOMMON, SAGINAW AND TUSCOLA COUNTIES - Zone 8)	
Levels A, B or C.....\$ 23.74	12.95
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 20.80	12.90
Laborers - hazardous waste abatement: (CLINTON, EATON AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); LIVINGSTON COUNTY (west of Oak Grove Rd., including the City of Howell) - Zone 6)	
Levels A, B or C.....\$ 26.33	12.95
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 24.64	12.90
Laborers - hazardous waste abatement: (GENESEE, LAPEER AND SHIAWASSEE COUNTIES - Zone 7)	
Levels A, B or C.....\$ 24.20	13.80
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 23.20	13.80
Laborers - hazardous waste abatement: (HILLSDALE, JACKSON AND LENAWEЕ COUNTIES - Zone 4)	
Levels A, B or C.....\$ 27.13	14.95
Work performed in	

conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 24.17	12.90
Laborers - hazardous waste abatement: (LIVINGSTON COUNTY (east of Oak Grove Rd. and south of M-59, excluding the city of Howell); AND WASHTENAW COUNTY - Zone 3)	
Levels A, B or C.....\$ 29.93	14.20
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 28.93	14.20
Laborers - hazardous waste abatement: (MACOMB AND WAYNE COUNTIES - Zone 1)	
Levels A, B or C.....\$ 29.93	16.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 28.93	16.90
Laborers - hazardous waste abatement: (MONROE COUNTY - Zone 4)	
Levels A, B or C.....\$ 31.75	14.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 31.75	14.90
Laborers - hazardous waste abatement: (OAKLAND COUNTY and the Northeast portion of LIVINGSTON COUNTY bordered by Oak Grove Road on the West and M-59 on the South - Zone 2)	
Level A, B, C.....\$ 29.93	16.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 28.93	16.90
Laborers - hazardous waste abatement: (SANILAC AND ST. CLAIR COUNTIES - Zone 5)	
Levels A, B or C.....\$ 26.21	16.62
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 24.75	16.35

LAB00259-001 09/01/2023

AREA 1: MACOMB, OAKLAND AND WAYNE COUNTIES

AREA 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONROE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW AND WEXFORD COUNTIES

	Rates	Fringes
Laborers - tunnel, shaft and caisson:		
AREA 1		
GROUP 1.....	\$ 23.62	16.93
GROUP 2.....	\$ 23.73	16.93
GROUP 3.....	\$ 23.79	16.93
GROUP 4.....	\$ 23.97	16.93
GROUP 5.....	\$ 24.22	16.93
GROUP 6.....	\$ 24.55	16.93
GROUP 7.....	\$ 17.83	16.93
AREA 2		
GROUP 1.....	\$ 27.57	16.93
GROUP 2.....	\$ 25.24	16.93
GROUP 3.....	\$ 25.34	16.93
GROUP 4.....	\$ 29.57	16.93
GROUP 5.....	\$ 25.76	16.93
GROUP 6.....	\$ 26.07	16.93
GROUP 7.....	\$ 25.57	16.93

SCOPE OF WORK: Tunnel, shaft and caisson work of every type and description and all operations incidental thereto, including, but not limited to, shafts and tunnels for sewers, water, subways, transportation, diversion, sewerage, caverns, shelters, aquifers, reservoirs, missile silos and steel sheeting for underground construction.

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Tunnel, shaft and caisson laborer, dump, shanty, hog house tender, testing (on gas) and watchman

GROUP 2: Manhole, headwall, catch basin builder, bricklayer tender, mortar machine and material mixer

GROUP 3: Air tool operator (jackhammer, bush hammer and grinder), first bottom, second bottom, cage tender, car pusher, carrier, concrete, concrete form, concrete repair, cement invert laborer, cement finisher, concrete shoveler, conveyor, floor, gasoline and electric tool operator, gunite, grout operator, welder, heading dinky person, inside lock tender, pea gravel operator, pump, outside lock tender, scaffold, top signal person, switch person, track, tugger, utility person, vibrator, winch operator, pipe jacking, wagon drill and air track operator and concrete saw operator (under 40 h.p.)

GROUP 4: Tunnel, shaft and caisson mucker, bracer, liner

plate, long haul dinky driver and well point

GROUP 5: Tunnel, shaft and caisson miner, drill runner, key board operator, power knife operator, reinforced steel or mesh (e.g. wire mesh, steel mats, dowel bars, etc.)

GROUP 6: Dynamite and powder

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LABO0334-001 09/01/2023

	Rates	Fringes
Laborers - open cut:		
ZONE 1 - MACOMB, OAKLAND AND WAYNE COUNTIES:		
GROUP 1.....	\$ 29.87	16.95
GROUP 2.....	\$ 31.87	16.95
GROUP 3.....	\$ 28.03	16.95
GROUP 4.....	\$ 23.71	16.72
GROUP 5.....	\$ 24.17	16.72
GROUP 6.....	\$ 22.00	16.72
GROUP 7.....	\$ 17.84	16.72
ZONE 2 - LIVINGSTON COUNTY (east of M-151 (Oak Grove Rd.)); MONROE AND WASHTENAW COUNTIES:		
GROUP 1.....	\$ 30.70	13.45
GROUP 2.....	\$ 32.70	13.45
GROUP 3.....	\$ 26.89	13.45
GROUP 4.....	\$ 25.10	16.72
GROUP 5.....	\$ 25.25	16.72
GROUP 6.....	\$ 22.55	16.72
GROUP 7.....	\$ 22.11	16.72
ZONE 3 - CLINTON, EATON, GENESEE, HILLSDALE AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); JACKSON, LAPEER AND LENAWEE COUNTIES; LIVINGSTON COUNTY (west of M-151 Oak Grove Rd.); SANILAC, ST. CLAIR AND SHIAWASSEE COUNTIES:		
GROUP 1.....	\$ 28.89	13.45
GROUP 2.....	\$ 30.89	13.45
GROUP 3.....	\$ 26.89	13.45
GROUP 4.....	\$ 23.30	16.72
GROUP 5.....	\$ 23.44	16.72
GROUP 6.....	\$ 20.74	16.72
GROUP 7.....	\$ 22.23	16.72
ZONE 4 - ALCONA, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, GRATIOT AND HURON		

COUNTIES; IONIA COUNTY
(EXCEPT THE CITY OF
PORTLAND); IOSCO,
ISABELLA, KALAMAZOO,
KALKASKA, KENT,
LAKE, LEELANAU, MANISTEE,
MASON, MECOSTA, MIDLAND,
MISSAUKEE, MONTCALM,
MONTMORENCY, MUSKEGON,
NEWAYGO, OCEANA, OGEMAW,
OSCEOLA, OSCODA, OTSEGO,
OTTAWA, PRESQUE ISLE,
ROSCOMMON, SAGINAW, ST.
JOSEPH, TUSCOLA, VAN BUREN
AND WEXFORD COUNTIES:

GROUP 1.....	\$ 27.87	13.45
GROUP 2.....	\$ 29.87	13.45
GROUP 3.....	\$ 25.87	13.45
GROUP 4.....	\$ 22.33	16.72
GROUP 5.....	\$ 22.45	16.72
GROUP 6.....	\$ 19.67	16.72
GROUP 7.....	\$ 22.30	16.72

ZONE 5 - ALGER, BARAGA,
CHIPPEWA, DELTA,
DICKINSON, GOGEBIC,
HOUGHTON, IRON,
KEWEENAW, LUCE, MACKINAC,
MARQUETTE, MENOMINEE,
ONTONAGON AND SCHOOLCRAFT
COUNTIES:

GROUP 1.....	\$ 28.09	13.45
GROUP 2.....	\$ 30.09	13.45
GROUP 3.....	\$ 26.09	13.45
GROUP 4.....	\$ 22.56	16.72
GROUP 5.....	\$ 22.64	16.72
GROUP 6.....	\$ 19.99	16.72
GROUP 7.....	\$ 22.45	16.72

SCOPE OF WORK:

Open cut construction work shall be construed to mean work which requires the excavation of earth including industrial, commercial and residential building site excavation and preparation, land balancing, demolition and removal of concrete and underground appurtenances, grading, paving, sewers, utilities and improvements; retention, oxidation, flocculation and irrigation facilities, and also including but not limited to underground piping, conduits, steel sheeting for underground construction, and all work incidental thereto, and general excavation. For all areas except the Upper Peninsula, open cut construction work shall also be construed to mean waterfront work, piers, docks, seawalls, breakwalls, marinas and all incidental work. Open cut construction work shall not include any structural modifications, alterations, additions and repairs to buildings, or highway work, including roads, streets, bridge construction and parking lots or steel erection work and excavation for the building itself and back filling inside of and within 5 ft. of the building and foundations, footings and piers for the building. Open cut construction work shall not include any work covered under Tunnel, Shaft and Caisson work.

OPEN CUT LABORER CLASSIFICATIONS

GROUP 1: Construction laborer

GROUP 2: Mortar and material mixer, concrete form person, signal person, well point person, manhole, headwall and catch basin builder, headwall, seawall, breakwall and dock builder

GROUP 3: Air, gasoline and electric tool operator, vibrator operator, driller, pump person, tar kettle operator, bracer, rodger, reinforced steel or mesh person (e.g., wire mesh, steel mats, dowel bars, etc.), welder, pipe jacking and boring person, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger person and directional boring person

GROUP 4: Trench or excavating grade person

GROUP 5: Pipe layer (including crock, metal pipe, multi-plate or other conduits)

GROUP 6: Grouting man, audio-visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation and repair of water service pipe and appurtenances

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LAB00465-001 06/01/2024

LABORER: Highway, Bridge and Airport Construction

AREA 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALLEGAN, BARRY, BAY, BERRIEN, BRANCH, CALHOUN, CASS, CLINTON, EATON, GRATIOT, HILLSDALE, HURON, INGHAM, JACKSON, KALAMAZOO, LAPEER, LENAWEE, LIVINGSTON, MIDLAND, MUSKEGON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA AND VAN BUREN COUNTIES

AREA 3: ALCONA, ALPENA, ANTRIM, ARENAC, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, IONIA, IOSCO, ISABELLA, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MONTMORENCY, NEWAYGO, OCEANA, OGEAW, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON AND WEXFORD COUNTIES

AREA 4: ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES

	Rates	Fringes
LABORER (AREA 1)		
GROUP 1.....	\$ 34.01	14.45
GROUP 2.....	\$ 34.14	14.45
GROUP 3.....	\$ 34.32	14.45
GROUP 4.....	\$ 34.40	14.45
GROUP 5.....	\$ 34.61	14.45

GROUP 6.....	\$ 34.91	14.45
LABORER (AREA 2)		
GROUP 1.....	\$ 31.87	14.45
GROUP 2.....	\$ 32.07	14.45
GROUP 3.....	\$ 32.31	14.45
GROUP 4.....	\$ 32.66	14.45
GROUP 5.....	\$ 32.53	14.45
GROUP 6.....	\$ 32.87	14.45
LABORER (AREA 3)		
GROUP 1.....	\$ 31.12	14.45
GROUP 2.....	\$ 31.33	14.45
GROUP 3.....	\$ 31.62	14.45
GROUP 4.....	\$ 32.06	14.45
GROUP 5.....	\$ 31.68	14.45
GROUP 6.....	\$ 32.11	14.45
LABORER (AREA 4)		
GROUP 1.....	\$ 32.02	14.45
GROUP 2.....	\$ 31.73	14.45
GROUP 3.....	\$ 32.52	14.45
GROUP 4.....	\$ 32.96	14.45
GROUP 5.....	\$ 32.58	14.45
GROUP 6.....	\$ 33.01	14.45

LABORER CLASSIFICATIONS

GROUP 1: Asphalt shoveler or loader; asphalt plant misc.; burlap person; yard person; dumper (wagon, truck, etc.); joint filling laborer; miscellaneous laborer; unskilled laborer; sprinkler laborer; form setting laborer; form stripper; pavement reinforcing; handling and placing (e.g., wire mesh, steel mats, dowel bars); mason's tender or bricklayer's tender on manholes; manhole builder; headwalls, etc.; waterproofing, (other than buildings) seal coating and slurry mix, shoring, underpinning; pressure grouting; bridge pin and hanger removal; material recycling laborer; horizontal paver laborer (brick, concrete, clay, stone and asphalt); ground stabilization and modification laborer; grouting; waterblasting; top person; railroad track and trestle laborer; carpenters' tender; guard rail builders' tender; earth retention barrier and wall and M.S.E. wall installer's tender; highway and median installer's tender (including sound, retaining, and crash barriers); fence erector's tender; asphalt raker tender; sign installer; remote control operated equipment.

GROUP 2: Mixer operator (less than 5 sacks); air or electric tool operator (jackhammer, etc.); spreader; boxperson (asphalt, stone, gravel); concrete paddler; power chain saw operator; paving batch truck dumper; tunnel mucker (highway work only); concrete saw (under 40 h.p.) and dry pack machine; roto-mill grounds person.

GROUP 3: Tunnel miner (highway work only); finishers tenders; guard rail builders; highway and median barrier installer; earth retention barrier and wall and M.S.E. wall installer's (including sound, retaining and crash barriers); fence erector; bottom person; powder person; wagon drill and air track operator; diamond and core drills; grade checker; certified welders; curb and side rail setter's tender.

GROUP 4: Asphalt raker

GROUP 5: Pipe layers, oxy-gun

GROUP 6: Line-form setter for curb or pavement; asphalt screed checker/screw man on asphalt paving machines.

LAB01076-005 04/01/2024

MICHIGAN STATEWIDE

	Rates	Fringes
LABORER (DISTRIBUTION WORK)		
Zone 1.....	\$ 27.16	13.45
Zone 2.....	\$ 25.42	13.45
Zone 3.....	\$ 23.55	13.45
Zone 4.....	\$ 22.92	13.45
Zone 5.....	\$ 22.95	13.45

DISTRIBUTION WORK - The construction, installation, treating and reconditioning of distribution pipelines transporting coal, oil, gas or other similar materials, vapors or liquids, including pipelines within private property boundaries, up to and including the meter settings on residential, commercial, industrial, institutional, private and public structures. All work covering pumping stations and tank farms not covered by the Building Trades Agreement. Other distribution lines with the exception of sewer, water and cable television are included.

Underground Duct Layer Pay: \$.40 per hour above the base pay rate.

Zone 1 - Macomb, Oakland and Wayne

Zone 2 - Monroe and Washtenaw

Zone 3 - Bay, Genesee, Lapeer, Midland, Saginaw, Sanilac, Shiawassee and St. Clair

Zone 4 - Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

Zone 5 - Remaining Counties in Michigan

PAIN0022-002 07/01/2008

HILLSDALE, JACKSON AND LENAWEE COUNTIES; LIVINGSTON COUNTY (east of the eastern city limits of Howell, not including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 25.06	14.75

FOOTNOTES: For all spray work and journeyman rigging for spray work, also blowing off, \$0.80 per hour additional (applies only to workers doing rigging for spray work on off the floor work. Does not include setting up or moving rigging on floor surfaces, nor does it apply to workers engaged in covering up or tending spray equipment. For all sandblasting and spray work performed on highway bridges, overpasses, tanks or steel, \$0.80 per hour additional. For all brushing, cleaning and other preparatory work (other than spraying or steeplejack work) at scaffold heights of fifty (50) feet from the ground or higher, \$0.50 per hour

additional. For all preparatorial work and painting performed on open steel under forty (40) feet when no scaffolding is involved, \$0.50 per hour additional. For all swing stage work-window jacks and window belts-exterior and interior, \$0.50 per hour additional. For all spray work and sandblaster work to a scaffold height of forty (40) feet above the floor level, \$0.80 per hour additional. For all preparatorial work and painting on all highway bridges or overpasses up to forty (40) feet in height, \$0.50 per hour additional. For all steeplejack work performed where the elevation is forty (40) feet or more, \$1.25 per hour additional.

PAIN0312-001 06/01/2018

EXCLUDES: ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); INCLUDES: Barry, Berrien, Branch, Calhoun, Cass, Hillsdale, Kalamazoo, St. Joseph, Van Buren

	Rates	Fringes
PAINTER		
Brush and roller.....	\$ 23.74	13.35
Spray, Sandblast, Sign		
Painting.....	\$ 24.94	13.35

PAIN0845-003 05/10/2018

CLINTON COUNTY; EATON COUNTY (does not include the townships of Bellevue and Olivet); INGHAM COUNTY; IONIA COUNTY (east of Hwy. M 66); LIVINGSTON COUNTY (west of the eastern city limits of Howell, including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); AND SHIAWASSEE COUNTY (Townships of Bennington, Laingsbury and Perry):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-015 05/10/2018

MUSKEGON COUNTY; NEWAYGO COUNTY (except the Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OCEANA COUNTY; OTTAWA COUNTY (except the townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-018 05/10/2018

ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); IONIA COUNTY (west of Hwy. M-66); KENT, MECOSTA AND MONTCALM COUNTIES; NEWAYGO COUNTY (Townships of

Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OSCEOLA COUNTY (south of Hwy. #10); OTTAWA COUNTY (Townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

FOOTNOTES: Lead abatement work: \$1.00 per hour additional.

PAIN1011-003 06/02/2022

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 24.66	14.99

FOOTNOTES: High pay (bridges, overpasses, watertower): 30 to 80 ft.: \$.65 per hour additional. 80 ft. and over: \$1.30 per hour additional.

PAIN1474-002 06/01/2010

HURON COUNTY; LAPEER COUNTY (east of Hwy. M-53); ST. CLAIR, SANILAC AND TUSCOLA COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 23.79	12.02

FOOTNOTES: Lead abatement work: \$1.00 per hour additional. Work with any hazardous material: \$1.00 per hour additional. Sandblasting, steam cleaning and acid cleaning: \$1.00 per hour additional. Ladder work at or above 40 ft., scaffold work at or above 40 ft., swing stage, boatswain chair, window jacks and all work performed over a falling height of 40 ft.: \$1.00 per hour additional. Spray gun work, pick pullers and those handling needles, blowing off by air pressure, and any person rigging (setting up and moving off the ground): \$1.00 per hour additional. Steeplejack, tanks, gas holders, stacks, flag poles, radio towers and beacons, power line towers, bridges, etc.: \$1.00 per hour additional, paid from the ground up.

PAIN1803-003 06/01/2024

ALCONA, ALPENA, ANTRIM, ARENAC, BAY, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, GRATIOT, IOSCO, ISABELLA, KALKASKA, LAKE, LEELANAU, MANISTEE, MASON, MIDLAND, MISSAUKEE, MONTMORENCY AND OGEMAW COUNTIES; OSCEOLA COUNTY (north of Hwy. #10); OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW AND WEXFORD COUNTIES:

	Rates	Fringes
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PAINTER

Work performed on water,
bridges over water or
moving traffic, radio and
powerline towers, elevated
tanks, steeples, smoke
stacks over 40 ft. of
falling heights, recovery
of lead-based paints and
any work associated with
industrial plants, except
maintenance of industrial
plants.....\$ 29.35 19.05
All other work, including
maintenance of industrial
plant.....\$ 29.35 19.05

FOOTNOTES: Spray painting, sandblasting, blowdown associated
with spraying and blasting, water blasting and work
involving a swing stage, boatswain chair or spider: \$1.00
per hour additional. All work performed inside tanks,
vessels, tank trailers, railroad cars, sewers, smoke
stacks, boilers or other spaces having limited egress not
including buildings, opentop tanks, pits, etc.: \$1.25 per
hour additional.

PLAS0514-001 06/01/2023

ZONE 1: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, SAGINAW,
WASHTENAW AND WAYNE COUNTIES

ZONE 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,
BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,
CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,
DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE,
GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO,
IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW,
LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE,
MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE,
MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW,
ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE,
ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST.
JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
ZONE 1.....	\$ 33.00	18.51
ZONE 2.....	\$ 31.50	18.51

PLUM0190-003 05/01/2015

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY,
BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,
CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,
DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND
TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA,
IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT,
KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE,
MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA,
MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE,
MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA,

OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

	Rates	Fringes
Plumber/Pipefitter - gas distribution pipeline:		
Welding in conjunction with gas distribution pipeline work.....	\$ 33.03	20.19
All other work:.....	\$ 24.19	12.28

* TEAM0007-004 06/01/2024

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
AREA 1		
Euclids, double bottoms and lowboys.....	\$ 32.55	.75 + a+b
Trucks under 8 cu. yds.....	\$ 32.30	.75 + a+b
Trucks, 8 cu. yds. and over.....	\$ 32.40	.75 + a+b
AREA 2		
Euclids, double bottoms and lowboys.....	\$ 32.65	.75 + a+b
Trucks under 8 cu. yds.....	\$ 32.40	.75 + a+b
Trucks, 8 cu. yds. and over.....	\$ 32.50	.75 + a+b

Footnote:

- a. \$470.70 per week
b. \$68.70 daily

TEAM0247-004 04/01/2013

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE,

ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, SAGINAW, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
Sign Installer		
AREA 1		
GROUP 1.....	\$ 21.78	11.83
GROUP 2.....	\$ 25.27	11.8375
AREA 2		
GROUP 1.....	\$ 22.03	11.83
GROUP 2.....	\$ 25.02	11.8375

FOOTNOTE:

a. \$132.70 per week, plus \$17.80 per day.

SIGN INSTALLER CLASSIFICATIONS:

GROUP 1: performs all necessary labor and uses all tools required to construct and set concrete forms required in the installation of highway and street signs

GROUP 2: performs all miscellaneous labor, uses all hand and power tools, and operates all other equipment, mobile or otherwise, required for the installation of highway and street signs

TEAM0247-010 04/01/2018

AREA 1: LAPEER AND SHIAWASSEE COUNTIES

AREA 2: GENESEE, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER (Underground construction)		
AREA 1		
GROUP 1.....	\$ 23.82	19.04
GROUP 2.....	\$ 23.91	19.04
GROUP 3.....	\$ 24.12	19.04
AREA 2		
GROUP 1.....	\$ 24.12	19.04
GROUP 2.....	\$ 24.26	19.04
GROUP 3.....	\$ 24.45	19.04

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

SCOPE OF WORK: Excavation, site preparation, land balancing, grading, sewers, utilities and improvements; also including but not limited to, tunnels, underground piping, retention, oxidation, flocculation facilities, conduits, general excavation and steel sheeting for underground construction. Underground construction work shall not include any structural modifications, alterations, additions and

repairs to buildings or highway work, including roads, streets, bridge construction and parking lots or steel erection.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver on all trucks (EXCEPT dump trucks of 8 cubic yards capacity or over, pole trailers, semis, low boys, Euclid, double bottom and fuel trucks)

GROUP 2: Truck driver on dump trucks of 8 cubic yards capacity or over, pole trailers, semis and fuel trucks

GROUP 3: Truck driver on low boy, Euclid and double bottom

* SUMI2002-001 05/01/2002

	Rates	Fringes
FLAG PERSON.....	\$ 10.10 **	0.00
LINE PROTECTOR (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE)....	\$ 22.89	13.45
LINE PROTECTOR (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE).....	\$ 20.19	13.45
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES) Group 1.....	\$ 30.52	13.45
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE) Group 2.....	\$ 27.47	13.45
Pavement Marking Machine (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES) Group 1.....	\$ 26.92	13.45
Pavement Marking Machine (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE) Group 2.....	\$ 24.23	13.45

WORK CLASSIFICATIONS:

PAVEMENT MARKER GROUP 1: Drives or operates a truck mounted striper, grinder, blaster, groover, or thermoplastic melter for the placement or removal of temporary or permanent pavement markings or markers.

