



**ADDENDUM NO. 1
WILTSHIRE ROAD WATER MAIN REPLACEMENT AND PAVEMENT RECONSTRUCTION
CITY OF BERKLEY**

ISSUED: March 23, 2023

HRC Job No. 20220797

INTENT:

This Addendum No. 1 is issued prior to receipt of bids to provide for certain changes and clarifications to the specifications and/or the plans, as herein specified, and is hereby made a part of the Contract Documents and shall be taken into consideration in preparing the Proposal. The General Conditions and Specifications for the original work and the Contract Drawings are to govern this work unless otherwise revised herein. All other conditions remain the same.

The Bidder shall acknowledge the receipt of this Addendum on Page 00300/11 of the Proposal.

**ADDENDUM NO. 1
GENERAL**

Specification Changes

1. **Section 00300 – Proposal: (Reissued)**
 - a. **Alternate I**
 - i. HDPE pipe may be installed via open cut or horizontal directional drilling. A statement has been added to the proposal to reflect this.
 - ii. Corrected item number of the item to be subtracted in the alternate section.
2. **Section 01220 – Bid Item Description**
 - a. Added bid item description for “Water Main, 8-inch Dia., HDPE SDR 11, Open Cut / HDD”
 - b. Revised references to MDOT specifications from 2012 to the current 2020 specifications.
3. **Section 02336 – Horizontal Directional Drilling**
 - a. Added specification for horizontal directional drilling.

Plan Changes

1. **CD-2 (Reissued)**
 - a. Changed Performance Grades of HMA from PG 58-28 to **PG 64-22**.

Responses to Submitted Bidder Inquiries:

QUESTION: *Is the number of lead services to be replaced known?*

RESPONSE: The City will be replacing all of the lead services on the project from the curb box to the meter at their expense. The quantity of lead service replacement from curb box to meter is included in the proposal for contingency.

Summary:

This Addendum No. 1 has been issued in order to clarify, modify, and add additional items to the original Bid Package. The Contractor shall acknowledge receipt of this Addendum No. 1 by signing in the location provided below and incorporating this Addendum No. 1 with the submission of their bid.

Failure to include Addendum No. 1 and its attachments may result in rejection of the bid.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.



Edward Zmich
Project Manager

Attachments: Section 00300 – Proposal, 01220 – Bid Item Description, 02336 – Horizontal Directional Drilling

pc: All Prospective Bidders
City of Berkley; Shawn Young, DPW Director
HRC; R. Alix, File

Accepted:

Company: _____

Signature: _____

Printed Name: _____

Title: _____

Dated: _____

PROPOSAL
FOR
WILTSHIRE ROAD
WATER MAIN REPLACEMENT
AND PAVEMENT RECONSTRUCTION
CITY OF BERKLEY
OAKLAND COUNTY, MICHIGAN

City of Berkley
3338 Coolidge Highway
Berkley, Michigan 48072

Bids Due: **Monday, March 27, 2023**
On or Before **11:00 am, Local Time**
HRC Job No. 20220797

To Prospective Bidders:

Name of Bidder: _____

Address: _____

Date: _____ Telephone: _____ Fax: _____

The above, as Bidder, hereby declares this bid is made in good faith without fraud or collusion with any persons bidding, and that the Drawings, Specifications, and all other information referenced in the Instructions to Bidders have been examined. Further, the Bidder is familiar with the location of the work described herein and is fully informed as to the nature of the work and the conditions relating to the performance of the Contract.

The Bidder acknowledges that no representations or warranties of any nature whatsoever have been received, or are relied upon from the City of Berkley, its agents or employees, as to any conditions to be encountered in accomplishing the work and that the bid is based solely upon the Bidder's own independent judgment.

The above, as Bidder, hereby certifies that the Drawings, Specifications, and other data provided by the Owner for bidding purposes have been examined. Further, the undersigned certifies that the proposed construction methods have been reviewed and found acceptable for the conditions which can be anticipated from the information provided for bidding.

The Bidder hereby affirms that the site of work has been inspected and further declares that no charges in addition to the Individual Unit Prices shall be made on account of any job circumstances or field conditions which were present and/or ascertainable prior to the bidding. In addition, The Contractor, as such and as Bidder, shall make the determination as to existing soil conditions and shall also complete the work under whatever conditions created by the Contractor/Bidder's sequence of construction, construction methods, or other conditions the Contractor/Bidder may create, at no additional cost to the Owner.

The above, as Bidder, confirms knowledge of the location of the proposed Wiltshire Road Water Main Replacement and Pavement Reconstruction project, and appurtenant construction in the City of Berkley, Oakland County, Michigan, and the conditions under which it must be constructed; and also declares to have carefully examined the Drawings, Specifications, and Contract Documents which the Bidder understands and accepts as sufficient for the purpose of constructing said Wiltshire Road Water Main Replacement and Pavement Reconstruction project, and appurtenant work, and agrees to contract with the City of Berkley to furnish all labor,

materials, tools, equipment, facilities and supervision necessary to do all the work specified and prescribed for the City of Berkley, in strict accordance with the Owner's General Conditions, and with the full intent of the Drawings and Specifications, prepared by Hubbell, Roth & Clark, Consulting Engineers, and will accept in full payment therefore the sum of:

DIVISION I - WILTSHIRE RD (WOODWARD TO MORTENSON)

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
1. Mobilization Division I (Max. 5%)	1	LS @	Lump Sum	= \$_____
2. Erosion Control, Inlet Protection, Fabric Drop	16	Ea @	\$_____	= \$_____
3. Tree Protection Fence	1910	Lft @	\$_____	= \$_____
4. Exploratory Excavation & Utility Location	1	LS @	Lump Sum	= \$_____
5. Traffic Maintenance, Incl. Flag Control, Division 1	1	LS @	Lump Sum	= \$_____
6. Barricade, Type III, High Intensity, Furn, Special	5	Ea @	\$_____	= \$_____
7. Barricade, Type III, High Intensity, Oper, Special	5	Ea @	\$_____	= \$_____
8. Plastic Drum, Fluorescent, Furn	50	Ea @	\$_____	= \$_____
9. Plastic Drum, Fluorescent, Oper	50	Ea @	\$_____	= \$_____
10. Channelizing Device, 42-inch, Furn	75	Ea @	\$_____	= \$_____
11. Channelizing Device, 42-inch, Oper	75	Ea @	\$_____	= \$_____
12. Sign, Type B, Temp, Prismatic, Furn	200	Sft @	\$_____	= \$_____
13. Sign, Type B, Temp, Prismatic, Oper	200	Sft @	\$_____	= \$_____
14. Sign, Type B, Temp, Prismatic, Furn, Special	25	Sft @	\$_____	= \$_____
15. Sign, Type B, Temp, Prismatic, Oper, Special	25	Sft @	\$_____	= \$_____
16. Sign Cover	5	Ea @	\$_____	= \$_____
17. Lighted Arrow, Type C, Furn	1	Ea @	\$_____	= \$_____
18. Lighted Arrow, Type C, Oper	1	Ea @	\$_____	= \$_____
19. Color Audio-Video Route Survey	1	LS @	Lump Sum	= \$_____
20. Dust Palliative, Applied	3	Ton @	\$_____	= \$_____
21. Pavt, Rem, MOD	6,170	Syd @	\$_____	= \$_____