PAVEMENT MARKER GROUP 2: Performs all functions involved for the placement or removal of temporary or permanent pavement

markings or markers not covered by the classification of Pavement Marker Group 1 or Line Protector.

LINE PROTECTOR: Performs all operations for the protection or removal of temporary or permanent pavement markings or markers in a moving convoy operation not performed by the classification of Pavement Marker Group 1. A moving convoy operation is comprised of only Pavement Markers Group 1 and Line Protectors.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the "SA" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R. 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination.

01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

"General Decision Number: MI20240028 08/02/2024

Superseded General Decision Number: MI20230028

State: Michigan

Construction Type: Residential

Counties: Lapeer, Livingston, Macomb and Wayne Counties in Michigan.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date

0	01/05/2024
1	02/23/2024
2	04/05/2024
3	05/31/2024
4	07/05/2024
5	07/12/2024
6	07/19/2024
7	07/26/2024
8	08/02/2024

ASBE0025-004 06/01/2023

MACOMB & WAYNE COUNTIES

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 37.98	34.27

ASBE0047-006 07/01/2023

LAPEER & LIVINGSTON COUNTIES

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 36.62	19.78

BRMI0001-003 06/01/2022

MACOMB & WAYNE COUNTIES

	Rates	Fringes
TILE SETTER.....	\$ 37.88	22.67

BRMI0009-007 06/01/2020

LAPEER & LIVINGSTON COUNTIES

	Rates	Fringes
TILE SETTER.....	\$ 35.72	21.34

CARP0706-013 06/01/2023

LAPEER COUNTY

	Rates	Fringes
CARPENTER, Includes Floor Laying-Carpet (Excludes Formwork).....	\$ 32.09	22.68

CARP1004-010 06/01/2024

LIVINGSTON COUNTY (Townships of Cohoctah, Conway, Handy,
Howell, Iosco & Marion)

	Rates	Fringes
CARPENTER, Includes Floor Laying-Carpet (Excludes Formwork).....	\$ 28.41	21.06

 * CARP1234-001 08/01/2024

LIVINGSTON (Townships of Brighton, Deerfield, Genoe &
 Hartland), MACOMB & WAYNE COUNTIES

	Rates	Fringes
CARPENTER, Includes Floor Laying-Carpet (Excludes Formwork)		
Multi-family condominiums...	\$ 31.58	16.27
Single-family homes and detatched condominiums.....	\$ 29.19	15.76

ELEC0058-006 09/29/2022

LIVINGSTON (Townships of Brighton, Deerfield, Genoa, Hartland,
 Oceola and Tyrone), MACOMB & WAYNE COUNTIES

	Rates	Fringes
ELECTRICIAN, Includes Low Voltage Wiring.....	\$ 28.11	14.76

ELEC0252-004 06/01/2024

LIVINGSTON COUNTY (Townships of Green Oak, Hamburg, Putnam and
 Unadilla)

	Rates	Fringes
ELECTRICIAN, Includes Low Voltage Wiring.....	\$ 36.65	20%+13.05

ELEC0665-011 05/31/2022

LIVINGSTON COUNTY (Townships of Cohoctah, Conway, Handy,
 Howell, Iosco and Marion)

	Rates	Fringes
ELECTRICIAN, Includes Low Voltage Wiring.....	\$ 31.20	9.25+5.5%

ELEC0948-005 11/29/2023

LAPEER COUNTY

	Rates	Fringes
ELECTRICIAN, Includes Low Voltage Wiring.....	\$ 31.49	31.95%+9.25

ELEV0036-001 01/01/2024

MACOMB & WAYNE COUNTIES

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 62.36	37.885+a+b

FOOTNOTE:

Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and Friday after, and Christmas Day.

ELEV0085-001 01/01/2024

LAPEER & LIVINGSTON COUNTIES

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 62.78	37.885+a+b

FOOTNOTE:

a.Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service.

b.Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and Friday after, and Christmas Day.

ENGI0325-006 06/01/2024

MACOMB & WAYNE COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 49.54	25.35
GROUP 2.....	\$ 48.04	25.35
GROUP 3.....	\$ 46.54	25.35
GROUP 4.....	\$ 46.24	25.35
GROUP 5.....	\$ 45.42	25.35
GROUP 6.....	\$ 44.56	25.35
GROUP 7.....	\$ 43.59	25.35

FOOTNOTES:

Tower cranes: to be paid the crane operator rate determined by the combined length of the mast and the boom. If the worker must climb 50 ft. or more to the work station, \$.25 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane with boom and jib or leads 400' or longer

GROUP 2: Crane with boom and jib or leads 300' or longer

GROUP 3: Crane with boom and jib or leads 220' or longer

GROUP 4: Crane with boom and jib or leads 140' or longer

GROUP 5: Crane with boom and jib or leads 120' or longer

GROUP 6: Regular crane operator

GROUP 7: Backhoe/Excavator; Bobcat/Skid Loader; Bulldozer; Grader/Blade; Scraper; Loader

 ENGI0325-028 06/01/2024

LAPEER & LIVINGSTON COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 47.28	25.25
GROUP 2.....	\$ 43.93	25.25
GROUP 3.....	\$ 41.28	25.25
GROUP 4.....	\$ 38.57	25.25

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50
 per hour above the group 1 rate.
 Crane operator with main boom and jib 400' or longer: \$3.00
 per hour above the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July,
 Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Crane operator with main boom and jib 400', 300', or
 220' or longer.

GROUP 2: Crane operator with main boom and jib 140' or
 longer, tower crane, gantry crane, whirley derrick

GROUP 3: Backhoe/Excavator; Bulldozer; Crane; Grader/Blade;
 Loader; and Scraper

GROUP 4: Bobcat/ Skid Loader

 IRON0025-004 06/01/2024

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 35.55	35.83

 LAB00334-020 06/01/2024

	Rates	Fringes
Landscape Laborer		
GROUP 1.....	\$ 28.60	11.60
GROUP 2.....	\$ 26.34	11.60

LANDSCAPE LABORER CLASSIFICATIONS

GROUP 1: Landscape specialist, including air, gas and diesel
 equipment operator, lawn sprinkler installer, skidsteer (or
 equivalent)

GROUP 2: Landscape laborer: small power tool operator,
 material mover, truck driver and lawn sprinkler installer
 tender

 * LAB00499-009 08/01/2024

LIVINGSTON COUNTY

	Rates	Fringes
LABORER.....	\$ 16.72 **	12.75
Common or General; Formwork; Mason Tender - Cement/Concrete		
LIVINGSTON COUNTY (West of Oak Grove Road & west of Pnkney Road & Dexter- Pinkney Road, including the City of Howell).....	\$ 16.38 **	12.46
SE Portion of Livingston county, M-59 on the north, Oak Grove Road on the west, south from Howell to and including Pinckney.....	\$ 36.16	14.95

LABO1075-008 06/01/2024

LAPEER COUNTY

	Rates	Fringes
LABORER		
Common or General; Formwork; Mason Tender - Cement/Concrete.....	\$ 28.41	15.70

LABO1076-004 06/01/2024

LIVINGSTON COUNTY (North of Highway M-59 and east of Oak Grove Road)

	Rates	Fringes
LABORER		
Common or General; Formwork; Mason Tender - Cement/Concrete.....	\$ 35.34	17.75

LABO1191-001 06/01/2024

MACOMB AND WAYNE COUNTIES

	Rates	Fringes
Laborers:		
Common or General; Formwork; Mason Tender - Cement/Concrete.....	\$ 35.34	17.75

PAIN0022-008 07/01/2008

LIVINGSTON (East of Howell, north to Genesee County & south to Washtenaw County), MACOMB & WAYNE COUNTIES

	Rates	Fringes
PAINTER: Brush and Roller.....	\$ 20.14	14.72

PAIN0845-025 05/21/2022

LIVINGSTON COUNTY (City of Howell & west of Howell, north to
Genesee County & south to Washtenaw County)

	Rates	Fringes
PAINTER: Brush and Roller.....	\$ 18.99	15.64

PAIN1052-005 02/01/2013		

LAPEER COUNTY (West of Hwy. M-53)

	Rates	Fringes
PAINTER: Brush and Roller.....	\$ 22.25	11.10

PAIN1474-001 06/01/2010		

LAPEER COUNTY (East of Hwy. M-53)

	Rates	Fringes
PAINTER: Brush and Roller.....	\$ 23.79	12.02

PLUM0098-007 06/01/2022		

LIVINGSTON (Township of Brighton), MACOMB & WAYNE COUNTIES

	Rates	Fringes
PLUMBER (Excluding HVAC Pipe Installation).....	\$ 27.06	23.52

PLUM0190-008 06/01/2021		

LIVINGSTON COUNTY (Townships of Green Oak and Hamburg)

	Rates	Fringes
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 44.31	0.00
PLUMBER (Excluding HVAC Pipe Installation).....	\$ 42.26	23.70

PLUM0333-011 06/18/2018		

LIVINGSTON COUNTY (except the townships of Brighton, Green Oak
and Hamburg):

	Rates	Fringes
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 25.82	18.47
PLUMBER (Excluding HVAC Pipe Installation).....	\$ 25.82	18.47

PLUM0370-005 06/01/2018		

LAPEER COUNTY

Rates	Fringes
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PIPEFITTER (HVAC Pipe Installation Only).....	\$ 26.46	20.60
PLUMBER (Excluding HVAC Pipe Installation).....	\$ 26.46	20.60

PLUM0636-006 06/05/2022

LIVINGSTON (Township of Brighton), MACOMB & WAYNE COUNTIES

	Rates	Fringes
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 41.61	29.35

ROOF0070-009 07/08/2024

LIVINGSTON COUNTY

	Rates	Fringes
ROOFER.....	\$ 41.17	20.37

ROOF0149-022 06/01/2024

LAPEER COUNTY

	Rates	Fringes
ROOFER.....	\$ 30.38	19.87

ROOF0149-023 06/01/2021

MACOMB & WAYNE COUNTIES

	Rates	Fringes
ROOFER.....	\$ 38.16	25.91

SHEE0007-016 05/01/2018

LAPEER COUNTY

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation.....	\$ 24.88	8.76

SHEE0007-026 05/01/2018

LIVINGSTON COUNTY

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation.....	\$ 24.93	9.65

SHEE0080-006 07/01/2022

MACOMB & WAYNE COUNTIES

	Rates	Fringes
SHEET METAL WORKER, Includes		

HVAC Duct and Unit

Installation.....\$ 28.67 9.50

TEAM0247-005 06/01/2018

MACOMB & WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Pickup.....	\$ 26.71	0.70+a

PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If any of the above holidays fall on a Sunday, the following Monday shall be considered the holiday and, if work is performed, the rate shall be double time.

FOOTNOTE:

a. \$438.45 per week, plus \$64.50 per day.

* SUMI2010-026 09/16/2010

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 19.27	5.85
GLAZIER.....	\$ 23.00	8.17
LABORER: Pipelayer.....	\$ 17.99	5.46
SPRINKLER FITTER (Fire Sprinklers).....	\$ 22.32	4.51
TRUCK DRIVER: Dump Truck.....	\$ 17.00 **	5.71

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is

like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the "SA" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R. 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

----- WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"

"General Decision Number: MI20240101 09/06/2024

Superseded General Decision Number: MI20230101

State: Michigan

Construction Type: Building

County: Wayne County in Michigan.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	01/19/2024

2	04/05/2024
3	05/31/2024
4	07/05/2024
5	07/12/2024
6	07/26/2024
7	08/23/2024
8	09/06/2024

ASBE0025-002 06/01/2023

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 37.98	34.27

BOIL0169-001 01/01/2024

	Rates	Fringes
BOILERMAKER.....	\$ 39.65	35.68

BRMI0001-001 06/01/2022

	Rates	Fringes
BRICKLAYER.....	\$ 38.87	25.18
TILE FINISHER.....	\$ 30.75	22.67
TILE SETTER.....	\$ 37.88	22.67

CARP0687-003 06/01/2023

	Rates	Fringes
CARPENTER (Including Acoustical Ceiling Installation, Drywall Hanging, Form Work, Metal Stud Installation & Scaffold Building).....	\$ 40.98	30.22

CARP1045-001 06/01/2024

	Rates	Fringes
CARPENTER (Floor Layer - Carpet, Resilient, & Vinyl Flooring).....	\$ 34.09	20.81

CARP1102-002 06/01/2024

	Rates	Fringes
MILLWRIGHT.....	\$ 36.47	40.52

ELEC0058-001 07/21/2022

	Rates	Fringes
ELECTRICIAN (Low Voltage Wiring and Installation of Alarms) Installer.....	\$ 30.12	14.57
Technician.....	\$ 39.33	14.95
ELECTRICIAN.....	\$ 48.52	26.11

ELEV0036-002 01/01/2024

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 62.36	37.885+a+b

FOOTNOTES:

A. PAID HOLIDAYS: New Years Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

B. Employer contributes 8% basic hourly rate for 5 years or more of service of 6% basic hourly rate for 6 months to 5 years of service as vacation pay credit.

ENGI0324-017 06/01/2024

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 49.54	25.35
GROUP 2.....	\$ 48.04	25.35
GROUP 3.....	\$ 46.54	25.35
GROUP 4.....	\$ 46.24	25.35
GROUP 5.....	\$ 45.42	25.35
GROUP 6.....	\$ 44.56	25.35
GROUP 7.....	\$ 43.59	25.35
GROUP 8.....	\$ 41.88	25.35
GROUP 9.....	\$ 31.79	25.35

FOOTNOTES:

Tower cranes: to be paid the crane operator rate determined by the combined length of the mast and the boom. If the worker must climb 50 ft. or more to the work station, \$.25 per hour additional.

Derrick and cranes where the operator must climb 50 ft. or more to the work station, \$.25 per hour additional to the applicable crane operator rate.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane with boom and jib or leads 400' or longer

GROUP 2: Crane with boom and jib or leads 300' or longer

GROUP 3: Crane with boom and jib or leads 220' or longer

GROUP 4: Crane with boom and jib or leads 140' or longer

GROUP 5: Crane with boom and jib or leads 120' or longer

GROUP 6: Regular crane operator, and concrete pump with boom operator

GROUP 7: Backhoe/Excavator/Trackhoe, bobcat/skid Loader, broom/sweeper, bulldozer, grader/blade, highlift, hoist, loader, roller, scraper, tractor & trencher

GROUP 8: Forklift & extend-a-boom forklift

GROUP 9: Oiler

IRON0025-019 06/01/2024

	Rates	Fringes
IRONWORKER		
REINFORCING.....	\$ 33.43	37.15
STRUCTURAL.....	\$ 35.55	35.83

IRON0025-022 06/01/2022

	Rates	Fringes
IRONWORKER STRUCTURAL (Metal Building Erection Only).....	\$ 25.81	26.43

* LAB00259-002 08/01/2024

	Rates	Fringes
LABORER: Asbestos Abatement (Removal from Floors, Walls & Ceilings).....	\$ 36.53	15.92

LAB00334-005 06/01/2024

	Rates	Fringes
LABORER: Landscape & Irrigation		
GROUP 1.....	\$ 28.60	11.60
GROUP 2.....	\$ 26.34	11.60

CLASSIFICATIONS

GROUP 1: Landscape specialist, including air, gas and diesel equipment operator, lawn sprinkler installer, skidsteer (or equivalent)

GROUP 2: Landscape laborer: small power tool operator, material mover, truck driver and lawn sprinkler installer tender

LAB01191-002 06/01/2024

	Rates	Fringes
LABORER		
Common or General; Grade Checker; Mason Tender - Brick/Cement/Concrete; Pipelayer; Sandblaster.....	\$ 35.34	17.75

PAIN0022-003 06/01/2022

	Rates	Fringes
PAINTER: Brush and Roller.....	\$ 32.85	20.41
PAINTER: Drywall Finishing/Taping.....	\$ 32.85	20.41
PAINTER: Spray.....	\$ 26.86	17.66

PAIN0357-002 06/01/2023

	Rates	Fringes
GLAZIER.....	\$ 38.66	20.98

PAID HOLIDAYS: New Year's Day, Decoration Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day; provided that the employee has worked the last full regular scheduled work day prior to the holiday, and the first full regular scheduled work day following the holiday, provided the employee is physically able to work.

PLAS0067-001 04/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 30.63	14.07

PLAS0067-004 04/01/2014

	Rates	Fringes
PLASTERER.....	\$ 30.63	14.07

PLUM0098-001 06/01/2023

	Rates	Fringes
PLUMBER, Excludes HVAC Pipe and Unit Installation.....	\$ 35.79	28.28

PLUM0636-003 06/05/2023

	Rates	Fringes
PIPEFITTER, Includes HVAC Pipe and Unit Installation.....	\$ 44.70	35.37

ROOF0149-001 07/01/2021

	Rates	Fringes
ROOFER.....	\$ 38.16	25.91

SFMI0704-001 08/01/2024

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 52.16	33.46

SHEE0080-004 06/01/2024

	Rates	Fringes
SHEET METAL WORKER (Including HVAC Duct Installation; Excluding HVAC System Installation).....	\$ 42.51	35.77

TEAM0247-001 06/01/2024

	Rates	Fringes
TRUCK DRIVER		

GROUP 1

Flatbed; Pickup; Dump &

Tandem.....\$ 30.35 0.70+a+b

GROUP 2

Semi.....\$ 30.50 0.70+a+b

GROUP 3

Lowboy.....\$ 30.60 0.70+a+b

PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If any of the above holidays fall on a Sunday, the following Monday shall be considered the holiday and, if work is performed, the rate shall be double time.

FOOTNOTE:

a. \$456.70 per week, plus \$67.10 per day.

* SUMI2011-026 02/01/2011

	Rates	Fringes
INSTALLER - OVERHEAD DOOR.....	\$ 27.98	0.00
IRONWORKER, ORNAMENTAL.....	\$ 18.48	7.93
TRUCK DRIVER: Tractor Haul		
Truck.....	\$ 13.57 **	1.18

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after

award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage

determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

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----- WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
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etc.) that the requestor considers relevant to the issue.

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4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

ADVERTISEMENT FOR BID

This bid is a “sealed construction bid” and the bid contract will be awarded to the lowest “total cost” qualified bidder according to CFR 200 federal procurement rules and regulations.

This project is funded fully by federal funds from the HUD/Community Development Block Grant (CDBG) program administered by the U.S. Department of Housing and Urban Development.

This project is subject to all applicable HUD rules and regulations including federal Davis-Bacon prevailing wages, BABA and Section 3, and all applicable city ordinances.

This bid is processed according to title 2-CFR 200 guidelines

Women, minorities, veterans, small business owners, and section 3 contractors are encouraged to participate and respond to this bid request.

THIS BID PACKAGE IS PUBLISHED ON OCTOBER 4TH, 2024, AND CAN BE OBTAINED AS INDICATED BELOW:

Sealed bids must be received by the Comptroller's Office, City of Dearborn Heights, 6045 Fenton, Dearborn Heights, on or before October 15, 2024, by 3:00 PM – by responding on Bidnet or by hand delivery. At which time, as indicated (October 15, 2024, by 3:00 PM) all bids will be publicly opened and read aloud.

This bid evaluation and award is based on the lowest cost qualified bidder according to the qualifications required in this published bid package in compliance with the federal procurement rules and regulations.

Bid package can be obtained online by registering (free registration) on Bidnet. Go to www.govbids.com. Select the Michigan MITN System.

Bid package can be obtained in person, free of charge from the City of Dearborn Heights Comptroller’s Office located at 6045 Fenton, Dearborn Heights, MI 48127, Monday through Thursday from 8.00 AM-5:00PM.

Bid package can also be obtained by downloading it from the City of Dearborn Heights’ website at www.dearbornheightsmi.gov.

For additional information related to the project, please email:
Parks and Recreation Director Kim Sower at ksower@dearbornheightsmi.gov

And copy:

CEDD Director Hassane Jamal at hjamal@dearbornheightsmi.gov

City Engineer Ali Dib at adib@dearbornheightsmi.gov

Bid submission questions can be directed to Mathew Paul at mpaul@dearbornheightsmi.gov

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

All emails will be documented for record and any changes in the bid package will be published by bid amendments.

Any modifications or alternatives to the bid package by the bidders will disqualify the bid.

All information/communications about this bid must be done by email.

Due to funding limitations, the City of Dearborn Heights/CEDD reserves the right to choose certain tasks only and calculate the total bid cost from the qualified bidders.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

BID INDEX

- This package includes the following documents:
- Instructions to bidders
- Bid responses forms
- Non-discrimination clause
- Reference forms
- Bid specifications/requirements/compliance
- General bid conditions and obligations
- Mandatory site visitation acknowledgement
- Contract agreement sample

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

INSTRUCTIONS TO BIDDERS

At the time of opening, any bid that does not meet the requirements will be marked as “does not meet bid specifications” and automatically disqualified.

It is agreed, if the bidder to whom the contract shall have been awarded shall refuse or neglect to execute the contract and properly secure the same within ten (10) days, the amount of the bid deposit shall be forfeited to and retained by the Owner as liquidated damages for such neglect or refusal.

Further, if the successful bidder fails to comply with the terms of the bid proposal, contract, or purchase order, the City has the option to hold the successful bidder to the terms of the proposal or forfeit the bid deposit as liquidated damages.

Bidder will identify business entity as individual, or if doing business under assumed name, indicate assumed name, partnership (Naming Partners), Corporation, Foreign or Domestic (Naming Principal Officers), and indicate capacity or person executing proposal and bid.

Revised: 11/27/79 (Council Motion 79-1003)

And also, on:

1/08/80 (Council Motion 80-15)

And also, on:

6/12/91 (Council Motion 91-299)

**THIS PROJECT IS TIME-SENSITIVE, AND THE OBJECTIVE IS TO COMPLETE AND PAY-OFF THIS PROJECT BY
NOVEMBER 31, 2024.**

WORK MUST START IMMEDIATELY BY WINNING BIDDER UPON SIGNING THE CONTRACT.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

ADDITIONAL INSTRUCTIONS TO BIDDERS

Sealed bid must be received on time (time stated in "advertisement for bids"). Proposal shall be addressed to: Comptroller, City of Dearborn Heights, 6045 Fenton, Dearborn Heights, Michigan, 48127, in a sealed envelope marked:

"VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT"

For your bid to be qualified and considered, please include the following 3 items in your sealed bid package:

1. The three (3) page "bid response form," signed and notarized (page #3).
2. The mandatory site visit acknowledgement signed by the CEDD project coordinator Mr. Hassan Bazzi.
3. Certified or cashier's check in the amount of 5% or 5% bid bond of the gross sum bid. Should the gross sum bid be \$5,000.00 or less, a certified cashier's check or bid bond will not be required to validate the bid proposal.

If you are the lowest of the qualified bidder, you will be contacted to submit the following qualification documents within ten (10) business days from date of request. Please do not submit these documents in the sealed bid. Failure to submit the following documents within the allotted time will constitute disqualification. (The bid winner will be the lowest, most qualified bidder.)

1. Non-discrimination clause.
2. Reference form (3 references from similar projects).
3. Copy of certificate of good standing (Michigan Department of Labor and Economic Growth, Bureau of Commercial Services, Corporation Division P.O. Box 30054 Lansing, Michigan 48909-7554. Phone - (517) 241-6470 for copies, certificates, or general information).
4. Copy of Articles of Incorporation (Michigan Department of Labor and Economic Growth, Bureau of Commercial Services, Corporation Division P.O. Box 30054 Lansing, Michigan 48909-7554 phone - (517) 241-6470 for copies, certificates, or general information).
5. A valid certificate of liability insurance naming the city of Dearborn Heights as a holder. All general contractors and subcontractors, on all work done under the contract, are required to carry full workman's compensation insurance and comprehensive public liability insurance coverage, protecting the owner for not less than \$1,000,000 in the event of bodily injury, including death, and \$1,000,000 in the event of property damage arising out of the work performed by the contractor.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

6. Copies of all applicable licenses (driver, state issued ID., building, electrical, plumbing, mechanical, asbestos, lead, etc.)
7. Any other supportive documentation the city may request to qualify the bidder.

If you are the bid winner, before contract signing, you must submit a work performance bond, labor and materials bond, and warranty/maintenance bond.

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

BID RESPONSE FORM PAGE #1

Notice:

Failure to complete this form shall result in your response being deemed non-responsive and rejected without any further evaluation.

This project is funded partially/fully by federal funds from the Community Development Block Grant (CDBG) program administered by the U.S. Department of Housing and Urban Development.

This project is subject to all applicable HUD rules and regulations, including federal Davis-Bacon wage rules and regulations and all applicable city regulations.

The undersigned hereby offers and agrees to furnish the goods and/or services in compliance with the city's sealed bid, which includes all documents outlined in the bid package index.

Agree: please sign and complete bid documents

_____ Date: ____ / ____ / ____

Disagree: stop here, you are not qualified to bid

_____	\$ _____
(Total figure written)	(Total figure)
(Total figure from itemized bid sheets)	

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

BID RESPONSE FORM PAGE #2

ADDENDA:

The undersigned has read, understands, and is fully cognizant of the information to Respondents Offer and Form of Contract, all sections thereto, together with any written addendum issued in connection with any of the above. The undersigned hereby acknowledges receipt of the following addendum(s): none. In addition, the undersigned has completely and appropriately filled out all required forms.

OBLIGATION:

The undersigned, by submission of this Offer, hereby agrees to be obligated, if selected as the Contractor, to provide the stated goods and/or services to the City, and to enter a Contract with the City, in accordance with all terms and bid documents as indicated in the bid table of content, and addenda in the Request for Response, as well as the Form of Contract, together with any written addendum as specified above.

COMPLIANCE:

The undersigned hereby accepts all administrative requirements of the Sealed Bid and will be in-compliance with such requirements. By submitting this Response Form, the Respondent represents that: 1) the Respondent is in compliance with any applicable City and HUD regulations, and 2) if awarded a contract to provide the services required in the Sealed Bid, the Respondent will comply with the requirements set forth in the Sealed Bid and (3) Respondent will sign the Construction / installation / installation Contract (attached to Bid Package for reference) if awarded the Contract. Failure to sign the Construction / installation / installation Contract within fourteen (14) days of notification of award of contract will result in a breach and Respondent will forfeit his/her bid bond.

NONCOLLUSION:

The undersigned, by submission of this Response Form, hereby declares that this Response is made without collusion with any other business making any other Response, or which otherwise would make a Response.

SUBMITTAL REQUIREMENTS:

The undersigned certifies it has attached a complete response to each of the submittal requirements of this SEALED BID. The undersigned also certifies it has read and understands all Bid Documents as outlined in the "Bid Index Page".

MANDATORY SITE VISIT:

As indicated in the Bid Specifications/ Requirements and compliance section

**CITY OF DEARBORN HEIGHTS
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BID RESPONSE FORM PAGE #3

No Response shall be accepted which has not been manually signed in ink in the appropriate space below:

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:

For clarification of this offer, contact:

Company Name

Name:

Address:

Phone:

City

State

Zip

Fax:

Signature of Person Authorized to Sign:

Printed Name:

Title:

Federal Tax ID

Acknowledged before me by _____ (name) as _____

(title) of (Company _____) this _____ (day) of _____ (month),
20____. (Year)

Notary Signature:

My Commission Expires:

Affix Seal

**CITY OF DEARBORN HEIGHTS
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NON-DISCRIMINATION CLAUSE

NOTE: Failure to respond will cause your firm to be placed in “non-compliance” status and you will not be eligible to receive City contracts.

In connection with the performance of work under this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, national origin, age* or sex*. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, national origin, age* or sex*. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age* or sex*.

(3) The contractor or his collective bargaining representative will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or workers’ representative of the contractor’s commitments under this section.

(4) The contractor will comply with all published rules, regulations, directives, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended which may be in effect prior to the taking of bids for any individual state project.

(5) The contractor will furnish and file compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission, said forms may also elicit information as to the practices, policies, program, and employment statistics of each subcontractor as well as the contractor himself, and said contractor will permit access to his books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain compliance with this contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Section 4, Act No. 251, Public Acts of 1955, as amended.

(6) In the event that the Civil Rights Commission finds, after a hearing held pursuant to its rules, that a contractor has not complied with the contractual obligations under this agreement, the Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the Administrative Board of the State of Michigan, which Administrative Board may order the cancellation of the contract found to have been violated, and/or declare the contractor ineligible for future contracts with the state and its political and Civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the contractor

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complies with said order of the Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the contractor is declared ineligible to contract as a contracting party in future contracts. In any case before the Civil Rights Commission in which, cancellation of an existing contract is a possibility, the contracting agency shall be notified of such possible remedy and shall be given the option by the Civil Rights Commission to participate in such proceedings.

(7) The contractor will include or incorporate by reference the provisions of the foregoing paragraphs (1) through (6) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Michigan Civil Rights Commission. **And will provide in every subcontract or purchase order that said provisions will be binding upon each subcontractor or seller.

- * SECTION 3a (a) ACT NO. 344, PUBLIC ACTS OF 1965, AS
AMENDED BY ACT NO. 349, PUBLIC ACTS OF 1966, READS:

“IT IS AN UNFAIR EMPLOYMENT PRACTICE:

(a) FOR ANY EMPLOYER, BECAUSE ANY INDIVIDUAL IS BETWEEN THE AGES OF 35 AND 60, OR BECAUSE OF THE SEX OF ANY INDIVIDUAL, TO REFUSE TO HIRE OR OTHERWISE TO DISCRIMINATE AGAINST HIM WITH EMPLOYMENT. ANY SUCH REFUSAL TO HIRE OR DISCRIMINATION SHALL NOT BE AN UNFAIR EMPLOYMENT PRACTICE IF BASED ON LAW, REGULATION, THE REQUIREMENTS OF ANY FEDERAL OR STATE TRAINING OR EMPLOYMENT PROGRAM OR ON A BONA FIDE OCCUPATIONAL QUALIFICATION AND EXCEPT IN SELECTING INDIVIDUALS FOR AN APPRENTICE PROGRAM OR AN ON-THE-JOB TRAINING PROGRAM INTENDED TO HAVE A DURATION OF MORE THAN 4 MONTHS.”

** Except for those:

1. Subcontracts for goods or services in any amount of less than \$5,000.
2. Subcontracts entered into with parties employing less than three employees.

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I acknowledge that I have reviewed and understand the seven (7) foregoing clauses and We (the company) will adhere to the City's non-discrimination policy.

Name of Company_____

Signature_____ Title_____
Date_____

**CITY OF DEARBORN HEIGHTS
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VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

REFERENCE FORM

PROJECT OWNER

Project Owner Name: _____

Project Total Value: \$ _____

Project Owner Contact Information:

Phone #: _____ Fax #: _____

E-Mail: _____

Did the Project Start on Projected Starting Date: YES / NO, If No please give reason:

Was the project completed, and accepted by the owner with no pending conditions:

YES / NO, If No please give reason:

PROJECT COMPLETED BY:

Bidder Name:

Address _____ Zip: _____

Phone #: _____ Fax #: _____

E-Mail: _____

Project Name: _____

Project Address: _____

Project description:

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

I/We hereby certify that all data provided in this form is correct and authorize the City of Dearborn Heights to investigate, collect and verify as needed.

Name: _____ Official Title: _____

Signature: _____ Date: _____

**CITY OF DEARBORN HEIGHTS
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VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

REFERENCE FORM

PROJECT OWNER

Project Owner Name: _____

Project Total Value: \$_____

Project Owner Contact Information:

Phone #: _____ Fax #: _____

E-Mail: _____

Did the Project Start on Projected Starting Date: YES / NO, If No please give reason:

Was the project completed, and accepted by the owner with no pending conditions:

YES / NO, If No please give reason:

PROJECT COMPLETED BY:

Bidder Name:

Address _____ Zip: _____

Phone #: _____ Fax #: _____

E-Mail: _____

Project Name: _____

Project Address: _____

Project description:

**CITY OF DEARBORN HEIGHTS
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Name: _____ Official Title: _____

Signature: _____ Date: _____

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
VAN HOUTEN PARK IMPROVEMENT PROJECT-PARKING LOT REPLACEMENT
LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127
REFERENCE FORM**

PROJECT OWNER

Project Owner Name: _____

Project Total Value: \$_____

Project Owner Contact Information:

Phone #: _____ Fax #: _____

E-Mail: _____

Did the Project Start on Projected Starting Date: YES / NO, If No please give reason:

Was the project completed, and accepted by the owner with no pending conditions:

YES / NO, If No please give reason:

PROJECT COMPLETED BY:

Bidder Name:

Address _____ Zip: _____

Phone #: _____ Fax #: _____

E-Mail: _____

Project Name: _____

Project Address: _____

Project description:

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I/We hereby certify that all data provided in this form is correct and authorize the City of Dearborn Heights to investigate, collect and verify as needed.

Name: _____ Official Title: _____

Signature: _____ Date: _____

**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD)
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All work shall be done in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). All work shall be done in accordance with the foregoing applicable ordinances, and all related City, County, State codes/ordinances, along with the attached drawings, item descriptions and general bid Itemization/specifications. Where differences occur, the program bid information package shall apply. (Where applicable)

The contractor shall be responsible for repairing all work-related damage and replacing it with same in kind to the satisfaction of the City of Dearborn Heights at no additional cost.

PERMITS:

The Contractor is required to secure the necessary PERMITS AND INSPECTIONS from the City Building and Engineering Department, County and State, if necessary, for all work.

FEDERAL DAVIS-BACON WAGE RULES AND REGULATIONS (FOR PROJECTS \$2000.00 AND ABOVE):

Contractor workers may be interviewed on site as part of Davis Bacon regulations.

All wages shall comply with current prevailing wages as stated in the Davis Bacon "Federal Labor Standards Provisions."

No work shall be started until all required Davis Bacon documents are on file.

CHANGE ORDERS:

In the event of a situation in the field that requires extra work, a change order may be requested. The program administrator will approve all change orders.

START OF WORK:

A pre-construction / installation meeting is required before start of work.

QUALIFICATION:

Bidder shall not be debarred from participating in federally funded projects.
<https://www.sam.gov/portal/SAM/##11>

The City shall reserve the right to correct, adjust and extend the bid at any time before the bid submission due time/date.

The City shall reserve the right to request additional information and documentation related to this bid from bidders and bidders shall provide all requests of additional information and documentation within ten (10) business days from date of request.

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The City shall reserve the right to cancel, re-bid, accept, and or postpone the bid in whole or in part, waive any irregularities or formalities without explanation.

PAYMENT/COMPENSATION:

Please refer to the Services Agreement Sample Document.

GENERAL DAMAGES/LIQUIDATED DAMAGES/DEFAULT:

Please refer to the Services Agreement Sample Document.

DOCUMENTATION:

Please refer to "ADDITIONAL INSTRUCTIONS TO BIDDERS" Page of the Bid Package

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LOCATED AT 6000 SILVERY LANE, DEARBORN HEIGHTS, MI 48127**

MANDATORY SITE VISITATION ACKNOWLEDGEMENT

I _____ On _____ behalf _____ of _____

(Print name) (Print company name)

have visited the locations specified in this bid packet and made all the appropriate measurements, quotations, pictures, etc., as deemed necessary for this bid.

CDBG Rehabilitation Specialist

To schedule the mandatory walk thru for this Bid please contact:

Hassan Bazzi

Phone: 313 -791- 3504 Fax: 313 -791- 3501

Email: hbazzi@dearbornheightsmi.gov

Address: 26155 Richardson, Dearborn Heights, MI 48127

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**CITY OF DEARBORN HEIGHTS
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT (CEDD
VAN HOUTEN PARK IMPROVEMENTPROJECT
PARKING LOT REPLACEMENT
CONTRACT AGREEMENT
SAMPLE**

ATTENTION: THIS PROJECT IS FUNDED PARTIALLY/FULLY BY FEDERAL FUNDS FROM THE COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) PROGRAM ADMINISTERED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT. THIS PROJECT IS SUBJECT TO ALL APPLICABLE HUD RULES AND REGULATIONS INCLUDING FEDERAL DAVIS-BACON WAGE RULES AND ALL APPLICABLE CITY REGULATIONS.

ARTICLE I - PARTIES OF AGREEMENT: REGULATIONS

This agreement ("Agreement") is entered into the date executed below, between the City of Dearborn Heights hereinafter referred to as "City", and hereafter referred to as "Contractor", with its principal offices located at xyz- 123. This Agreement formalizes the understanding between the City and Contractor Name: xyz . stemming from the City's VAN HOUTEN PARK IMPROVEMENTPROJECT
PARKING LOT REPLACEMENT

ARTICLE II - WORK TO BE PERFORMED (Scope of Work):

Except as otherwise provided herein, Contractor shall furnish all labor, material, tools, equipment, supervision and services necessary to properly execute and complete the Project. The Project shall be performed by Contractor in good and workman like manner strictly in accordance with the City's request for bids, the City's bid conditions and obligations and the Contractor's bid, all of which are incorporated by reference. The Project will commence within ten (10) days upon execution of the Agreement and shall be completed no later than 60 days from this agreement execution, extensions are allowable and approved by the project manager based on case-by-case situations, otherwise, the Contractor will be subject to liquidated damages.

ARTICLE III- TERMS INCORPORATED BY REFERENCE

This Agreement incorporates the City's Advertisement for Bids and all documents contained therein, and the Contractor's bid as submitted by reference ("Contract Documents"). Contractor shall be bound by the terms of the Agreement between City and Contractor and all documents incorporated therein.

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ARTICLE IV - COMPENSATION:

The contractor agrees that the total quoted price amount as set forth in its Contract Documents, namely the bid itemizations/specifications shall be price used to compensate Contractor per unit.

ARTICLE V - PAYMENTS:

- A) **INVOICES** - The Contractor will be paid on a regular basis, no later than thirty (30) days after receipt of proper invoices, certifications, and progress reports.
- B) **PAYMENT/BOND** - Payments will be made on a reimbursement basis for services and work actually and satisfactorily performed to the reasonable discretion of the City ("Final Acceptance"), subject to payment of the final invoice being withheld pending final completion and acceptance of the work.
- C) **FINAL PAYMENT** - A final payment consisting of the unpaid balance of the Contractor's Compensation shall be made within ten (10) days after both of the following occur: (a) full completion of the work by contractor, (b) Final Acceptance of the work by the City.

ARTICLE VI - SPECIAL REQUIREMENTS:

SCHEDULE - Time is the essence of this Agreement and the Project shall be performed in accordance with the City's Request for Bids and the City's Bid Conditions and Obligations for this Program. Contractor agrees to commence the Project under this Agreement after a pre-construction/pre-installation meeting has been held and to punctually and diligently perform all parts of the Project.

If the Contractor is behind in the Project hereunder, fails or refuses to supply sufficient workmen, or to deliver materials or equipment on schedule, and delays progress of the Project; or if the different parts thereof are not commenced, performed, finished and delivered on time, City shall have the right to direct the Contractor to furnish additional labor and expedite deliveries of material and equipment at contractor's cost and expense. If such additional labor is not available, City has the right to require Contractor at the Contractor's cost, to work overtime or additional shifts (and/or weekends and holidays) to such an extent as will be sufficient to speed up and complete the Project in accordance with a progress schedule.

If City incurs any cost associated with the Contractor's delay with respect to the completion dates identified in Article II, the Contractor is to reimburse City for all costs associated with Contractor's delay including any liquidated damages assessed against City

ARTICLE VII - CHANGES:

- A) **Definitions- Change Order:** A written order signed and issued by the City, namely the Director/Project Manager and his authorized representative to sign and issue the

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original Agreement, directing the City to make changes to Article II (Scope of Work) of this Agreement.

Contract Modification: Any written alteration in specifications, delivery point, rate of delivery, period of performance, price, quantity, or other provision of the Agreement must be accomplished by mutual action of the parties to the Agreement.

- B) The city may request changes to the Scope of Work/Services to be furnished or performed by the Contractor under the Agreement, as well as changes in the time of performance of the Agreement. All such changes shall be authorized by with Change Order or Contract Modification, as those terms are defined in this Agreement.
- C) Contractor acknowledges that any change in the Agreement price represents full compensation for all costs associated with the change request, including delay costs, impacts, acceleration, disruption, consequential damages and any other costs of any nature.
- D) No action, conduct, omission, prior failure or course of dealing by the City shall act to waive, modify, change or alter the requirement that Contract Modifications must be in writing and signed by the Owner and the Contractor. The Contractor further acknowledges that Change Orders and Contract Modifications are the exclusive method for effecting any change to the Agreement.

ARTICLE VIII - SUBLETTING - ASSIGNMENT:

No part of this Agreement, nor any interest or monies due therein, may be assigned, sublet or transferred without the City's written consent and/or approval of the assignment. Contractor is liable to City for all acts and omissions of its subcontractors, assignees or transferees.

ARTICLE IX - TERMINATION:

City shall have the right to terminate this Agreement with or without cause, for the convenience of City. In the event of termination for the City's convenience, compensation to Contractor shall be made on the same basis as that provided for in the Agreement between City and Contractor or Contract Documents, or in the absence of applicable provisions, then based on the percentage of the work completed as of the date of termination. In no event shall the Contractor be entitled to anticipated profits.

ARTICLE X - INDEMNITY AND RESPONSIBILITY:

Contractor specifically obligates itself to the City in the following respects (and this agreement is made upon such express condition) to wit.

- A) To indemnify City, including its elected officials, employees, volunteers, and representatives against and save them harmless from any and all claims, suits, liability,

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expense, including attorney's fees or damage for alleged or actual infringement or violation of any patent or patent right arising in connection with this Agreement and anything done thereunder.

- B) To protect, hold free and harmless defend and indemnify City including its elected officials, employees, volunteers, and representatives from all liability, penalties, costs, losses, damages, expenses, causes of action, claims or judgments, including attorney's fees resulting from injury or death sustained by any person (including Contractor's employees) or damage to property of any kind, which injury, death or damage arises out of or is in any way connected with the performance of work under this contract, except that said agreement shall not be applicable to injury, death or damage to property arising from the sole negligence or willful misconduct of Owner, its elected officials, employees, volunteers, and representatives who are directly responsible to the Contractor. This indemnification agreement shall extend to all claims of this Agreement asserted after termination, for whatever reason.
- C) To warrant and guarantee the work and materials covered by this Agreement and agrees to make good, at its expense, any defect in materials or workmanship, including the restoration of work of other subcontractors that has been affected. To indemnify City for any loss that may be caused by breach of said warranty and guarantee.
- D) To obtain and pay for all permits, licenses and official inspections made necessary by its work and to comply with all laws, ordinances and regulations bearing on its work and the conduct thereof.
- E) To be fully and exclusively responsible for, and to pay when due, any and all applicable contribution allowances of other payments or deductions, however termed, required by union labor agreements or required by law now or hereafter in force.

Contractor shall indemnify City against, and save it harmless from any and all loss, damages, costs, expenses and attorney's fees suffered or incurred on account of any breach of the aforesaid obligations and covenants, and any other provisions or covenant of this Agreement. At any time before final settlement or adjudication of any loss, damage, liability, claim, demand, suit or cause of action for which Contractor in this Agreement agrees to indemnify and save harmless the City.

ARTICLE XI - CLEAN-UP:

Contractor shall clean up and remove all rubbish and debris caused by its operations and employees. Otherwise, after a (48) Hour written Notice, City shall proceed with this work and charge Contractor for all costs plus a 10% mark-up for overhead and profit.