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
22. Driveway, Rem	490	Syd @	\$ _____	= \$ _____
23. Sidewalk, Rem	2,070	Syd @	\$ _____	= \$ _____
24. Dr Structure, Rem	10	Ea @	\$ _____	= \$ _____
25. Dr Structure, Rem, MOD	1	Ea @	\$ _____	= \$ _____
26. Storm Sewer, Rem	250	Lft @	\$ _____	= \$ _____
27. Tree, Rem, Less than 19-inch (if needed)	2	Ea @	\$ _____	= \$ _____
28. Tree, Rem, 19-inch to 36-inch (if needed)	2	Ea @	\$ _____	= \$ _____
29. Station Grading, MOD	18.5	Sta @	\$ _____	= \$ _____
30. Subgrade Undercutting, Type 1, MOD	450	Cyd @	\$ _____	= \$ _____
31. Maintenance Gravel, Special	2,800	Ton @	\$ _____	= \$ _____
32. Hand Patching, HMA	10	Ton @	\$ _____	= \$ _____
33. Aggregate Base, MDOT 21AA, 8.5-inch	3,200	Ton @	\$ _____	= \$ _____
34. Aggregate Base, 1"x3", 8-inch	3,000	Ton @	\$ _____	= \$ _____
35. Tensar TX150L Triaxial Geogrid	6,400	Syd @	\$ _____	= \$ _____
36. Void Reducing Asphalt Membrane (Spray, J-Band Type)	1,800	Lft @	\$ _____	= \$ _____
37. 2-inch MDOT 5EML, MOD Mix (Wearing)	550	Ton @	\$ _____	= \$ _____
38. 2.5-inch MDOT 4EML, MOD Mix (Leveling/Base)	700	Ton @	\$ _____	= \$ _____
39. Concrete Pavement w/ Integral Curb & Gutter, 8-inch (incl. agg base)	390	Syd @	\$ _____	= \$ _____
40. Driveway, Nonreinf Conc, 6-inch (incl. sand base)	560	Syd @	\$ _____	= \$ _____
41. Curb, Conc, MDOT Det F4	3,700	Lft @	\$ _____	= \$ _____
42. Sidewalk, Conc, 4-inch, Special (incl. sand base)	15,600	Sft @	\$ _____	= \$ _____

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
43. Sidewalk, Conc, 6-inch, Special (incl. sand base)	2,300	Sft @	\$ _____	= \$ _____
44. Sidewalk Ramp, Conc, 6-inch, Special (incl. sand base)	1,900	Sft @	\$ _____	= \$ _____
45. Detectable Warning Surface (5-foot x 2-foot)	16	Ea @	\$ _____	= \$ _____
46. Underdrain, Subgrade, 6-inch, Special	4,100	Lft @	\$ _____	= \$ _____
47. 12-inch C76 CL-IV Sewer, Tr. Det "B"	310	Lft @	\$ _____	= \$ _____
48. 4-foot Diameter Manhole	3	Ea @	\$ _____	= \$ _____
49. 4-foot Diameter Catch Basin	7	Ea @	\$ _____	= \$ _____
50. 2-foot Diameter Catch Basin	7	Ea @	\$ _____	= \$ _____
51. Drainage Structure Tap, 12-inch	4	Ea @	\$ _____	= \$ _____
52. Dr Structure Frame & Cover, EJ 1040	8	Ea @	\$ _____	= \$ _____
53. Dr Structure Frame & Cover, EJ 5000	14	Ea @	\$ _____	= \$ _____
54. Dr Structure Cover, Adjust	15	Ea @	\$ _____	= \$ _____
55. Water Structure Cover, Adjust	2	Ea @	\$ _____	= \$ _____
56. Sanitary Sewer Lead Repair (if needed)	3	Ea @	\$ _____	= \$ _____
57. Hydrant Assembly, Rem	3	Ea @	\$ _____	= \$ _____
58. Gate Valve and Well, Rem	4	Ea @	\$ _____	= \$ _____
59. Water Main, 6-inch, Rem	72	Lft @	\$ _____	= \$ _____
60. Water Main, 12-inch, Rem	60	Lft @	\$ _____	= \$ _____
61. Abandon 6-inch Water Main in Place & Grout	1,470	Lft @	\$ _____	= \$ _____
62. Abandon 12-inch Water Main in Place & Grout	290	Lft @	\$ _____	= \$ _____
63. Water Main, 6-inch, Cut & Plug	10	Ea @	\$ _____	= \$ _____
64. Water Main, 12-inch, Cut & Plug	2	Ea @	\$ _____	= \$ _____