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ARTICLE XII- SAFETY:

Contractor shall carry on its work in a safe manner, in accordance with the regulations of the latest revised edition of the Manual of Accident Prevention in Construction of the Associated General Contractors of America, Inc., for the protection of persons and property at the site, and Contractor agrees to abide by all applicable Federal, State and Local laws, ordinances, regulations, standards and rules having reference to safety. Contractor agrees to be solely responsible for the protection and safety of its workmen, for the final selection of safety methods, means and safeguards, for the daily inspection of the work area, and for the instruction of its workmen on safety, including attending and/or conducting safety meetings at least once a week.

ARTICLE XIII - EQUAL EMPLOYMENT OPPORTUNITY:

- A) During the performance of this Agreement, the Contractor, for itself, its members, officers, directors, and employees in interest agrees as follows:

Non-discrimination: The Contractor with regard to the Services to be performed under this Agreement shall not discriminate on grounds prohibited by federal, state or local constitution, law, statute or ordinance in:

1. The selection and retention of subcontractors or the procurement of materials and leases of equipment.
 2. The Contractor agrees that it will not discriminate against any person, employee, consultant or applicant for employment with respect to his/her hire tenure, terms, conditions, or privileges or employment or hire of employees, consultants or applicants for employment.
- B) Solicitations for Subcontractors: In all solicitations made by the Contractor for work to be performed under a subcontract, each potential subcontractor shall be notified by the Contractor of the Contractor's obligations under this Agreement, and the regulations relative to non-discrimination.
- C) Sanctions for Noncompliance: In the event of noncompliance with the non-discrimination provisions of this Agreement and the City's Non-Discrimination Clause, the City shall impose such sanctions as it may determine to be appropriate, including, but not limited to:
1. Withholding of payments to the Contractor under this Agreement until the Contractor complies; and/or
 2. cancellation, termination or suspension of this Agreement, in whole or in part; and/or

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3. The imposition of liquidated damages (not a penalty) in the amount of \$500.00 per day, for each day that the Contractor shall fail to comply with said requirements, as determined by the Comptroller, in consultation with the Community and Economic Development Director.

ARTICLE XIV - DEFAULT:

A) If the Contractor:

1. fails to supply complete labor, materials, equipment and supervision in sufficient time and quantity to meet the City's progress schedule (as outlined in Article II of this Agreement) as it may be modified;
2. causes stoppage or delay of, or interference with the project;
3. fails to promptly pay its subcontractors (if applicable), laborers, suppliers, material, men
and/or employees for work on the project;
4. fails to pay worker's compensation or other employee benefits, withholding or any other taxes;
5. fails to comply with the safety provisions of this Agreement or with any safety order, regulation or requirement of any governing authority having jurisdiction over this project;
6. makes unauthorized changes in supervisory personnel;
7. fails in the performance or observance of any of the provisions of this contract;

or

8.
 - a) files a voluntary petition in bankruptcy or is adjudicated insolvent;
 - b) obtains an order for relief under Section 301 of the Bankruptcy Code;
 - c) files any petition or fails to contest any petition filed seeking any reorganization or similar relief under any laws relating to bankruptcy, insolvency or other relief of debtors;
 - d) or seeks or consents to or is acquiescent in the appointment of any trustee, receiver or liquidator of any of its assets or property;
 - e) makes an assignment for the benefit of creditors; or

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- f) makes an admission, in writing, of its inability to pay its debts as they became due;
- B) Then City, after giving the Contractor written or oral (subsequently confirmed in writing) notice of such default and forty-eight (48) hours within which to cure such default, shall have the right to exercise any one or more of the following remedies:
 - 1) Require that Contractor utilize, at its own expense, additional labor, overtime labor (including Saturday and Sunday work) and additional shifts as necessary to overcome the consequences of any delay attributable to Contractor's default.
 - a) After giving Contractor an additional forty-eight (48) hours written (or oral, subsequently confirmed in writing) notice, terminate this Contract, without thereby waiving or releasing any rights or remedies against Contractor or its sureties, and, by itself or through others, take possession of the work, and all materials, equipment, facilities, tools, scaffolds and appliances of Contractor relating to the work, for the purposes of costs and other damages under the contract and for the breach thereof; and
 - b) Recover from Contractor all costs incurred by City to complete the work plus a 10% mark-up for overhead and profit, and further recover from Contractor all losses, damages, penalties and fines, whether actual or liquidated, direct or consequential, and all reasonable attorneys' fees suffered or incurred by City by reason of, or as a result of, Contractor's default.

ARTICLE XV- INSURANCE:

Before Contractor does any work at, or prepares to deliver material to the City, the Contractor shall provide a Certificate of Insurance, issued by a financially responsible insurance company licensed to write insurance in the State of Michigan, evidencing coverage in amounts not less than required by specifications or as follows:

- A) Workers' Compensation: to the extent and at least the minimum amount required by the laws of the state in which work is to be performed.
- B) Commercial General, Professional and Automobile Liability (if applicable): in the amount of One Million Dollars (\$1,000,000.00) for any one occurrence, and Two Million Dollars (\$2,000,000.00) aggregate. The coverage shall apply to all work and activities performed by Contractor with respect to the Scope of Work/Services for the Project. In addition, Contractor shall provide a statement from its insurer(s) noting that the work and activities to be performed by the Contractor with respect to the project, is not excluded from coverage.

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- C) No payments will be made to the Contractor until current certificates of insurance have been received and approved. Insurance companies, named insured and policy forms shall be subject to the City's approval. In the event the coverage evidenced by any such Certificate is canceled or reduced, Contractor shall procure and furnish to City before the effective date of such cancellation, new Certificates conforming to the above requirements. Until evidence of conformity is received, services and related payments will be suspended.
- D) Hold Harmless Agreement: Contractor shall assume liability and indemnify City from and against any liability and all loss, costs, damages, expenses, including attorney fees, on account of claims per personal injury, including death, sustained by any person or persons whosoever, including employees of Contractor, and for injury to or destruction of property of a person or organization, including loss of use thereof, arising out of the performance of the work under this agreement, excepting only such matters caused solely and exclusively by the fault or negligence of the City.

If applicable, the subcontractor shall have its own insurance company naming Contractor and the City as Additional Insured with the following clause added: "The insurance afforded to the Additional Insured is Primary Insurance. If the additional insured has other insurance which is applicable to the loss on an excess or contingent basis, the amount of the company's liability under this policy shall not be reduced by the existence of such other insurance."

Each of the above required Certificates shall provide that the coverage therein afforded shall not be canceled or reduced except by written notice to City given at least thirty (30) days prior to the effective date of such cancellation or reduction.

ARTICLE XVI- TAXES AND CONTRIBUTIONS:

The Contractor hereby accepts and assumes exclusive liability for and shall indemnify, protect and save harmless the City from and against the payment of:

- A) All contributions, taxes or premiums (including interest and penalties thereon) which may be payable under the Unemployment Insurance Law of any State, the Federal Social Security Act, Federal, State, County and/or Municipal Tax Withholding Act, Federal, State, County and/or Municipal Tax Withholding Laws, or any other law, measured upon the payroll of or required to be withheld from employees, by whomsoever employed or engaged in the work to be performed and furnished under this Agreement.
- B) All sales, use, personal property and other taxes (including interest and penalties thereon) required by any Federal, State, County, Municipal or other law to be paid or collected by the Contractor or any of its vendors or any other person or persons or agents acting for, through or under it or any of them, by reason of the performance of

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the work or the acquisition, ownership, furnishing or use of any materials, equipment, supplies, labor, services or other items for or in connection with the work.

- C) All pension, welfare, vacation, annuity and other union benefit contributions payable, under or in connection with respect, to all persons; by whomsoever employed or engaged in the work to be performed and furnished under this Agreement.

ARTICLE XVII – MISCELLANEOUS:

- A) Failure of a party to insist on the strict performance of this Agreement shall not constitute waiver of any breach of the Agreement.
- B) The Contractor agrees that it is not, and will not become, in arrears to the City upon any contract, debt, or obligation to the City, including real property and personal property taxes.
- C) The singular shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders.
- D) If any provision of this Agreement or the application thereof to any person or circumstances shall, to any extent, be judicially determined to be invalid or unenforceable, the remainder of this Agreement, or the application of such provisions to person or circumstances other than those to which it is invalid or unenforceable, shall not be affected thereby, and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.
- E) Insolvency Proceedings: Contractor is not involved in any proceeding by or against it in any court under the Bankruptcy Code or any other insolvency or debtor's relief act, whether state or federal, or for the appointment of a trustee, receiver, liquidator, assignee, or other similar official of Contractor or Contractor's property.
- F) Status of Contractor. Contractor is a Michigan corporation which is duly organized, validly existing, and in good standing under the laws of the State of Michigan; and, further, is properly authorized, according to its Articles of Incorporation, Bylaws, and duly adopted Resolution, to enter into and carry out the transactions contemplated by this Agreement.

ARTICLE XVIII - GENERAL:

Except as otherwise provided in Article III, this Agreement contains all of the agreements of the parties hereto with respect to any matter covered or mentioned in this Agreement, and no other agreement or understanding shall be effective for any purpose. No provision of this Agreement may be amended or added to except by an agreement in writing signed by the parties hereto.

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The Contractor represents and agrees that it has carefully examined and understands this Agreement and the other Contract Documents as provided in Article III, has investigated the nature, locality and site of the work, and that it enters into this Agreement on the basis of its own examination, investigation and evaluation of all such matters and not in reliance upon any opinions or representations of the City, or of any of their respective officers, agents, servants or employees.

No waiver by the City of any provision of this Agreement shall be deemed to be waived of any other provisions hereof or of any subsequent breach by Contractor of the same or any other provision.

ARTICLE XVIII – PROJECT LABOR AND MATERIAL WARRANTEE:

- A) The contractor agrees to provide unconditional 24 months warrantee on labor and materials of its work, or the work performed by the contractor's employees or subcontractors hired by the contractor to perform work on this contract, if the damages or the repair is due to failure caused by workmanship or non-performing/failed materials.
- B) The contractor agreed to provide a performance bond for the duration up to the completion of this said project according to the bid specifications, conditions and obligations.
- C) The contractor agreed to provide a warranty/maintenance bond for 24 months starting on the date project is completed/passed all required inspections/certifications/satisfaction/acceptance/signed off/Davis Bacon documentations and fully paid for according to the bid specifications, conditions and obligations.

ARTICLE XX - CERTIFICATIONS:

- A) The individual signing certifies that he/she is authorized to contract on behalf of the Contractor and to make these certifications.
- B) The individual signing certifies that the Contractor is not involved in any agreement to pay money or other consideration for the execution of this agreement, other than to an employee of the Contractor.

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- C) The individual signing certifies that the Contractor meets the independence standards of the Government Auditing Standards issued by the Comptroller General of the United States.
- D) The individual signing certifies that he/she is aware that all individuals to be assigned to the audit have met the GAO Continuing Education Requirement of 80 hours of continuing education every two years; and that 24 hours of this education have been in subjects directly related to the auditing of government grants.
- E) The individual signing certifies that he/she has read and understands the GAO requirement of an external quality control review at least once every three years.
- F) The individual signing certifies that the Contractor, and any individuals to be assigned to the audit, do not have a record of substandard audit work and have not been debarred or suspended from doing work with any Federal, state or local government. (If the Contractor or any individual assigned to the audit has been found in violation of any state or AICPA professional standards, this information must be disclosed.)
- G) The individual signing certifies that the Contractor does carry professional malpractice insurance or is otherwise adequately self-insured.
- H) The individual signing certifies that the contractor does not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin, disability, or any other basis prohibited by law. The contractor shall take affirmative action to ensure that employees are treated during their employment, without regard to race, color, religion, sex, age, national origin, disability, or any other basis prohibited by law. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or forms of compensation; and selection for training, including apprenticeship. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability or any other basis prohibited by law.

ARTICLE XXI – “Appendix II to Part 200 - Contract Provisions for Non-Federal Entity Contracts Under Federal Awards”:

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

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- A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by [41 U.S.C. 1908](#), must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.
- B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be affected and the basis for settlement.
- C) Equal Employment Opportunity. Except as otherwise provided under [41 CFR Part 60](#), all contracts that meet the definition of “federally assisted construction contract” in [41 CFR Part 60-1.3](#) must include the equal opportunity clause provided under [41 CFR 60-1.4\(b\)](#), in accordance with Executive Order 11246, “Equal Employment Opportunity” ([30 FR 12319](#), [12935](#), [3 CFR Part, 1964-1965](#) Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at [41 CFR part 60](#), “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”
- D) Davis-Bacon Act, as amended ([40 U.S.C. 3141-3148](#)). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act ([40 U.S.C. 3141-3144](#), and [3146-3148](#)) as supplemented by Department of Labor regulations ([29 CFR Part 5](#), “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act ([40 U.S.C. 3145](#)), as supplemented by Department of Labor regulations ([29 CFR Part 3](#), “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means,

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any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

- E) Contract Work Hours and Safety Standards Act ([40 U.S.C. 3701-3708](#)). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with [40 U.S.C. 3702](#) and [3704](#), as supplemented by Department of Labor regulations ([29 CFR Part 5](#)). Under [40 U.S.C. 3702](#) of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of [40 U.S.C. 3704](#) are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
- F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of “funding agreement” under [37 CFR § 401.2 \(a\)](#) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of [37 CFR Part 401](#), “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.
- G) Clean Air Act ([42 U.S.C. 7401-7671q](#).) and the Federal Water Pollution Control Act ([33 U.S.C. 1251-1387](#)), as amended - Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act ([42 U.S.C. 7401-7671q](#)) and the Federal Water Pollution Control Act as amended ([33 U.S.C. 1251-1387](#)). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

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- H) Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see [2 CFR 180.220](#)) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at [2 CFR 180](#) that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.
- I) Byrd Anti-Lobbying Amendment ([31 U.S.C. 1352](#)) - Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by [31 U.S.C. 1352](#). Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.
- J) See [§ 200.323](#).
- K) See [§ 200.216](#).
- L) See [§ 200.322](#).

[[78 FR 78608](#), Dec. 26, 2013, as amended at [79 FR 75888](#), Dec. 19, 2014; [85 FR 49577](#), Aug. 13, 2020]

ARTICLE XXII – NON-COLLUSION AFFIDAVIT:

- 1) The person who is signing this contract agreement is authorized legally to represent XYZ as the lowest qualified bidder.
- 2) The person who signing this contract agreement is fully informed concerning the preparation and contents of the attached bid and of all pertinent circumstances with respect to it.
- 3) The person who signing this contract agreement affirm the attached bid is genuine and not a collusive or sham bid.

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- 4) The person who signing this contract agreement affirm that neither the person or entity submitting the attached bid, nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest (including the undersigned), has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other person or entity submitting a bid, or with any person affiliated with such a person or entity, to submit a collusive or sham Quote in connection with the contract for which the attached bid has been submitted, or to refrain from submitting a bid in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other person or entity submitting a bid, or with any person affiliated with such a person or entity, to fix the price or prices in the attached bid or of any other bidder, or, to fix any overhead, profit, or cost element of the bid price of any other bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Dearborn Heights or any person interested in the proposed contract.
- 5) The price, prices, and/or other terms quoted in the attached bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or parties in interest.

Name and Title of Person Signing

Sworn to and signed in my presence by: _____
on _____, 2023.

Notary Public

Wayne County, Michigan

Acting in Wayne County, Michigan

My Commission Expires: _____

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers or agents as of the date executed below.

CITY OF DEARBORN HEIGHTS
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CITY OF DEARBORN HEIGHTS ("City") _____

_____ ("Contractor")

By:

Name: Bill Bazzi

Title: Mayor

Dated: _____

Signature: _____

By:

Name: Lynne Senia

Title: Clerk

Dated: _____

Signature: _____

By:

Name: _____

Title: _____

Dated: _____

Signature: _____

Federal Tax ID # _____

Approved for the Agenda of:	APPROVED with Amendment
10/22/2024	Motion No. 24-475

9.A.



City Council

TO: Honorable City Council Members

DATE: October 16, 2024

RE: Council Chair Baydoun - Revision to Policy Regarding Public Comment at City Council Meetings

Motion by _____ seconded by _____ to adopt, effective immediately, the revised policy regarding public comment at regular and special meetings, to change Section 5 of the Dearborn Heights City Council Agenda to "Public Hearings and Public Comment", and to remove the subsections.

Attachments:

None

Approved for the Agenda of:	APPROVED
10/22/2024	Motion No. 24-476

9.B.



Treasurer's Office

TO: Honorable City Council Members

FROM: Lisa Hicks-Clayton, Treasurer

DATE: October 16, 2024

RE: Treasurer Hicks-Clayton - Delinquent Personal Property Tax Collections

It is the Treasurer's office recommendation to the honorable body to select Trust Altus. The Treasurer's office and Treasurer have spent 64 hours of research time and interviews with each company (see back up).

Our recommendation is Trust Altus based on years of municipal collections experience, available resources with Trust Altus, collection rate and contingency rate, as well as a dynamic and user-friendly online portal for our staff to receive updates on collection, submit and follow up on collections, and communicate with Trust Altus.

Respectfully Submitted,

Lisa Hicks-Clayton
City of Dearborn Heights
Treasurer

Attachments:

1. Treasurer- Collection Agencies- Delinquent PPT



Treasurer's Office

Lisa Hicks-Clayton
Treasurer
MiCPT, Advanced CPFIM
Colleen Garcia
Deputy Treasurer

TO: Honorable City Council Members

FROM: Lisa Anne Hicks (Hicks-Clayton), City of Dearborn Heights, Treasurer

DATE: October 15, 2024

SUBJECT: Quotes-interview with Delinquent PPT Collection Agencies
(Recommendation)

It is the Treasurer's office recommendation to the honorable body to select Trust Altus. The Treasurer's office and Treasurer have spent 64 hours of research time and interviews with each company (see back up).

Our recommendation is Trust Altus based on years of municipal collections experience, available resources with Trust Altus, collection rate and contingency rate, as well as a dynamic and user-friendly online portal for our staff to receive updates on collection, submit and follow up on collections, and communicate with Trust Altus.

Respectfully Submitted,

Lisa Hicks-Clayton
City of Dearborn Heights
Treasurer

Name	years in business	municipal experience	recovery rate	legal assistance	rate is contingency	years collected	User Friendly Portal/other
R & R Recovery	23 yrs.	yes	78%	No Outsource	yes-50%	5-8 yrs.	not provided
Empire Collections	20 yrs. plus	yes	82%	No Outsource	yes-20%	3 yrs.	not indicated
A. Matthew Publican & Assoc.	15 yrs plus	yes	varies	City's Attorney	yes-admin & pen.	5-6 yrs.	email acct.
Trust Altus	25 yrs. plus	yes	yes-63.10%	Yes In House	yes 22-25%	5-6 yrs.	User friendly informative portal

Labor hours: 64 hours

LHC



Empire Credit and Collection

We Will Get You Paid

26 Railroad Ave #117 Babylon, NY 11702

P: 877-659-5986 • F: 631-956-9217

www.empirecollectionagency.com

No Recovery - No Fee Process

We have a No Recovery, No Fee collection process with an 82% success rate. If we can't get you paid, you owe us nothing for our time, efforts, or resources. This process consists of 3 phases.

Phase One:

The day you place your account, the following will happen:

- The first of four demand letters is sent to the debtor via the US Mail.
- Contact will be made directly by one of our staff collectors
- Our collector will start to contact the debtor and produce a resolution to the matter.

Expect our collectors to place daily phone calls the first 14 to 21 days in an attempt to contact the debtor.

If all attempts to reach a conclusion to the account fail, we go to Phase Two where we immediately forward the case to an attorney within our network located within the debtors jurisdiction.

Phase Two:

Upon our office sending your case to a local attorney within our network, you can expect the following.

- The receiving attorney will immediately draft the first of several legal letters to the debtor on his law firm letterhead demanding payment of the debt owed to you.
- The receiving attorney or one of his staff members will immediately start attempting to contact the debtor via the phone, in addition to the series of letters.
- 90% of cases are resolved by this stage. However, if all attempts to resolve the matter continue to fail, we will send you a letter explaining the issues surrounding the case and what we recommend for the next and final step.

Phase Three:

Our recommendation will be one of two options for your case.

- Close the case and write the balance off as a loss

Or

- Continue with litigation using one of our affiliate attorneys.

You will be able to decide how far you would like to take the case. If our litigation attempts fail, you will owe nothing to our firm or our affiliated attorney.



Empire Credit and Collection
We Will Get You Paid

26 Railroad Ave #117 Babylon, NY 11702
P: 877-659-5986 • F: 631-956-9217
www.empirecollectionagency.com

**EMPIRE CREDIT AND COLLECTION SERVICE AGREEMENT
TERMS AND CONDITIONS**

This agreement is made this date between Empire Credit and Collection, Inc. and _____, hereinafter referred to as Creditor/Client and is for the collection of delinquent accounts by Empire Credit and Collection or its network of attorneys and collection specialists on behalf of Creditor/Client.

1. It shall be the intent of the Creditor/Client to retain the services of Empire Credit and Collection for the purpose of providing debt collection services. In the interest and spirit of maintaining the highest level of ethical and professional standards the parties agree to conduct themselves in accordance with the terms stated below.
2. Creditor/Client warrants the validity, amount and authenticity of all claims placed with Empire Credit and Collection for collection. Upon request, Creditor/Client agrees to forward documentation to Empire Credit and Collection to prove the amount and authenticity of the claim when requested. Any partial payments or full payments received after the date the account is submitted, are subject to fees pursuant to article 5 below.
3. Empire Credit and Collection is to act as it deems appropriate in the collection of claim(s) and is authorized to accept partial payments. Furthermore, Empire Credit and Collection shall have the right to endorse for deposit and collection any checks payable to the Creditor/Client. The compromise or settlement of any claim(s) will not be made without the consent of the Creditor/Client.
4. Creditor/Client agrees to cease all communication with the debtor(s). Creditor/Client agrees that the claim(s) is/are not to be handled by any other institution, collection agent, or representative. Creditor/Client agrees to inform Empire Credit and Collection immediately as to the nature and content of all contacts which debtor(s) makes or attempts to make directly with the Creditor/ Client. Claim(s) that are compromised by the Creditor/Client and or settled directly with the debtor are subject to fees pursuant to article 5 of this agreement. Any payments paid directly by the debtor(s) to the Creditor/ Client, partial or full shall be subject to fees pursuant to Article 5 of this agreement.
5. All claims placed with EMPIRE CREDIT AND COLLECTION by Creditor/Client regardless of amount shall be billed at the following rates below. If our company or you (client) do not receive any payments, you owe us absolutely nothing! If any partial or full payment is made to you (client) or our company, we are due our commission rate below:
 - 20% of the amount collected on accounts that are under (1) year in age.
 - 20% of the amount collected on accounts that are over (1) year in age.
 - 30% of any claim placed that has a principal value less than \$500.00.
 - 40% of the amount collected that are forwarded to an outside attorney that require litigation.
6. In the event claim(s) are withdrawn due to account placement error or are discovered to be previously paid shall be billed at a rate of 10% as an administrative, clerical and initiation fee. Once a payment is made on an account or legal Proceedings have been initiated, whether pre or post judgment the withdrawal or cancellation of the claim(s) is only permissible after all fees, court cost, and due diligence expenses have been paid. The jurisdiction for resolving any dispute arising under this agreement shall be in Suffolk County, New York, United States of America.
7. Cancellation of the agreement must be done in writing. Email your request to admin@empirecollectionagency.com or mail to our address above. Cancellation takes effect 30 days after the request is received. Any payments made prior to cancellation are subject to fees pursuant to Article 5. Claims cancelled with active payments arrangements are subject to fees equal to the full balance of the account pursuant to Article 5 of this agreement.