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
65. Water Main Break Repair (12-inch & Less) (if needed)	3	Ea @	\$ _____	= \$ _____
66. Water Main, 8-inch Dia., CL 54 DI, Open Cut	1,820	Lft @	\$ _____	= \$ _____
67. Water Main Connection, 6-inch	1	Ea @	\$ _____	= \$ _____
68. Water Main Connection, 8-inch	2	Ea @	\$ _____	= \$ _____
69. Water Main Connection, 12-inch	1	Ea @	\$ _____	= \$ _____
70. Gate Valve & Well, 8-inch	6	Ea @	\$ _____	= \$ _____
71. Water Structure Cover, EJIW No. 1040	9	Ea @	\$ _____	= \$ _____
72. Short Water Service Lead to New Main, Polyethylene, 1-inch, Open Cut	11	Ea @	\$ _____	= \$ _____
73. Long Water Service Lead to New Main, Polyethylene, 1-inch, Directional Drill	15	Ea @	\$ _____	= \$ _____
74. Lead Line Water Service Replacement (Private) (if needed)	3	Ea @	\$ _____	= \$ _____
75. Water Service Stop Box	26	Ea @	\$ _____	= \$ _____
76. Hydrant Assembly, 5BR250 Model	3	Ea @	\$ _____	= \$ _____
77. 4-inch Topsoil	3,700	Syd @	\$ _____	= \$ _____
78. Sodding (incl. 14-day watering)	3,700	Syd @	\$ _____	= \$ _____
79. Seed & Mulch Blanket (incl. 14-day watering)	925	Syd @	\$ _____	= \$ _____
80. Sign, Type III, Erect, Salv	22	Ea @	\$ _____	= \$ _____
81. Sign, Type III Rem	32	Ea @	\$ _____	= \$ _____
82. Sign, Type IIIA	72	Sft @	\$ _____	= \$ _____
83. Sign, Type IIIB	3	Sft @	\$ _____	= \$ _____
84. Sign, Type VB	8	Sft @	\$ _____	= \$ _____

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
85. Reflective Panel for Permanent Sign Support, 6 foot	10	Ea @	\$ _____	= \$ _____
86. Sign, Type III, Rem, Salv	22	Ea @	\$ _____	= \$ _____
87. Ground Mtd Sign Support, Rem	21	Ea @	\$ _____	= \$ _____
88. Steel Post System	21	Ea @	\$ _____	= \$ _____
89. Pavt Mrkg, Ovly Cold Plastic, 24-inch Stop Bar	12	Lft @	\$ _____	= \$ _____
90. Permit Allowance	1	Dlr @	\$ <u>7,000.00</u>	= \$ <u>7,000.00</u>
91. Observation Crew Days	_____	Day @	\$ <u>800.00</u>	= \$ _____

SUBTOTAL- DIVISION I*

= \$ _____

**Copy Subtotal Amount to Alternate Bid section below*

DIVISION II - WILTSHIRE RD (MORTENSON TO COOLIDGE)

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
1.Mobilization Division II (Max. 5%)	1	LS @	Lump Sum	= \$ _____
2.Erosion Control, Inlet Protection, Fabric Drop	6	Ea @	\$ _____	= \$ _____
3. Tree Protection Fence	432	Lft @	\$ _____	= \$ _____
4. Traffic Maintenance, Incl. Flag Control, Division 2	1	LS @	Lump Sum	= \$ _____
5. Barricade, Type III, High Intensity, Furn, Special	10	Ea @	\$ _____	= \$ _____
6. Barricade, Type III, High Intensity, Oper, Special	10	Ea @	\$ _____	= \$ _____
7. Channelizing Device, 42 inch, Furn	75	Ea @	\$ _____	= \$ _____
8. Channelizing Device, 42 inch, Oper	75	Ea @	\$ _____	= \$ _____
9. Sign, Type B, Temp, Prismatic, Furn	200	Sft @	\$ _____	= \$ _____
10. Sign, Type B, Temp, Prismatic, Oper	200	Sft @	\$ _____	= \$ _____
11. Sign, Type B, Temp, Prismatic, Furn, Special	25	Sft @	\$ _____	= \$ _____