Agreed on this date: _____

Name (print) _____

Position with Company: _____

Signature: _____



Commercial Collections

(<https://empirecollectionagency.com/commercial-debt-collection/>)



Utility and Services

(<https://empirecollectionagency.com/utility-debt-collection/>)



Small Business Collections

(<https://empirecollectionagency.com/small-business-debt-collection/>)



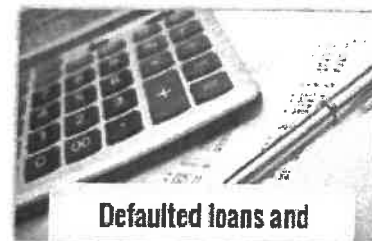
Medical Collections

(<https://empirecollectionagency.com/medical-debt-collection/>)



Immediate Litigation

(<https://empirecollectionagency.com/immediate-litigation/>)



Defaulted loans and

(<https://empirecollectionagency.com/defaulted-loans-promissory-collection/>)



(<https://empirecollectionagency.com/judgment-debt-collection/>)



(<https://empirecollectionagency.com/membership-debt-collection/>)

Welcome to Empire Credit and Collection Agency



We are the nation's leading Debt Collection Agency offering No Recovery No Fee Debt Collections!

We are a debt collection agency that collects your delinquent accounts using our vast network of bill debt collection experts. Our personal collections experience and communications with other agencies and law firms convinced us there are better ways of collecting your debts – faster and with a higher collection rate. Because of the nature of the debt collection industry, small businesses were often able to retain the services of only local agencies. Although these agencies may have done their best, they simply did not have the resources and international network to stay in front of the debtors. See More
(<https://empirecollectionagency.com/about/>)

Protect Your Receivables During Uncertain Economic Times

Businesses globally face uncertainty and volatility in today's economic landscape. We understand the increased importance of cash flow and reduced receivables during this unpredictable time and are here to help. Protect your business now by contacting our expert debt collectors for a quick quote
(<https://empirecollectionagency.com/get-a-quote/>).



Get a Free Quote

First Name *

Last Name *

Company

Email *

Phone

Message about the debt

☐ Yes, I would like to speed up the process of collecting my unpaid invoices by connecting with an Empire Credit and Collection's specialist by SMS

☐ I'm not a robot

reCAPTCHA
[Privacy](#) - [Terms](#)

Submit

By clicking "Yes", I consent to join the list and receive SMS from ECC Holdings, Inc, with access to our latest offers and services. Message and data rates may apply. Message frequency varies. More details on this are in our [Privacy Policy](https://empirecollectionagency.com/privacy-policy/) (https://empirecollectionagency.com/privacy-policy/) and [Terms and Conditions](https://empirecollectionagency.com/sms-marketing-terms-and-conditions/) (https://empirecollectionagency.com/sms-marketing-terms-and-conditions/). Text "HELP" for help or contact us at +1(631)-251-7500. Text "STOP" to cancel.

Office Locations

Mailing

26 Railroad Ave # 117
Babylon, NY 11702

Physical

1045 Route 109 Suite 105/106
Lindenhurst, NY 11757

Phone: 631-251-7500 (tel:631-251-7500)

Toll Free: 877-659-5986 (tel:877-659-5986)

Debt Collection Services

Commercial Collections**Small Business Collections**

Medical Collection Agency**Utility Collection Agency**

International Collections**Membership Collection Agency**

Immediate Litigation**National Collection Agency**

Quick Links

<https://empirecollectionagency.com/>

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No Recovery No Fee

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SMS Marketing Terms & Conditions

SMS Terms and Conditions

Get Started

Get a Quote

FASTER RECOVERY PROVEN RESULTS

Providing our clients with individualized cost-effective collection solutions.

QUICK CONTACT

Name * Email * Phone * Company *

General Description *

☐ I'm not a robot

reCAPTCHA
Privacy - Terms

SERVICES

COMMERCIAL DEBT RECOVERY



We have fine-tuned our collection process and coupled it with the most experienced collection staff in the industry. As a result, our team has achieved recovery rates that far exceed the industry standards.

ACCOUNTS RECEIVABLE MANAGEMENT



DRR provides receivable management services all over the world. Our highly-trained sales staff are here to discuss all options to help reduce your DSO and increase your cashflow.

LEGAL FORWARDING



DRR is home to the most extensive and competitive legal forwarding team in the nation. Our staff works directly with our massive network of collection attorneys and continuously reports feedback to our sales team, ensuring our clients are up to date every step of the way.



FREE BACKGROUND CHECKS

Debt Recovery Resources

At DRA, we understand the importance of protecting yourself at all cost. Our Debtor Awareness Program allows our clientele to compile data during their credit approval process.



ON-LINE STAT/PLACEMENT



Our state of the art collections software reports feedback in real time for clients to review. Placements can be uploaded directly into your account file, reducing lag time.

DEBTOR SEARCH



Our Debtor Awareness program may be utilized to identify new financial issues when clients begin to slow pay. This tool is extremely helpful in making informed decisions on who to place for collections.

35.3M
DOLLARS RECOVERED
2023

834
NEW CLIENTS
2023

45+
INDUSTRY EXPERIENCE
DEBT RR OWNERSHIP

11,912
CLIENTS SERVICED
LIFETIME

FULL SERVICE AGENCY



Full Service Agency

We do more than just collect money. Our highly trained staff utilizes their experience to help clients identify files that need escalation, along with assisting in strengthening clients house policies.



Fast-Action

Our process has been built on speed and efficiency. We identify reasons for nonpayment, work towards a resolution, and collect accounts faster than any agency in the business.



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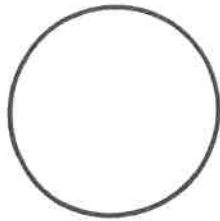
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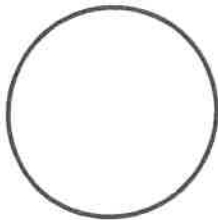
11,912
CLIENTS SERVICED
LIFETIME

FULL SERVICE AGENCY



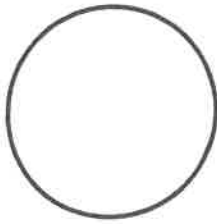
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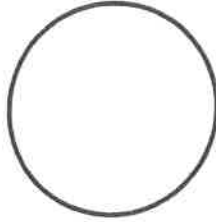
Fast-Action

Our process has been built on speed and efficiency. We identify reasons for nonpayment, work towards a resolution, and collect accounts faster than any agency in the business.



Rate of Recovery

We have fine-tuned the collection process and coupled it with the most experience collection staff in the industry. As a result our clients benefit from the highest Rates of Recovery in the industry.



Client Communication

Our sales professionals take the time to understand our client's needs. By doing so, clients are always up to date on the their files progress.

COLLECTION SERVICE AGREEMENT

This *Collection Service Agreement* ("**Agreement**") is made by, between and among Debt Recovery Resources (the "**Company**"), and _____ (the "**Client**").

In consideration of the mutual promises, covenants and agreements contained in this Agreement, the parties agree as follows:

1. **Engagement.** Client hereby engages the Company to collect certain of Clients outstanding accounts receivable which will be placed with the Company by Client within the terms of this Agreement (all placed accounts are referred to hereunder as the "**Account(s)**").

2. **Services to Be Rendered.** The Company agrees to undertake and perform services at its sole discretion and control to collect the Accounts and may perform all acts necessary to the liquidation and collection of the Accounts, including but not limited to the following:

- a. To receive payments made on the Accounts;
- b. To make arrangement for payment under such terms as it deems appropriate for any Account (subject to approval by Client.); and
- c. To institute suit on behalf of Client or to use all other necessary legal proceedings for the recovery of the amounts due on the Account (subject to approval of suit by Client and payment by Client of all required and necessary expenses of collection, including costs of court filings and service of process); provided, however, that any lawsuit to collect against an account debtor shall be approved in advance by the Client and

3. **Client Duties.** Upon placing the Accounts with the Company for collection, Client agrees to:

- a. Cease and desist from any and all contact with the account debtor including, but not limited to, contacting the account debtor directly or indirectly through the medium of telephone or electronic mail; and
- b. Provide and not unreasonably withhold all information and reasonable assistance to the Company necessary for the Company to perform its duties under the Agreement including but not limited to the following: invoices, agreements, bills of delivery or lading, payment instruments, summaries of account, guarantee agreements, and the like.

In the event the Client receives a payment from an account debtor after the Account

Client _____

DRR _____

has been placed with the Company for Collection, the Client must report to the Company all such payments within three (3) business days of receipt. The Company will then invoice for the due commissions at time payment is reported. Payment will due within ten (10) days of the date of the invoice.

Unless the Company agrees otherwise in writing, in the event the client (a) receives payment on a placed Account directly from the account debtor and fails to report such receipt of payment within the time required, (b) fails to pay an invoice tendered by the Company with respect to its commission due on the placed Account for which the Client received payment from the account debtor, or (c) the Client is determined to have interfered with the Company's collection efforts with respect to any placed Account and has refused to pay the required commission due thereon, the Company shall be entitled to and the Client hereby agrees and covenants to pay liquidated damages to the Company resulting from the failure to pay the Company the amount due and owing the full amount of any commission due with respect to the placement of the Account and waives any defenses or matters of avoidance with respect to such matters.

4. **Assignment for Collection/Authority to Collect in Name of Client.** With respect to all Accounts placed by the Client with the Company for collection, Client hereby assigns, transfers and conveys all such Accounts to the Company for purposes of permitting the collection thereof. The Company shall be entitled, without objection, to take all actions necessary in the name of the Client to collect the Accounts.

5. **Compensation.** In consideration for performing its collection and liquidation obligations with respect to the Accounts, Client agrees to pay the Company a contingency fee to be paid from money recovered or merchandise returned on the Accounts according to the following schedule:

- a. Invoices with oldest invoice date ≤ 90 days = 25%
- b. Invoices with oldest invoice date: ≥ 90 days – 365 days = 30%
- c. Invoices with oldest invoice date ≥ 365 days = 35%
- d. All invoice balances under \$500 regardless of age: 50%
- e. All invoices which have been previously placed with a collection agency and judgments: 50%
- f. All Consumer accounts under \$5,000 regardless of age = 50%

Contingency fees are earned when payment is made directly to the Company or Client. If payment is made to the Company, Company shall deduct the commission due and remit the balance to Client. Contingency fees are earned when merchandise is returned

Client _____

DRR _____

to Client and billed according to the value of said merchandise at time of return.

Debt Recovery Resources is authorized to settle, accept payments, endorse checks, notes, money orders or drafts for deposit.

The Company shall be entitled to retain as additional compensation on any Account a contingency fee on any interest, pre-judgment or post-judgment, and attorney's fees awarded by a court. No fee shall be due on court cost recovered.

6. **Warranties and Representations.** Client represents and warrants to the Company that it owns and holds the Accounts and that they have not been sold to another person or entity.

The Company disclaims any and all representations and warranties, express, implied or statutory, pertaining to the performance of services hereunder. In no event will the Company or any of its affiliates, owners, employees and/or agents be liable for lost profits or other incidental or consequential damages or for the un-collectability of any Account under any circumstances.

7. **Return of Accounts.** Any account referred by the Client to the Company for collection with no payment, payment arrangement or promise to pay that has been worked for over 90 days hereunder will be returned to Client upon request. Otherwise, the Company may continue to work the Account for collection purposes. If Client is insistent on canceling an Account over 90 days, and that Account has a payment plan, or promise to pay in place, Client will be subject to a cancellation charge equal, but not limited to the contingency rate multiplied by the placement amount, or outstanding balance at time of cancellation.

Any account canceled prior to 90 days shall be subject to a cancellation charge equal, but not limited to the contingency rate multiplied by the placement amount, or outstanding balance at time of cancellation.

Any account closed due error in placement, or client interference, will assess a cancellation charge equal, but not limited to the contingency rate multiplied by the placement amount, or outstanding balance at time of cancellation. Placement errors include but are not limited to, Accounts that have been paid prior to placement; Accounts that are being actively pursued by another third party; Accounts that upper management have not approved for placement; Accounts in which Client communicates with the debtor after placement.

8. **Term of Agreement/Renewals/Termination.** The term of this Agreement will be indefinite and continuing, commencing as of the date this Agreement is executed by all parties. This Agreement may be terminated by either party, for any reason, upon thirty (30) days prior written notice to the other without penalty. In the event this Agreement is terminated, for whatever reason, the Company will continue to render services hereunder on all individual Accounts referred and Client will pay the Company all

Client _____

DRR _____

contingency fees earned after notice of termination.

9. **Confidentiality.** The parties to this Agreement intend to enter into a business relationship in which it is expected that the parties will disclose to each other certain information which they deem to be confidential, secret or proprietary in nature (the "**Disclosed Confidential Information**"). Each party agrees to protect and keep confidential, the Disclosed Confidential Information of the other party. Confidential information shall be defined as any and all information that is shared by telephone, facsimile, mail or electronic mail transmission and has not already been disclosed unto the public domain by way of radio, television, publication or any other mass media transmission. The confidential information disclosed is to be used expressly for the purposes outlined in this Agreement and may only be shared with the originally intended recipients of the said information. Under no circumstance shall either party disclose information to anyone for reasons other than for the purposes originally intended without the express written authorization from the disclosing party. Each party to this Agreement shall maintain safeguards to protect Disclosed Confidential Information confidential and protected and shall be required to take any reasonable steps to keep confidential and prevent disclosure of the Disclosed Confidential Information. The Company agrees to implement those steps normally undertaken to protect its own similar information, but in no event, less than a reasonable standard of care. The Company shall not, directly or indirectly, copy, duplicate, gain access to or furnish to others any physical, magnetic, or electronic version of the Disclosed Confidential information.

10. **Miscellaneous.** This Agreement:

- a. describes the entire agreement between the parties and is binding upon and will inure to the benefit of their successors and permitted assigns;
- b. supersedes all prior written and oral agreements and understandings between the Company and Client pertaining to the subject matter hereof and can be changed only in writing executed by the party against whom such change is sought to be enforced;
- c. may not be assigned or transferred, in whole or in part, by either party without the express written consent of the other party;
- d. shall be construed under and in accordance with laws of the state of Texas for state law issues;
- e. may be executed in any number of counterparts and each such counterpart shall constitute one original, but all such counterparts taken together shall constitute one and the same instrument; and
- f. shall be governed by, and construed in accordance with, the laws of the State of Texas. The parties hereby irrevocably submit to the exclusive jurisdiction of the courts of the State of Texas with respect to any dispute arising out of, related to, or to enforce the Agreement, and/or any amounts due under the Agreement. The provisions of this Agreement that by their sense and context are intended to survive performance by the Parties shall also survive the completion, expiration, termination or cancellation of this

Client _____

DRR _____

Agreement; and

- g. includes an agreement that the non-exercise or waiver of any right by the Company under the Agreement will not adversely affect the Company's subsequent exercise of the same right or any other right for the same or subsequent breach or threatened breach. All collection activities of the Company are subject to the rules and regulations of the Uniform Commercial Code and applicable law.

11. **Tax Consequences.** This Agreement is enforceable regardless of its tax consequences. The Parties understand and agree that the terms and conditions set forth in this Agreement reflect the settlement of disputed legal claims and they make no representations regarding the tax consequences of the Agreement. All local, state and/or federal taxes and other levies in the nature of sales, use or excise taxes resulting from the services provided to Client hereunder will be the sole responsibility of the Client and will be paid by Client.

12. **Effective Date.** This Agreement shall be effective when all Parties have executed same and then as of the date set forth above.

*****Remainder of Page Intentionally Left Blank*****

*****Signature Pages to Follow*****

Client _____

DRR _____

By signing below, you are agreeing to all the terms of the contract and certifying yourself as an authorized agent of the Client. The parties hereto have executed this Agreement as of the date and year first written above.

DEBT RECOVERY RESOURCES

By: _____

Print Name: _____

Title: _____

Date Signed: _____

[CLIENT]

By: _____

Print Name: _____

Title: _____

Date Signed: _____

Client _____

DRR _____

Mesa Revenue Partners Commercial Collection Agency Request for Quote

Brian Amacher <Brian.Amacher@trustaltus.com>

Thu 9/12/2024 2:48 PM

 1 attachments (51 KB)

Batch placement form.xlsx;

You don't often get email from brian.amacher@trustaltus.com. [Learn why this is important](#)

Caution: This is an external email. Please take care when clicking links or opening attachments.

Katie,

Thanks for speaking with me today. As discussed, we can pursue your delinquent accounts under **\$5,000 at a 25% contingency rate. Anything \$5,000 and larger would be at 22%, and anything \$50,000 or larger we can negotiate on a case by case basis.** Getting started with us is simple. I've attached a batch placement form needed to initiate the process, so you can just reply with the placement form and any agreements, invoices, PO's, copies of old checks, etc that validate the debt.

Some notes on how we work:

- We start with contingency collections. **No charge unless the debtor makes payment.**
- We use our vast experience and resources to prioritize your debt and get you "back on the list"
- If that doesn't succeed, we can utilize our collectors at the Leviton Law Firm, same contingency rate.
- Our success rate is about 6/10 which is double the industry average.
- We will report to the Credit Bureaus.
- We have a nationwide network of attorneys should collections not succeed, and we need to move forward with suit.
- Upon placement you will receive a link to the portal where you can review your debtors at your convenience. The technology is second to none, giving you the ability to view placement status, collector emails, and even listen to the actual calls being made to your debtors.
- If we are unable to collect with contingent efforts, we can pursue a lawsuit local to the debtor if the balance and situation makes sense to do so. You would be responsible for the actual court costs and filing fees and the contingent rate would increase to **35%** to cover the local attorney that we would need to hire to file the suit. **We do not move forward with this process without your approval.**

We ask that once the account is placed that you and anyone involved understand that:

- If the debtor makes a payment to us, we keep our % and remit the rest to you. If the debtor makes a payment directly to you, you let us know and we invoice for our % and go after the remaining balance, if applicable.
- Please refer any debtor calls or emails to us, in lieu of responding. You can reply "it is out of our hands; you need to deal with who contacted you".
- Please report any payments received promptly so that we can invoice our % and pursue any remaining amount if applicable.
- Any settlements must be approved by you before we can accept. Reasonable payment plans do not need approval.

As you and your team continue to decide on which agency is the best fit for you, allow me to provide additional information about our firm:

Mesa Revenue Partners affiliated itself with Altus Receivables Management, which is the largest commercial collection agency in North America, representing over 10,000 businesses.

One of the things that sets Altus apart from the rest of the collection field is its Client Portal. The technology is second to none, giving you the ability to view placement status, collector emails, and even listen to the actual calls being made to your debtors. I can set up a Zoom meeting where myself and our Customer Relations Manager, AJ Rose, can walk you through a demonstration of our Client Portal to show you exactly what I'm talking about.

Another tool that sets us apart is our in-house law firm. Leviton Law Firm is dedicated to collections, and each of their collectors has 20-plus years of experience. Our exclusive partnership with Leviton Law Firm ensures that you benefit from their resources ***without any upfront fees or costs***. Clients have greatly benefited from this collaboration, and I'm confident we can assist you with your collection matters.

Our collection resolution time in 2023 averaged 32 days, with a success rate of 63.10%, exceeding industry standards. We are licensed and bonded nationwide, hold SOC 1 and SOC 2 certifications for accounting practices, and remit payments bi-monthly on the 5th and 20th via ACH or bank wire. Additionally, we function as a complete credit reporting agency, ***reporting to all credit bureaus upon case placement***.

Moreover, Mesa Revenue Partners holds over 60 years of collection experience. We have a 5-star rating on Google and an A+ rating with the Better Business Bureau.

Please let me know how you would like to proceed, and if there's any further information you need.

Brian Amacher

Director of Sales

Direct: +1 (480) 870-3730 (usa)

[Book with Me](#)



This e-mail (including any attachments) is covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521. It is confidential and may be legally privileged. If you are not the intended recipient, you are hereby notified that any retention, dissemination, distribution or copying of this communication is strictly prohibited. Please reply to the sender that you have received this message in error, and then delete it. Thank you.

Page 719 of 767

Delete
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 Reply
 Reply all
 Forward
 Zoom
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Mesa Revenue Partners Commercial Collection Agency Request for Quote

Batch placement form.xlsx
 51 KB

Caution: This is an external email. Please take care when clicking links or opening attachments.

Hello,

I have been speaking with Katie Pasciolla in regards to my firm working with the City of Dearborn Heights to help with some collection matters. She has asked me to send you my contact and company information so you can have it before your city council meeting next week. I have listed some basic information below, but please let me know if you have any questions or need any additional information:

We can pursue your delinquent accounts under **\$5,000 at a 25% contingency rate. Anything \$5,000 and larger would be at 22%, and anything \$50,000 or larger we can negotiate on a case by case basis.** Getting started with us is simple. I've attached a batch placement form needed to initiate the process, so you can just reply with the placement form and any agreements, invoices, PO's, copies of old checks, etc that validate the debt.

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Please let me know how you would like to proceed, and if there's any further information you need.

Brian Amacher
 Director of Sales
 Direct: +1 (480) 870-3730 (usa)



COLLECTION PROCESS AND TIMELINE:

Once you place your accounts for collection, the process typically follows these stages:

STAGE 1: Collection Agent

- The debtor's case is assigned to the appropriate collector, whether for small, mid, or large balances, for immediate contact.
- The collector will promptly reach out to the debtor via phone, email, and regular mail to demand payment.
- This stage usually takes 30 to 45 days, depending on the debtor's response.

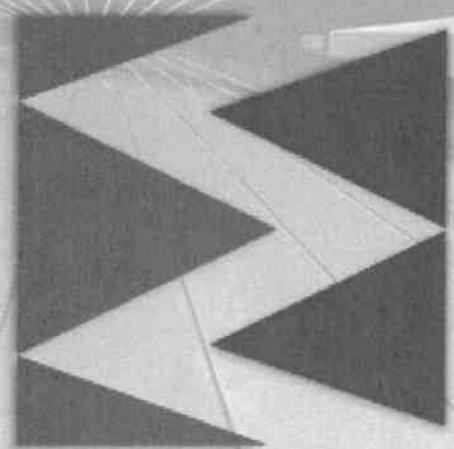
STAGE 2: In-House Attorney

- If the debtor remains unresponsive and the claim exceeds \$4,000.00, our in-house law firm, Leviton Law, may take over for pre-litigation services. Escalating the case to a law firm can significantly impact the debtor, often resulting in payment or resolution.
- The legal staff will contact the debtor through email, letters, and phone calls to demand payment.
- This stage also typically lasts 30 to 45 days, depending on the debtor's response.
- These pre-litigation services are part of our standard offering, with no increase in your contingency fee or added costs.

STAGE 3: Outside Attorney in Debtor's Jurisdiction

- If the debtor continues to be unresponsive and the claim exceeds \$6,000.00, we may refer the case to an attorney in the debtor's jurisdiction for potential formal legal action.
- The attorney will initially contact the debtor to inform them of their retention for a formal lawsuit. Being local, the attorney's involvement can have a stronger impact on the debtor.
- Within 30 to 45 days, the attorney will report back with their recommendations and the requirements for filing a lawsuit.
- We will update you on the status and inform you of any court costs necessary for legal action.
- At this point, you can decide whether to proceed with the lawsuit. You are not obligated to pursue formal legal action; the choice is entirely yours.
- If you choose not to proceed, we will close the file and return it to you, with no fees owed, provided the debtor hasn't reached out or made a payment directly to you.

Page 1 of 1



MESA REVENUE PARTNERS

RECEIVED

ALTUS Partne

MESA REVENUE PARTNERS FORMED A STRATEGIC WITH ALTUS RECEIVABLE MANAGEMENT II

Through this Partnership, MRP is able to:

- Enhance all back-office processes
- Provide additional collection personnel with over 10 years of experience
- Enhanced security and certifications
- Attorney relationship with ALTUS's full-service, law firm



How does the partnership with ALTUS help you?

EXPERIENCE

ALTUS, founded in 1994, has 25+ years of experience in the commercial collections industry.

KNOWLEDGE

ALTUS delivers the required skill set, languages, and tenured professionals to support all collection aspects.

TECHNOLOGY

ALTUS employs industry leading technology, innovative software platforms & solutions powered thru Salesforce.com.

COMPLIANCE

ALTUS is fully licensed & compliant with enhanced data security certifications.

ALTUS IS CERTIFIED BY THE INDUSTRY'S MOST RESPECTED ASSOCIATIONS.

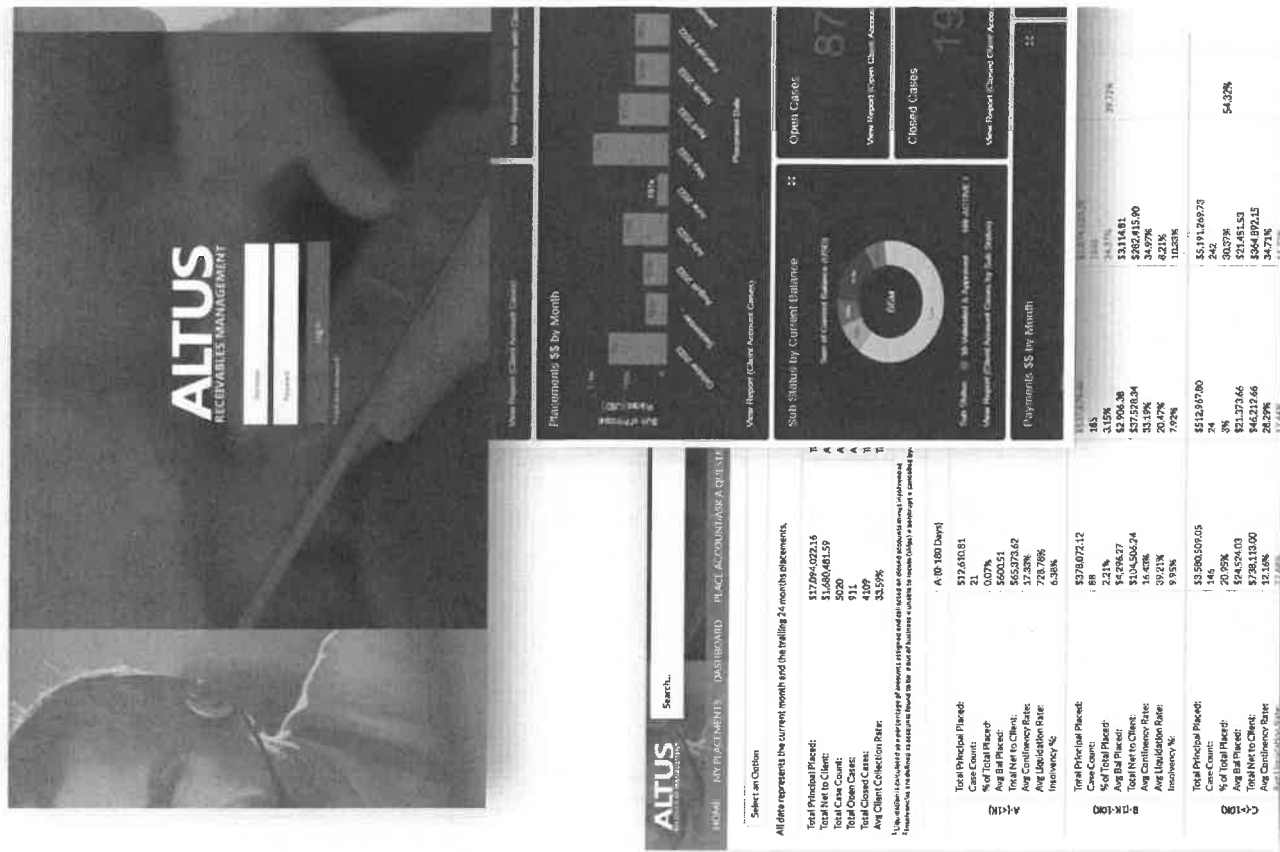
This is an important distinction, as very few agencies would not meet the requirements to be fully licensed and bonded meeting the requirements for CCAA Certification. You can take comfort that ALTUS follows the law completely.





Best-in-class Commercial Collections Technology.

Page 726 of 767



ALTUS offers services that are specifically designed to accelerate cash flow.

1st Party Collections

ALTUS can extend your internal collections team to enhance portfolio coverage and A/R performance. ALTUS can handle everything from hiring and training to coaching and collection practices. They have a comprehensive team of professionals to enhance partners existing staff.

3rd Party Collections

Put ALTUS on your most troublesome A/R challenges and achieve a higher level of liquidation. With third-party collection services, you gain access to the largest commercial collections company in North America. ALTUS has the resources to improve returns for every client in any industry.

Legal Services

ALTUS legal forwarding services accommodate our partners accounts that require legal action. ALTUS has an extensive national network of highly experienced commercial collection attorneys who can represent cases, to drive the most favorable resolution. Trust ALTUS' team to handle the entire legal process when normal collection efforts are exhausted.

Business

ALTUS's Business data reputation agencies assured accurate information professional you understand your business



The MRP + ALTUS partnership is a winning combination for your business!

For over 25 years, ALTUS has leveraged top talent to assist businesses in some of the most complex industries. Our new partnership between MRP & ALTUS means more success for clients!

We do our due diligence to operate within the law while realizing the return you deserve. Over time, we have mastered our debt collection practices so we can help you succeed.

804

A PERSONAL SERVICE CONTRACT

AGREEMENT made this 30th day of May, 2013 between the CITY OF Dearborn Heights, a Municipal Corporation in the State of Michigan, hereinafter referred to as the Principal, and A. Matthew Publican and Associates L.L.C., 48763 Beaver Creek, Plymouth, Michigan 48170, hereinafter referred to as the Agent, witness:

- I. In consideration of the mutual promises and agreement herein contained, Principal contracts with the Agent under the following terms hereby agreed on by the Parties hereto.
- II. The services to be performed by the Agent shall be the collection of delinquent personal property taxes in the City of Wayne.
- III. The place where such services are to be performed is the City of OH Wayne.
- IV. Agent shall commence his work on the first day of June, 2013. The employment shall continue until terminated by either party as provided for herein.
 - A. The contract may be terminated by either party, with 30 days notice. Collection fees and Penalties for delinquent property taxes shall be paid for delinquent taxes received for thirty (30) days, after the termination of said contract.
 - B. In the event the Principal pursuant to law is no longer required to collect delinquent personal property taxes, this Contract shall terminate.
- V. Principal further agrees as follows:
 - A. To pay the agent as compensation for his service all administrative and collection fees and all city interest penalties computed on delinquent personal property taxes paid during the duration of this Agreement.
 - B. The tax rolls of the Principal reflecting the collection of delinquent personal property shall be posted within ten (10) days after the end of each month. Within sixty (60) days thereafter the Principal will pay to the Agent fees due on collected delinquent taxes pursuant to Article V, Section A.
 - C. Agent will not be required to conduct public auction sales in order to expedite collection of delinquent personal property taxes.
 - D. To furnish the Agent I.D. card that identifies Agent as the personal property tax collector for the principal.
 - E. To furnish the Agent with a receipt book, which will serve as prima facie evidence as to the amount of delinquent personal property tax collection remitted by the Agent to Principal. Agent shall return the receipt book to the principal's

A. Matthew Publican

County, Michigan.

B. This Contract contains all the terms and conditions agreed on by the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of the Contract, shall be deemed to exist or bind any parties hereto.

IN WITNESS WHEREOF, the parties have hereto set their hands the day and year first above written.

A. Matthew Publican & Associates L.L.C.


George A. Riley - Resident Agent

City of Wayne


Mayor


City Clerk


Treasurer

834

A PERSONAL SERVICE CONTRACT

AGREEMENT made this 30th day of May, 2013 between the CITY OF Dearborn Heights, a Municipal Corporation in the State of Michigan, hereinafter referred to as the Principal, and A. Matthew Publican and Associates L.L.C., 48763 Beaver Creek, Plymouth, Michigan 48170, hereinafter referred to as the Agent, witness:

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- IV. Agent shall commence his work on the first day of June, 2013. The employment shall continue until terminated by either party as provided for herein.
 - A. The contract may be terminated by either party, with 30 days notice. Collection fees and Penalties for delinquent property taxes shall be paid for delinquent taxes received for thirty (30) days, after the termination of said contract.
 - B. In the event the Principal pursuant to law is no longer required to collect delinquent personal property taxes, this Contract shall terminate.
- V. Principal further agrees as follows:
 - A. To pay the agent as compensation for his service all administrative and collection fees and all city interest penalties computed on delinquent personal property taxes paid during the duration of this Agreement.
 - B. The tax rolls of the Principal reflecting the collection of delinquent personal property shall be posted within ten (10) days after the end of each month. Within sixty (60) days thereafter the Principal will pay to the Agent fees due on collected delinquent taxes pursuant to Article V, Section A.
 - C. Agent will not be required to conduct public auction sales in order to expedite collection of delinquent personal property taxes.
 - D. To furnish the Agent I.D. card that identifies Agent as the personal property tax collector for the principal.
 - E. To furnish the Agent with a receipt book, which will serve as prima facie evidence as to the amount of delinquent personal property tax collection remitted by the Agent to Principal. Agent shall return the receipt book to the principal's

County, Michigan.

B. This Contract contains all the terms and conditions agreed on by the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of the Contract, shall be deemed to exist or bind any parties hereto.

IN WITNESS WHEREOF, the parties have hereto set their hands the day and year first above written.

A. Matthew Publican & Associates L.L.C.


George A. Riley - Resident Agent

City of Wayne


Mayor


City Clerk


Treasurer

Approved for the Agenda of:	APPROVED
10/22/2024	Motion No. 24-477

9.C.



Treasurer's Office

TO: Honorable City Council Members

FROM: Lisa Hicks-Clayton, Treasurer

DATE: October 16, 2024

RE: Treasurer Hicks-Clayton - Purchase & Payment Using American Express Points - New Credit Card Reader Equipment

Dear Honorable City Council Members,

Currently, I am seeking the honorable body's approval to use American Express (AMEX) points at a value of \$136 for the Treasurer's office cash and dock purchase for the new credit card readers' windows (two). The City Council had prior authorized the city to use B S & A payment platform. By using B S & A payment platform, the Treasurer's office is updating the credit card readers to tap and go readers. This will ensure compliance and cashiers will no longer handle customers' credit cards.

The case and docks need to be secure for the new card readers. We would like to utilize the AMEX points at no cost to the City of Dearborn Heights. Currently, the city has accumulated and has available for use approximately \$24,000 or 2,410,833 in points. The cost for the Stripe S700 case is \$38 and two Stripe S700 would be \$136.00.

I have attached the information for the back-up. Please feel free to contact me at (313)791-3417 if I may be of assistance or answer any questions.

Respectfully,

Lisa Hicks-Clayton
City of Dearborn Heights, Treasurer
MiCPT and Advanced CPFIM
Harvard, Financial Accounting, certification

Attachments:

1. City Council agenda- Treasurer-docks



Treasurer's Office

Lisa Hicks-Clayton
Treasurer
MiCPT, Advanced CPFIM
Colleen Garcia
Deputy Treasurer

October 7, 2024

Dear Honorable City Council Members,

Currently, I am seeking the honorable body's approval to use American Express (AMEX) Points at a value of \$136 for the Treasurer's office case and dock for the new credit card readers-cashiers' windows(two). The City Council had prior authorized the city to use B S & A payment platform. By using B S & A payment platform, the Treasurer's office is updating the credit card readers to tap and go readers. This will ensure compliancy and cashiers will no longer handle customers' credit cards.

However, the case and docks are needed for securing the new card readers. We would like to utilize the AMEX points, at no cost to the City of Dearborn Heights. Currently, the city has accumulated and has available for use approximately \$24,000 or 2,410,833 in points. The cost for the two Stripe S700 case is \$38 and two Stripe S700 dock is \$98, a total of \$136.00.

I have attached the information for back up. Please feel free to contact me at (313) 791-3417 if I may be of assistance or answer any questions.

Respectfully,

Lisa A. Hicks-Clayton
City of Dearborn Heights, Treasurer
MiCPT and Advanced CPFIM
Harvard, Financial Accounting, certification



Delete



Archive



Report



Reply



Reply all



Forward



Zoom

**Re: Treasurer's Office S700 Terminals** ● General\All Employees (unrestricted)

Notice: *Receiving this email outside of normal working hours? Managing work & life responsibilities is unique for everyone. I have sent this email at a time that works for me. Please respond at a time that works for you.*

From: David R. Cooper <DCooper@dearbornheightsmi.gov>

Sent: Wednesday, October 2, 2024 1:43 PM

To: Bill Bazzi <BBazzi@dearbornheightsmi.gov>; Lisa A. Hicks-Clayton <LHicks-clayton@dearbornheightsmi.gov>

Subject: Treasurer's Office S700 Terminals

As we transition to the new BS&A Payment and the Stripe S700 Credit Card readers, I would recommend a case and dock for each reader. See the attached image of the "shopping cart."

If possible, can the Amex Point be used to pay for these small protective items?

Terminal hardware**\$136.00**[Edit order](#)

2 ×	Stripe S700 Case	\$38.00
	\$19.00	
2 ×	Stripe S700 Dock	\$98.00
	\$49.00	

Subtotal \$136.00

David R. Cooper *Director of Innovation & Technology*

**City of Dearborn Heights**

25637 Michigan Ave., Dearborn Heights MI 48125

(313) 791-3455

www.dearbornheightsmi.gov

Notice: *Receiving this email outside of normal working hours? Managing work & life responsibilities is unique for everyone. I have sent this email at a time that works for me. Please respond at a time that works for you.*

LEGAL CONFIDENTIAL: This E-mail (including attachments) is covered by the Electronic Communications Privacy Act, 18 U.S.C. §§ 2510-2521. The information and/or documents in this message are privileged and confidential, for use only by the intended recipient. If you are not the intended recipient, any disclosure, distribution, use or copying of the contents of this message is prohibited. If you have received this message in error, please notify us immediately and delete this message from your system.

[← Reply](#)[→ Forward](#)



Corporate Membership Rewards® Monthly Statement and Program News

p. 1/1

Prepared for CORPMEMRWDS

Account Number: ****

Total Points Balance 2,410,833

Points Earned this Period 0

Account Summary July 1, 2024 - July 31, 2024

Opening Points Balance	2,410,833
Points Earned this Period	0
Points Used this Period	0
Reinstated Points and Adjustments	0
Total Points Balance	2,410,833

Points Earned this Period are pending until charges are paid in full and all your accounts are in good standing. Points Earned this Period may include Bonus Points.

Questions About Your Account?



atwork.americanexpress.com

1-888-800-8564

International Collect: 1-623-492-7737

Did You Know?

Learn more at
americanexpress.com/rewards

Points Transaction Detail

July 1, 2024 - July 31, 2024

Points Earned this Period	Points Activity On Eligible Charges	Bonus Points Awarded	Total Points Activity Per Card
Corporate XXXX-XXXX6-91003	0	0	0
Total	0	0	0

Points used this period includes Redemptions and Transfers. Points earned may be used as long as all enrolled Card accounts are in good standing. Points used cannot be reversed back into your program account. **Forfeited points can be reinstated for a fee by calling the number provided below.** Eligible Card charges are outlined in the Membership Rewards program Terms and Conditions in your Program Guide. If you have questions, please visit <http://atwork.americanexpress.com> or call 1-888-800-8564. For International, call collect 623-492-7737.

AB 01 009137 74755 H 32 A



CORPMEMRWDS
CITYOFDEARBORNHGTS
6045 FENTON ST
DEARBORN HEIGHTS MI 48127

Handwritten:
\$24,000 cash conversion
8/20/24

Approved for the Agenda of:	APPROVED with Amendment
10/22/2024	Motion No. 24-478

9.D.



Mayor's Office

TO: Honorable Mayor Bill Bazzi
Honorable City Council Members

FROM: Ali Dib, City Engineer
Mariana Hernandez, Chief of Staff

DATE: October 15, 2024

RE: Chief of Staff Hernandez & City Engineer Dib - FundingScout Services

Council Chair and Council Members,

We are seeking your support and approval for the 3 year Funding Scout Services Agreement.

Please support the following motion:

Motion by _____, seconded by _____ to approve the Proposal for FundingScout Services between the City and Wade Trim. In addition, authorize the Mayor and Comptroller or Clerk to sign the necessary warrants, and the Treasurer to issue a one-time payment of \$29,000.00 from GL Acct. #101-200-818.000 and \$67,000.00 from GL Acct. #592-536-818.000.

Attachments:

1. 20241014_Dib_Fundingscout Renewal-Ltr



Wade Trim Associates, Inc.
25251 Northline Road • Taylor, MI 48180
734-947-9700 • www.wadetrim.com

October 14, 2024

City of Dearborn Heights
6045 Fenton Street
Dearborn Heights, MI 48127

Attention: Ali Dib, PE
City Engineer

Re: Proposal for FundingScout Services – Three Years

Dear Ali:

We are pleased to submit this proposal for Wade Trim's FundingScout services. Our team has enjoyed our fruitful engagement over the past two years and look forward to continuing our assistance obtaining state and federal funding. Since December 2022, we have secured over \$26 million in grants and earmarks for the City. Our team looks forward to bringing continued success to the City over the coming years.

We have modified our approach to best serve the long-term needs of the City. This proposal confirms our scope of work, proposed schedule, and budget cost estimate. We have outlined Wade Trim's FundingScout services and additional services that may be required through the duration of the three-year contact.

PROJECT SCOPE OF WORK

Wade Trim will provide FundingScout services to the City of Dearborn Heights as outlined in the task descriptions that follow. Services were developed based on our discussions. Wayne Hofmann will remain the project director and primary contact for the Owner, responsible for coordinating our FundingScout services. Work will begin upon receipt of written notice to proceed.

Specific services and deliverables included with each task are described in the sections that follow.

1.0 FUNDINGSCOUT MEETINGS

1.1 Quarterly FundingScout Meeting

- a) This Scope of Work includes quarterly meetings with the Mayor's Chief of Staff, City Engineer, and other departmental staff to discuss upcoming grant opportunities, review funding strategies and consider changes to federal and state funding programs. These will include four in-person meetings each year. This task also includes meeting preparation by Wade Trim.

Deliverables: Meeting Agendas, Minutes, Twelve (12) In-person Meetings

1.2 Grant Status Report

- a) Wade Trim will provide a grant status report providing information on grants submitted, in progress, pending, and anticipated at each Quarterly FundingScout Meeting.

Deliverables: Grant Status Report

2.0 ONGOING SERVICES

2.1 Grant/Legislative Research

- a) Wade Trim identifies potential grant opportunities through our research and FundingScout grant identification process. These services will be provided on an ongoing basis, as well as the review of specific funding opportunities and recommendations for action based on this review.
- b) Wade Trim will also review State and Federal budgets to identify potential funding opportunities for the Owner. This review will take place within two months of the final passage of state and federal budget appropriations and will be presented at the next scheduled Quarterly FundingScout Meeting.

Deliverables: Grant Review Memoranda, Legislative Summaries

2.2 Federal Earmark Writing

- a) Each year, the US Congress accepts community project funding requests, or earmarks, from constituent communities. Wade Trim will develop up to three earmark requests on behalf of the City each year.

Deliverables: Earmark Requests

3.0 ADDITIONAL SERVICES

Services under this heading will be provided on a time and materials basis, as requested and according to the rate schedule included in ***Attachment A***.

3.1 Grant Writing

- a) Wade Trim will assist the Owner in developing grant applications or communications that support obtaining Federal, State, and other funding. This may include the development of grant narratives, illustrations, budgets, and other information required by grant guidelines.
- b) Wade Trim will complete grant information sheets for the Owner, which provide key information about each grant application for retention in the Town's record keeping systems.

Deliverables: Grant Application Documents, Grant Information Sheets

3.2 Post-Submission Grant Support

- a) Wade Trim will assist the Owner throughout the process of grant review and securing a grant agreement, which often requires the Owner to respond to agency requests for information. These services are generally required when the grantor has selected the grant application for a potential award but needs additional information to negotiate or finalize a grant agreement.
- b) Wade Trim will review grant agreements for regulatory and project implementation implications; however, the City should engage legal counsel to assess grant agreements for potential risks.

Deliverables: Response to Agency Requests for Information, Grant Agreement Review

OTHER SERVICES

FundingScout clients often request other supplementary services. Other services, which are not included in this proposal, but that may be included by mutual written agreement of the parties include, but are not limited to:

- a) Grant administration and reporting activities.
- b) Legislative advocacy and communications support.
- c) Project scoping and cost estimating.
- d) Preliminary design and engineering.

For the avoidance of doubt, services provided under this proposal, including the services described above, do not include any professional or technical services (such as engineering, design, or such similar services) unless included by mutual written agreement of the parties.

SCHEDULE

Assuming a Notice to Proceed is given by the Owner before December 1, 2024, we anticipate our FundingScout Services to extend for a period of three years through December 1, 2027.

Wade Trim's fees are based on the schedule. Changes in the schedule may impact the presented fees. Depending on the actual Notice to Proceed date and desired completion date, Wade Trim reserves the right to renegotiate professional fees to account for additional effort required to accommodate the project schedule.

FEES AND COMPENSATION METHOD

Wade Trim proposes to complete Tasks 1.0 and 2.0 described above for a Lump Sum Fee of **\$96,000**. This fee is inclusive of all project costs, including project management, supplies, mileage, and shipping.

This fee is broken down by task below:

Task	Description	Lump Sum Amount
1.0	Quarterly FundingScout Meetings	\$29,000
2.0	Ongoing Services	\$67,000
Total Fee		\$96,000
3.0	Additional Services Requested	Time and Materials*

Additional services will be charged according to the rate schedule provided in **Attachment A. The rate schedule will be increased at a rate of 5% each year.*

OWNER RESPONSIBILITIES

- Provide access to project documents or information necessary for Wade Trim to develop complete grant applications
- Participate and contribute feedback in quarterly FundingScout meetings
- Provide prompt approval for the development of grant applications that the Owner wants the Wade Trim to complete
- Provide access to grant portals, website login information, and/or other information required for the completion of grant applications
- Review documents prepared by Wade Trim and provide comments in a timely fashion

INVOICING PROCEDURES

Effort will be invoiced monthly based on milestones reached in the preceding month. Payment of invoices is expected within 30 days. Any disputes related to the invoice amount will immediately be brought to the attention of Wade Trim. Wade Trim reserves the right to stop work when accounts receivable exceeds 60 days. All deliverables are the property of Wade Trim until payment obligations are met.

Additional services requested by the Owner will be billed on a time and materials basis per the attached 2024 Community Design Market Segment Services Rate Schedule.

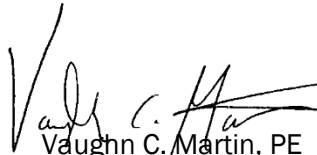
We have enclosed a Professional Services Short Form Agreement for this project. If this meets with your approval, please sign, date, and return the Agreement to authorize Wade Trim to proceed. We look forward to working with you on this project and should you have any questions, please do not hesitate to call.

Very truly yours,

Wade Trim Associates, Inc.



Wayne R. Hofmann
Client Funding Director



Vaughn C. Martin, PE
Client Manager



Rebecca M. Smith, PE
Senior Vice President

WRH:VCM:RMS:efa

BDXDHT

20241014_DIB_FUNDINGSCOUT RENEWAL-LTR.DOCX

Enclosure

cc: Mariana Hernandez, City of Dearborn Heights
Mia Mariotti, Wade Trim

ATTACHMENT A

Wade Trim Billing Rate Schedule Community Design With Equipment Billed Separately Effective January 2024

Labor Class Code	ClassificationTitle	2024 Rate Per Hour**
299.1	Professional Engineer VI	\$ 245.00
299	Professional Engineer V	\$ 220.00
298	Professional Engineer IV	\$ 190.00
297	Professional Engineer III	\$ 175.00
296	Professional Engineer II	\$ 150.00
295	Professional Engineer I	\$ 135.00
294.2	Engineer VI	\$ 200.00
294.1	Engineer V	\$ 180.00
294	Engineer IV	\$ 160.00
293	Engineer III	\$ 140.00
292	Engineer II	\$ 120.00
291	Engineer I	\$ 105.00
248	Professional Planner V	\$ 195.00
247	Professional Planner IV	\$ 175.00
246	Professional Planner III	\$ 160.00
245	Professional Planner II	\$ 135.00
244	Professional Planner I	\$ 115.00
243	Planner III	\$ 105.00
242	Planner II	\$ 90.00
241	Planner I	\$ 75.00
258	Professional Landscape Architect V	\$ 210.00
257	Professional Landscape Architect IV	\$ 190.00
256	Professional Landscape Architect III	\$ 165.00
255	Professional Landscape Architect II	\$ 140.00
254	Professional Landscape Architect I	\$ 120.00
253.2	Landscape Architect V	\$ 185.00
253.1	Landscape Architect IV	\$ 155.00
253	Landscape Architect III	\$ 125.00
252	Landscape Architect II	\$ 100.00
251	Landscape Architect I	\$ 80.00
266	Professional Scientist III	\$ 140.00
265	Professional Scientist II	\$ 115.00
264	Professional Scientist I	\$ 90.00
263	Scientist III	\$ 120.00
262	Scientist II	\$ 90.00
261	Scientist I	\$ 75.00
287	Professional Surveyor IV	\$ 200.00
286	Professional Surveyor III	\$ 180.00
285	Professional Surveyor II	\$ 155.00
284	Professional Surveyor I	\$ 135.00
283	Surveyor III	\$ 120.00

**Wade Trim Billing Rate Schedule
Community Design
With Equipment Billed Separately
Effective January 2024**

Labor Class Code	Classification Title	2024 Rate Per Hour**
282	Surveyor II	\$ 100.00
281	Surveyor I	\$ 85.00
786	Survey Technician VI	\$ 130.00
785	Survey Technician V	\$ 115.00
784	Survey Technician IV	\$ 100.00
783	Survey Technician III	\$ 85.00
782	Survey Technician II	\$ 70.00
781	Survey Technician I	\$ 60.00
716	Construction Technician VI	\$ 160.00
715	Construction Technician V	\$ 125.00
714	Construction Technician IV	\$ 115.00
713	Construction Technician III	\$ 105.00
712	Construction Technician II	\$ 90.00
711	Construction Technician I	\$ 75.00
726	CADD Technician VI	\$ 155.00
725	CADD Technician V	\$ 130.00
724	CADD Technician IV	\$ 115.00
723	CADD Technician III	\$ 95.00
722	CADD Technician II	\$ 85.00
721	CADD Technician I	\$ 75.00
736	Engineering Specialist II	\$ 180.00
735	Engineering Specialist I	\$ 145.00
734.2	Engineering Technician VI	\$ 165.00
734.1	Engineering Technician V	\$ 145.00
734	Engineering Technician IV	\$ 135.00
733	Engineering Technician III	\$ 105.00
732	Engineering Technician II	\$ 80.00
731	Engineering Technician I	\$ 65.00
758	Project Specialist V/Manager	\$ 225.00
757	Project Specialist IV/Manager	\$ 200.00
756	Project Specialist III/Manager	\$ 185.00
756.2	Project Specialist II/Manager	\$ 170.00
756.1	Project Specialist I/Manager	\$ 145.00
755.2	Project Specialist IV	\$ 175.00
755.1	Project Specialist III	\$ 160.00
755	Project Specialist II	\$ 145.00
754	Project Specialist I	\$ 120.00
753.2	Project Aide V	\$ 155.00
753.1	Project Aide IV	\$ 140.00
753	Project Aide III	\$ 120.00
752	Project Aide II	\$ 95.00

**Wade Trim Billing Rate Schedule
Community Design
With Equipment Billed Separately
Effective January 2024**

Labor Class Code	ClassificationTitle	2024 Rate Per Hour**
751	Project Aide I	\$ 70.00
203	Senior Principal	\$ 300.00
202	Principal	\$ 290.00
201	Senior Professional	\$ 235.00

Outside expenses and subconsultants at cost times 1.15.

Special billing rates will apply in matters requiring expert witnesses or other consulting as it relates to legal matters.

**For services requiring overtime, rates will be 1.5 x hourly rate

Reviewed and Revised Annually



Professional Services Agreement (Short Form)

Agreement

To engage the Services of Wade Trim Associates, Inc. as a Design, Planning, Testing and/or Land Survey Professional.

This Agreement, entitled Proposal for FundingScout Services – Three Years between City of Dearborn Heights of 6045 Fenton Street, Dearborn Heights, Michigan 48127, hereinafter called "Owner," and Wade Trim Associates, Inc., 25251 Northline Road, Taylor, Michigan 48180, hereinafter called "Professional," is as follows:

The Owner and Professional, for mutual consideration hereinafter set forth, agree as follows:

A. Professional agrees to perform certain professional services for Owner as follows:

As outlined in Wade Trim's proposal letter dated October 14, 2024.

B. Owner agrees to pay Professional as compensation for Professional's services as follows:

Task	Description	Lump Sum Amount
1.0	Quarterly FundingScout Meetings	\$29,000
2.0	Ongoing Services	\$67,000
Total Fee		\$96,000
3.0	Additional Services Requested	Time and Materials*

*Additional services will be charged according to the rate schedule provided in Attachment A of proposal letter referenced. The rate schedule will be increased at a rate of 5% each year.

C. Owner agrees to establish an allowance of \$0 for additional services on this Project (not less than 10% of the compensation amount specified in Item B.)

D. The Owner and Professional agree to conditions as set forth on the reverse side in the General Provisions of this Agreement.

E. The Owner and Professional agree to the following schedule:

As outlined in Wade Trim's proposal letter dated October 14, 2024.

F. Professional has the option to render this Agreement null and void, if it is not executed within 60 days.

Owner:

Professional:

By: Ali Dib, PE
(Print Name)

By: Rebecca M. Smith, PE
(Print Name)

Title: City Engineer

Title: Senior Vice President

Date Signed: _____

Date Signed: October 14, 2024

General Provisions

1.01 Basic Agreement

A. Professional shall provide, or cause to be provided, the services set forth in this Agreement, and Owner shall pay Professional for such Services as set forth herein.

2.01 Payment Procedures

A. *Preparation of Invoices.* Professional will prepare a monthly invoice in accordance with Professional's standard invoicing practices and submit the invoice to Owner.

B. *Payment of Invoices.* Invoices are due and payable within 30 days of receipt. If Owner fails to make any payment due Professional for services and expenses within 30 days after receipt of Professional's invoice, the amounts due Professional will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day. In addition, Professional may, without liability, after giving seven days written notice to Owner, suspend services under this Agreement until Professional has been paid in full all amounts due for services, expenses, and other related charges. Payments will be credited first to interest and then to principal.

3.01 Additional Services

A. If authorized by Owner, or if required because of changes in the Project, Professional shall furnish services in addition to those set forth above.

B. Owner shall pay Professional for such additional services as follows: For additional services of Professional's employees engaged directly on the Project an amount equal to the cumulative hours charged to the Project by each class of Professional's employees times standard hourly rates for each applicable billing class; plus reimbursable expenses and Professional's consultants' charges with a 15% mark-up, if any.

4.01 Termination

A. The obligation to provide further services under this Agreement may be terminated:

1. For cause,

a. By either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the Agreement's terms through no fault of the terminating party.

b. By Professional:

1) upon seven days written notice if Professional believes that Professional is being requested by Owner to furnish or perform services which are outside of the agreed upon scope of services without compensation, which are contrary to Professional's responsibilities as a licensed professional; or

2) upon seven days written notice if the Professional's services for the Project are delayed or suspended for more than 90 days for reasons beyond Professional's control.

3) Professional shall have no liability to Owner on account of such termination.

c. Notwithstanding the foregoing, this Agreement will not terminate as a result of a substantial failure under paragraph 4.01.A.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its failure and proceeds diligently to cure such failure within no more than 30 days of receipt of notice; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.

2. For convenience, by Owner effective upon the receipt of notice by Professional.

B. The terminating party under paragraphs 4.01.A.1 or 4.01.A.2 may set the effective date of termination at a time up to 30 days later than otherwise provided to allow Professional to demobilize personnel and equipment from the Project site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files. Professional shall be compensated for Basic Services performed through the date of termination as set forth herein and for work performed per 4.01.B in the manner set forth in 3.01.

5.01 Controlling Law

A. This Agreement is to be governed by the law of the state in which the Project is located.

6.01 Successors, Assigns, and Beneficiaries

A. Owner and Professional each is hereby bound and the partners, successors, executors, administrators, employees and legal representatives of Owner and Professional (and to the extent permitted by paragraph 6.01.B the assigns of Owner and Professional) are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators, and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.

B. Neither Owner nor Professional may assign, sublet, or transfer any rights under or interest (including, but without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

7.01 General Considerations

A. The standard of care for all professional engineering and related services performed or furnished by Professional under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Professional makes no warranties, express or implied, under this Agreement or otherwise, in connection with Professional's services. Professional and its consultants may use or rely upon the design services of others, including, but not limited to, contractors, manufacturers, and suppliers and Professional shall not be responsible for design services provided by others.

B. Professional shall not at any time supervise, direct, or have control over any contractor's work, nor shall Professional have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any contractor, for safety precautions and programs incident to a contractor's work progress, nor for any failure of any contractor to comply with laws and regulations applicable to contractor's work.

C. Professional neither guarantees the performance of any contractor nor assumes responsibility for any contractor's failure to furnish and perform its work in accordance with the contract between Owner and such contractor.

D. Professional shall not be responsible for the acts or omissions of any contractor, subcontractor, or supplier, or of any contractor's agents or employees or any other persons (except Professional's own employees) at the Project site or otherwise furnishing or performing any of construction work; or for any decision made on interpretations or clarifications of the construction contract given by Owner without consultation and advice of Professional.

E. The provisions in this Agreement supersede and render null and void any contrary provisions in the contract documents between Owner and Contractor.

F. All design documents prepared or furnished by Professional are instruments of service, and Professional retains an ownership and property interest (including the copyright and the right of reuse) in such documents, whether or not the Project is completed.

G. To the fullest extent permitted by law, Owner and Professional (1) waive against each other, and the other's employees, officers, directors, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to the Project, and (2) agree that Professional's total liability to Owner under this Agreement shall be limited to \$50,000 or the total amount of compensation received by Professional, whichever is less.

H. The parties acknowledge that Professional's scope of services does not include any services related to a Hazardous Environmental Condition (including but not limited to the presence of asbestos, PCBs, petroleum, hazardous substances or waste, and radioactive materials). If Professional or any other party encounters a Hazardous Environmental Condition, Professional may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until Owner: (i) retains appropriate specialist consultants or contractors to identify and, as appropriate, abate, remediate, or remove the Hazardous Environmental Condition; and (ii) warrants that the Site is in full compliance with applicable Laws and Regulations.

8.01 Dispute Resolution

Except for debt collection cases for less than \$25,000, and except as otherwise provided herein, all claims, counterclaims, disputes and other matters in question between the parties hereto arising out of or relating to this Agreement or the breach thereof will be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining, subject to the limitations and restrictions stated below. This agreement to arbitrate and any other agreement or consent to arbitrate entered into in accordance herewith as provided in this paragraph will be specifically enforceable under the prevailing arbitration law of any court having jurisdiction. Notice of demand for arbitration must be filed in writing with the other parties to this Agreement and with the American Arbitration Association. The demand must be made within a reasonable time after the claim, dispute, or other matter in question has arisen. In no event may the demand for arbitration be made after the expiration of one year from the date the cause of action accrued. The cause of action whether based in tort, contract, indemnity, contribution, or any other form of action, legal or equitable, shall be deemed to have accrued at the time the party asserting the claim either knew or, by the exercise of reasonable diligence, should have known of the existence of the facts underlying such claim, dispute or other matter in question regardless of when damages occur. After the expiration of said one year, any claim between the parties hereto shall be barred. No arbitration arising out of, or relating to this Agreement may include, by consolidation, joinder or in any other manner, any person or entity who is not a party to this Agreement.

The award rendered by the arbitrators will be final, not subject to appeal and judgment may be entered upon it in any court having jurisdiction thereof.

9.01 Total Agreement

A. This Agreement (together with any expressly incorporated appendix), constitutes the entire agreement between Owner and Professional, supersedes all prior written or oral understandings, and becomes binding as if fully executed at the time Professional commences work. To the extent that the terms of any appendices or documents referenced in this Agreement conflict with the terms of this Agreement, the terms of this Agreement shall govern. This Agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

Approved for the Agenda of:	APPROVED
10/22/2024	Motion No. 24-479

9.E.



Department of Public Works

TO: Honorable Mayor Bill Bazzi
Honorable City Council Members

FROM: John Danci, Director

DATE: October 15, 2024

RE: DPW Director Danci - Purchase & Payment - Lawn Mowers

The Public Works Department is requesting approval from City Council to:

The Public Works Department is requesting approval from City Council to:
Purchase two mowers from Hustler Turf at the sourcewell contracted price vie state bid. Conctract # 031121-THE.

This purchase will be paid out of the Building Maintenance Capital Outlay GL#101-265-981.000.

A Budget amendment is necessary to fund the GL in the amount of \$54,100. Please reduce the Building Maintenance Rep & Maint Equip GL 101-265-932.000 in the amount of \$28,666.and increase the Building Maintenance Capital Outlay GL#101-265-981.000.

I respectfully ask that the council authorize the Mayor and the Clerk to sign the required paperwork to execute the contract.

Furthermore, authorize the Mayor and Comptroller or Clerk to sign the necessary warrants, and the Treasurer to issue payments from GL#101-265-981.000

Additionally,

Thank you.

Attachments:

1. BNM Mower Purchase Agenda Item 10_22_24



Quote valid for 30 days

jrarkin@tricountyequipment.net

Page 748 of 767

Approved for the Agenda of:	APPROVED
10/22/2024	Motion No. 24-480

9.F.



Police Department

TO: Honorable Mayor Bill Bazzi
Honorable City Council Members

FROM: Kevin Swope, Police Chief

DATE: October 7, 2024

RE: Police Chief Swope - 2024 Justice Assistance Grant (JAG)

I am requesting permission for the mayor to authorize and accept the U.S. Department of Justice Grant, 2024 Justice Assistance Grant (JAG) in the amount of \$18,038.00

I am requesting a Motion to accept and approve the grant, in addition to authorize the mayor to accept and sign the Solicitation and Certification Form.

Respectfully submitted,

Kevin Swope
Chief of Police

Attachments:

1. 2024 US Dept of Justice JAG Grant

**U.S. DEPARTMENT OF JUSTICE
OFFICE OF JUSTICE PROGRAMS**

Edward Byrne Memorial Justice Assistance Grant Program FY 2024 Local Solicitation

Certifications and Assurances by the Chief Executive of the Applicant Government

On behalf of the applicant unit of local government named below, in support of that locality's application for an award under the FY 2024 Edward Byrne Memorial Justice Assistance Grant ("JAG") Program, and further to 34 U.S.C. § 10153(a), I certify to the Office of Justice Programs ("OJP"), U.S. Department of Justice ("USDOJ"), that all of the following are true and correct:

1. I am the chief executive of the applicant unit of local government named below, and I have the authority to make the following representations on my own behalf as chief executive and on behalf of the applicant unit of local government. I understand that these representations will be relied upon as material in any OJP decision to make an award, under the application described above, to the applicant unit of local government.
2. I certify that no federal funds made available by the award (if any) that OJP makes based on the application described above will be used to supplant local funds but will be used to increase the amounts of such funds that would, in the absence of federal funds, be made available for law enforcement activities.
3. I assure that the application described above (and any amendment to that application) was submitted for review to the governing body of the unit of local government (e.g., city council or county commission), or to an organization designated by that governing body, not less than 30 days before the date of this certification.
4. I assure that, before the date of this certification— (a) the application described above (and any amendment to that application) was made public; and (b) an opportunity to comment on that application (or amendment) was provided to citizens and to neighborhood or community-based organizations, to the extent applicable law or established procedure made such an opportunity available.
5. I assure that, for each fiscal year of the award (if any) that OJP makes based on the application described above, the applicant unit of local government will maintain and report such data, records, and information (programmatic and financial), as OJP may reasonably require.
6. I have carefully reviewed 34 U.S.C. § 10153(a)(5), and, with respect to the programs to be funded by the award (if any), I hereby make the certification required by section 10153(a)(5), as to each of the items specified therein.
7. If the applicant named below is not the unit of local government itself, I certify that it is an instrumentality of the unit of local government and is approved to serve as the applicant and recipient of FY 2024 JAG funding on behalf of the unit of local government.

Signature of Chief Executive of the Applicant Unit of
Local Government

Date of Certification

Printed Name of Chief Executive

Title of Chief Executive

Name of Applicant Unit of Local Government

Approved for the Agenda of:	APPROVED
10/22/2024	Motion No. 24-481

9.G.



City Council

TO: Honorable City Council Members

DATE:

RE: **ADDED AT MEETING** - Councilman Saab - Suspension of Contracts Between the City and Led Lion

ITEM ADDED AT THE MEETING, NO BACKUP PROVIDED.

Attachments:

None

Approved for the Agenda of:	APPROVED with Amendment
10/22/2024	Motion No. 24-482

11.A.



City Council

TO: Honorable City Council Members

DATE: October 16, 2024

RE: Council Chairman Baydoun - Resolution Regarding Water Consumption Investigation by Independent Party

WHEREAS, the residents of Dearborn Heights have expressed significant concerns regarding the rising water bills, which have become increasingly burdensome for many households; and

WHEREAS, the City Council is committed to ensuring transparency, accountability, and fair pricing in the management of public utilities; and

WHEREAS, an independent investigation is necessary to assess the operations, billing practices, and overall management of the Water Department, free from any potential conflicts of interest; and

WHEREAS, the findings of such an investigation will provide the City Council with critical insights and recommendations to address the concerns of residents and improve the water service provided;

NOW, THEREFORE, BE IT RESOLVED, that the City Council of Dearborn Heights hereby authorizes the issuance of a Request for Proposal (RFP) for an independent party to conduct a comprehensive investigation of the Water Department; and

BE IT FURTHER RESOLVED, that the investigation will include, but not be limited to, the following areas:

1. Review of current water billing practices and rates.
2. Analysis of operational efficiency within the Water Department.
3. Examination of any potential discrepancies in water usage and billing.
4. Assessment of customer service and responsiveness to resident inquiries and concerns.

BE IT FURTHER RESOLVED, that the selected independent party will report directly to the City Council, ensuring that the investigation is conducted without influence from city officials or the Water Department; or city administration, and

BE IT FURTHER RESOLVED that the City Council will allocate the necessary funds to support this investigation, prioritizing the financial well-being of our residents.

BE IT FINALLY RESOLVED, that the City Clerk shall publish this resolution and proceed with the RFP process promptly, with the goal of selecting an independent investigator within [insert timeline].

ADOPTED this by 10/22/2024 by the City Council of Dearborn Heights.

Requested by Council Chairman Mo Baydoun of Dearborn Heights

Attachments:

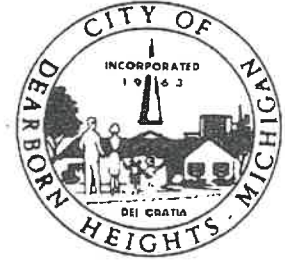
None

BUSINESS LICENSE RENEWAL APPLICATION

NO. BL-23-000013200

City of Dearborn Heights

6045 Fenton, Dearborn Heights, MI 48127
(313)791-3430



THE FOLLOWING LICENSE(S):

CABARET C-COUNCIL APPROVAL 50.00

JUKE BOX-MUSICAL DEVICES 10.00

MECH AMUSEMENT DEVICE 25.00 EA

TOBACCO 10.00

BUSINESS

RANDY'S ROBINDALE BAR

25122 WARREN

DEARBORN HEIGHTS, MI 48127

13-A

Approved for
the Agenda of:

10-22-24

TOTAL \$170.00

CURRENT LICENSE EXPIRES ON: October 09, 2024

You may renew your license by mail by returning this form prior to the expiration date with your check or money order in the amount indicated above payable to the City of Dearborn Heights. Do not send cash! If you renew more than 7 days late you will be assessed a penalty fee in the amount of 25% of your total license fee.


City Clerk

- ☒ At the present time, you are current on both personal property taxes and water, therefore your license is renewable
- ☐ At the present time you are delinquent on your water bill in the amount of \$ 0 and must pay this amount in full before renewing your license.
- ☐ At the present time you are delinquent on your personal property taxes in the amount of \$ 0 and must pay this amount in full before renewing your license.

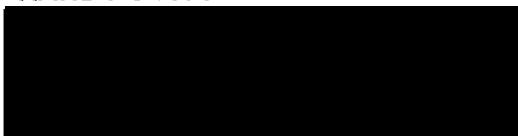
THE FAILURE TO SECURE A VALID BUSINESS LICENSE IS A VIOLATION OF CHAPTER 8 OF THE CODE OF ORDINANCES AND WILL RESULT IN A CLASS D MUNICIPLE INFRACTION BEING ISSUED.

PLEASE NOTE THE LATE FEE IS 25%

DO YOU HAVE AN ALARM SYSTEM? IS YOUR INFORMATION UP TO DATE?

If you have a security alarm for your business, an alarm registration is required by City ordinance. There is no cost to register your alarm. You may call our office at (313)791-3430 to obtain a copy of the alarm registration form, or print one from the Clerk's page on the Dearborn Heights City website: clerks@dearbornheightsmi.gov

RANDY'S ROBINDALE BAR



Invoice #:
00014693

License #:
BL-24-000014000

License Type:
BUSINESS LICENSE

Application Date:
10/08/2024

Expiration Date:
10/09/2025

Fee Items	Amount
CABARET C-COUNCIL APPROVAL	50.00
JUKE BOX-MUSICAL DEVICES	10.00
TOBACCO	10.00
MECH AMUSEMENT DEVICE	25.00 EA

CITY OF DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS, MI 48127
Phone : 313-791-3410

Received From: RANDY'S ROBINDALE BAR
Date: 10/08/2024 Time: 3:32:46 PM
Posting Date: 10/08/2024
Receipt: 1116576
Cashier: ealshaebi

ITEM REFERENCE	AMOUNT
BL BUSINESS LICENSING 00014693	\$170.00
TOTAL	\$170.00
CHECKS 19341	\$170.00
Total Tendered:	\$170.00
Change:	\$0.00

PAID
CITY OF DEARBORN HEIGHTS

OCT 08 2024

BY _____ CK # _____

Billing/Invoice Date: 10/08/2024
Total Due: \$170.00

RANDY'S ROBINDALE BAR
25122 WARREN
DEARBORN HEIGHTS, MI 48127



CITY OF DEARBORN HEIGHTS APPLICATION FOR TEMPORARY FOOD TRUCK/TENT/CART LICENSE APPLICATION

NAME OF APPLICANT

Basel Alkadri

BUSINESS NAME

Shawarma Joe

PHONE #

313 264 3559

LOCATION WITHIN THE CITY (ADDRESS & ZIP CODE)

25830 Ford Road

TYPE OF VEHICLE TO BE USED

Food truck
(if applicable)

VEHICLE PLATE #

E 2841329
(if applicable)

HAS THE ABOVE PERSON EVER BEEN CONVICTED OF:

A FELONY: YES

NO ☒

A MISDEMEANOR: YES

NO ☒

IF YES, BRIEFLY STATE REASON (S)

The applicant voluntarily and knowingly is signing this application with full admission and acknowledgment that operating the food truck and/or tent is not in violation of any terms or conditions of probation or parole, if applicable, and is signing under pains and penalties of perjury.

SIGNATURE:



DATE:

10/22/2024**FOR CLERK'S OFFICE USE ONLY**

BACKGROUND CHECK:

APPROVED BY:

G. Semenick

DISSAPPROVED BY:

DATE: 10-22-24

DEPARTMENT REMARKS:

PLEASE SEE NEXT PAGE FOR ADDITIONAL REQUIREMENTS

CITY OF DEARBORN HEIGHTS
6045 FENTON
DEARBORN HEIGHTS, MI 48127
Phone : 313-791-3410

Received From: SHAWARMAJE

BASEL ALKADRI

Date: 10/22/2024 Time: 12:57:51 PM

Posting Date: 10/22/2024

Receipt: 1117896

Cashier: aalsnaebi

ITEM REFERENCE AMOUNT

BL BUSINESS LICENSING

00014704 \$150.00

SUB-TOTAL \$150.00

Total Tendered: \$150.00

ORDER #: 164692897

Credit Card Type Visa

CC Processing Fee \$4.50

GENERAL FUND CC XXXXXXXXXXXX0327

Grand Total: \$154.50

Change: \$0.00

Signature

Invoice #:
00014704

License #:
BL-24-000014011

License Type:
BUSINESS LICENSE

Application Date:
10/17/2024

Expiration Date:
04/20/2025

Fee Items

Amount

TRANSIENT MERCHANT 180 DAYS 150.00

\$150.00

PAID

CITY OF DEARBORN HEIGHTS

OCT 22 2024

BY _____ CK # _____

Billing/Invoice Date:

10/17/2024

Total Due:

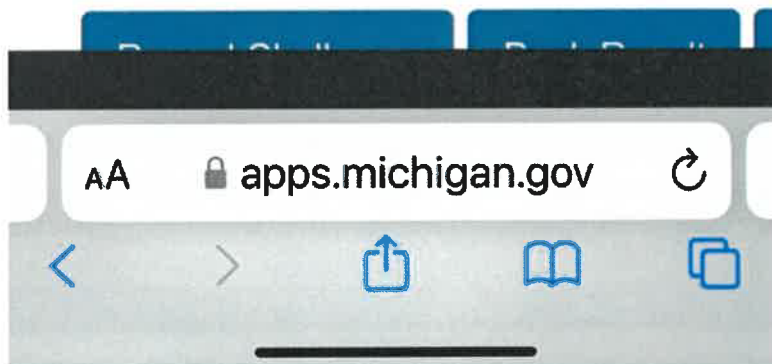
\$150.00

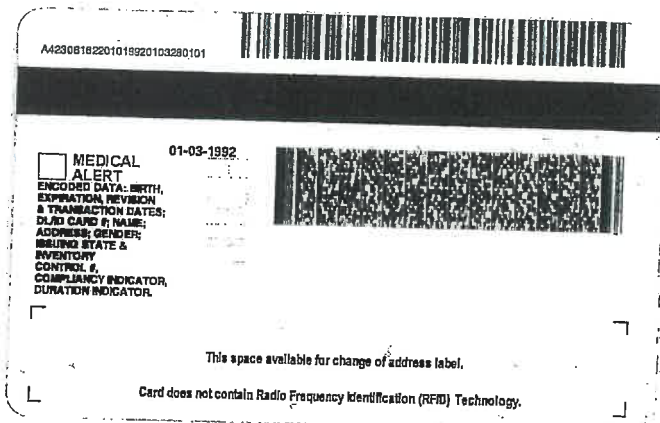
SHAWARMAJE



Name	: Basal W AJ Endri
Date of Birth	
Gender	
Race	
Reason	
Amount Paid	
Order Date	
Miscellaneous No.	
Order Number	: 7729929
Confirmation No	: 24102179785430

A SEARCH OF MICHIGAN'S CRIMINAL HISTORY FILE HAS NOT LOCATED A CRIMINAL RECORD THAT EXACTLY MATCHES THE INFORMATION THAT YOU HAVE PROVIDED.





CITY OF DEARBORN HEIGHTS / ELECTRICAL PERMIT APPLICATION

Department of Building and Engineering

6045 Fenton Ave., Dearborn Heights, MI 48127

PHONE #: 313-791-3470 / building.dept@dearbornheightsmi.gov

Applicant is: CONTRACTOR

OR HOMEOWNER

Address of Work: 25000

DATE: 02/17/23

EMAIL: [REDACTED]

PHONE: [REDACTED]

PHONE: [REDACTED]

Licenseholder / Applicant Name: Basel Alkudri

SIGNATURE: [Signature]

FIXTURES	FEE	NO.	TOTAL	FIXTURES	FEE	NO.	TOTAL
BASE FEE	\$60.00	1	\$60.00	GENERATOR: INCLUDE KW	\$35		
100 AMP SERVICE	\$40			LOW VOLTAGE / ALARM INSTALLATION	\$50		
101 TO 200 AMP SERVICE	\$60			MINOR WIRING	\$30		
OVER 200 AMP PRIMARY SERVICE	\$70			MOTORS / FRACTIONAL H.P.	\$30		
1 - 25 LIGHT FIXTURES / SOCKETS	\$35			NEON LIGHTS (PER 25')	\$30		
ADDITIONAL SET OF LIGHT FIXTURES/ SOCKETS	\$25			POOL / SPA	\$30		
AC / IAC / FURNACE (CIRCLE ONE)	\$30			SERVICE CABLE: TOP - BOTTOM - RISE - METER	\$40		
ADDITIONAL INSPECTIONS	\$50			SIGN CONNECTION (EACH SIGN)	\$40		
CARNIVAL / FESTIVAL / OUTDOOR EVENT / FOOD TRUCK	\$120			SOLAR PANEL SERVICE	\$50		
CIRCUITS	\$20			SPACE HEAT / RANGES / OVEN (EACH)	\$20		
DISHWASHER	\$20			TEMP SERVICE WITH ROUGH INSPECTION	\$50		
ELECTRIC CAR CHARGER	\$35			WATER HEATER	\$30		
FIRE ALARMS (COMMERCIAL - PER 5)	\$65						
GARBAGE DISPOSAL	\$20						
				TOTAL PERMIT FEE:			180

Section 23A of the State Construction Code Act of 1972, Act No. 230 of the Public Act of 1972, being Section 125.1523A of the Michigan Compiled Laws, prohibits a person from conspiring to circumvent the licensing requirements of this state relating to persons who are to perform work on a residential structure. Violators of Sec. 23A are subject to civil fines.

**ALL PERMITS MAILED IN BY CONTRACTORS MUST INCLUDE A SELF-ADDRESSED STAMPED ENVELOPE FOR THE PERMIT TO BE MAILED TO YOU.

\$75 FEE: MISSED INSPECTION / RE-INSPECTION / ADDT'L INSPECTION AFTER PERMIT ISSUED

EFFECTIVE: 12/1/2023

CITY OF DEARBORN HEIGHTS

Department of Building and Engineering
6045 Fenton • Dearborn Heights, MI 48127
313-791-3470

DATE 9-25-24 CLERK xy

NAME B. Alkadie

QUAN.	DESCRIPTION / ADDRESS	AMOUNT
	BUILDING	
	PLUMBING	
	ELECTRICAL	
	HEATING	
	REFRIG.	
	SIGN	
	DEMO	
	UTILITY / DISRUPT.	
	FIRE SUPPRESS.	
1	FOOD TRUCK <u>25830 Ford</u> <u>30340 800</u>	180
	SIDEWALK / CURB / APPR.	
	PLAN REVIEW ☐ REGIS. ☐	
	PC ☐ ZBA ☐ DEMO ☐	
	MISC. RENTAL REGIS.	
	C/O: RES. ☐ COMM'L ☐ RENTAL ☐	
	VACANT OCCUPIED	
	DATE TIME	
	JOB ADDRESS:	

No. 226633

CITY OF DEARBORN HEIGHTS
Date Entered 09/25/2024 11:26:46 AM
Posting Date: 09/25/2024
Ref BUILDING DEPT RECEIPTS
Receipt 1115113
Amount \$180.00

180

CITY OF DEARBORN HEIGHTS
DEPARTMENT OF BUILDING AND ENGINEERING
6045 Fenton — Dearborn Heights, MI 48127 — 277-7306

BOND APPLICATION No. 5418

DATE 3-15-23

LOCATION 25830 Ford Rd., Dearborn Heights

CODE 2491

LOT NO. & SUBDIVISION

NAME Basel Al-Kadi / Shawarraj

PHONE NO. 313-358-2286

ADDRESS

TYPE OF BOND Cash / Clean Up

AMOUNT OF BOND \$ 500.00

RECEIPT NO.

BOND WILL BE FORFEITED (2) YEARS FROM DATE OF ISSUE IF
ITEMS OUTSTANDING.

DISPOSITION OF BOND AS FOLLOWS:

Date Entered 04/15/2023 10:37:26
Posting Date: 03/15/2023
Ref: STREET PROTECTION - OKD
Receipt: 102455
Amount: \$500.00

DIRECTOR OF PUBLIC WORKS

CLERK

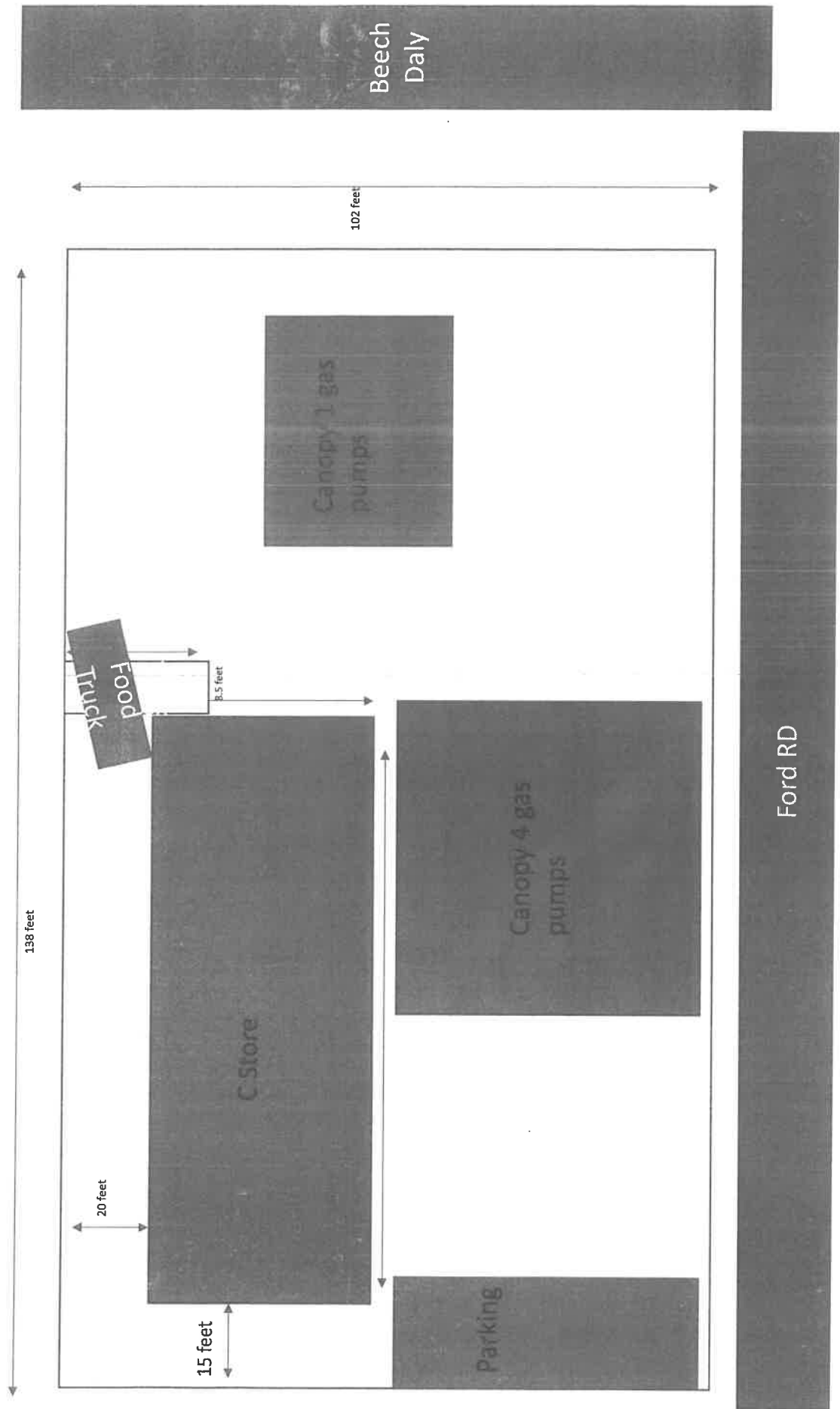
PERMITTEE

FORM NO. 49-1019

ORIGINAL



**BUILDING & ENGINEERING
DEPARTMENT**
APPROVED *[Signature]*
DATE *10-1-21*



Google Earth (Bird View) of Site and surrounding Area





**Michigan Department of Agriculture
and Rural Development**
Bureau of Food Safety & Animal Health

License Year: 04/30/2025

License

SST-4982-355398

City Of Detroit

Food Service License Renewal Application

License renewal must be completed in accordance with provisions of the Michigan Food Law, Public Act 92 of 2000, as amended.

City Of Detroit | 313-876-4000 | FoodsafetyDHD@detroitmi.gov

SHAWARMAJE LLC

A. ORGANIZATION DETAILS

* = Required

Please Contact the Local Health Department If There Is a Change in Name or Ownership

Organization Name

SHAWARMAJE LLC

Business Email (Enter Any Changes in the Fields Below if Different)

DARDOORMOHAMMAD880@GMAIL.COM

Business Phone Number (###)###-####

Enter Mailing Address if Different

D. AUTHORIZED AGENT CONTACT

Enter the Name and Information of the Owner or Person Authorized by the Owner to Manage the License

Contact Name *

Basel Alkadri

QUESTIONS

Please contact your Local Health Department:

Detroit Health Department

313-876-4000

100 MACK AVE STE 311

DETROIT MI 48201-2416

FoodsafetyDHD@detroitmi.gov

LICENSE SST-4982-355398

Food Service - Special Transitory Food Unit

Mobile Unit Name *

(Include Mobile Unit Number, Enter If Different)

SHAWARMAJE LLC

Exemptions

No Exemptions

(Please Contact the Local Health Department If There Is a Change in Exemptions)

C. FEES DUE

Total Fee Due

\$ 154.00

Mail Application and

Make Checks Payable to:

DETROIT HEALTH DEPARTMENT

100 MACK AVE STE 311

DETROIT MI 48201-2416



INTERNAL USE ONLY

This Area for Local Health Department Use

Amount Received

\$ 154.00

Date Received (MM/DD/YYYY)

4-30-24

Check Transaction/Receipt Number

APP03102C, V1 4167

Special Transitory Food Unit

Paid Inspection Dates (MM/DD/YYYY)

#1

#2

Exemptions

☐ State

☐ Local

☐ Veteran

License Status

☐ License Inactive

Signature of Health Department Representative

X

Date (MM/DD/YYYY)

4-30-24



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

3/13/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Provision Insurance Group, LLC 30200 Telegraph Rd, Suite 350 Bingham Farms MI 48025	CONTACT NAME: Teri Davis PHONE (A/C, No, Ext): (248) 262-7362 E-MAIL: tdavis@provisionagency.com ADDRESS: INSURER(S) AFFORDING COVERAGE INSURER A: OLD GUARD INS CO INSURER B: PLAZA INSURANCE COMPANY INSURER C: INSURER D: INSURER E: INSURER F: NAIC # 17558 30945
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COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC OTHER: ☐ AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY ☐ UMBRELLA LIAB ☐ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE DED ☐ RETENTION \$ ☐ WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ☐ N/A ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y	307120R	03/13/2024	03/13/2025	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Injury from food included \$ COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ \$ EACH OCCURRENCE \$ AGGREGATE \$ \$ PER STATUTE ☐ OTH-ER ☐ E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000 Special 80,000
A	INMRC		307120R	03/13/2023	03/13/2024	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Product liability includes injury from food product

CERTIFICATE HOLDER

Insured Copy	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE Teri Davis
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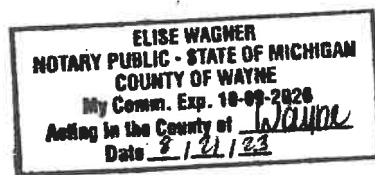
Food Truck Permission

I am Youssef El Moussawi, Owner of Moussawi Property located at 25830 Ford rd., Dearborn Heights MI 48127, will be hosting, Basel al Kadri food truck, at our property for the Fall and Winter seasons 2023/2024 and would kindly request that the City of Dearborn Heights accepts his permit application.



Youssef El Moussawi

(313) 926-7072



wayne