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
12. Sign, Type B, Temp, Prismatic, Oper, Special	25	Sft @	\$_____	= \$_____
13. Sign Cover	5	Ea @	\$_____	= \$_____
14. Color Audio-Video Route Survey	1	LS @	Lump Sum	= \$_____
15. Cold Milling, HMA Surface	6,400	Syd @	\$_____	= \$_____
16. Driveway, Rem	1,230	Syd @	\$_____	= \$_____
17. Sidewalk, Rem	530	Syd @	\$_____	= \$_____
18. Curb, Rem	2,710	Lft @	\$_____	= \$_____
19. Pavt Repair, Nonreinf Conc, 6-inch, MOD	520	Syd @	\$_____	= \$_____
20. Maintenance Gravel, Special	1,200	Ton @	\$_____	= \$_____
21. Hand Patching, HMA	2	Ton @	\$_____	= \$_____
22. Aggregate Base, MDOT 21AA, 2-inch	780	Ton @	\$_____	= \$_____
23. Void Reducing Asphalt Membrane (Spray, J-Band Type)	2,300	Lft @	\$_____	= \$_____
24. 1.5-inch MDOT 5EML, MOD Mix (Wearing)	540	Ton @	\$_____	= \$_____
25. 2-inch MDOT 4EML, MOD Mix (Leveling/Base)	740	Ton @	\$_____	= \$_____
26. Driveway, Nonreinf Conc, 6-inch (incl. sand base)	1,300	Syd @	\$_____	= \$_____
27. Curb, Conc, MDOT Det F4	2,700	Lft @	\$_____	= \$_____
28. Sidewalk, Conc, 4-inch, Special (incl. sand base)	2,600	Sft @	\$_____	= \$_____
29. Sidewalk, Conc, 6-inch, Special (incl. sand base)	470	Sft @	\$_____	= \$_____
30. Sidewalk Ramp, Conc, 6-inch, Special (incl. sand base)	1,200	Sft @	\$_____	= \$_____
31. Detectable Warning Surface (5-foot x 2-foot)	16	Ea @	\$_____	= \$_____
32. Dr Structure Frame & Cover, EJ 1040	1	Ea @	\$_____	= \$_____

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
33. Dr Structure Frame & Cover, EJ 5000	6	Ea @	\$_____	= \$_____
34. Dr Structure Cover, Adjust	8	Ea @	\$_____	= \$_____
35. Water Structure Cover, EJIW No. 1040	1	Ea @	\$_____	= \$_____
36. Water Structure Cover, Adjust	1	Ea @	\$_____	= \$_____
37. 4-inch Topsoil	400	Syd @	\$_____	= \$_____
38. Sodding (incl. 14-day watering)	400	Syd @	\$_____	= \$_____
39. Seed & Mulch Blanket (incl. 14-day watering)	100	Syd @	\$_____	= \$_____
40. Sign, Type III Rem	14	Ea @	\$_____	= \$_____
41. Sign, Type IIIA	28	Sft @	\$_____	= \$_____
42. Reflective Panel for Permanent Sign Support, 6 foot	2	Ea @	\$_____	= \$_____
43. Ground Mtd Sign Support, Rem	11	Ea @	\$_____	= \$_____
44. Steel Post System	11	Ea @	\$_____	= \$_____
45. Pavt Mrkg, Ovly Cold Plastic, 24-inch Stop Bar	12	Lft @	\$_____	= \$_____
46. Observation Crew Days	_____	Day @	\$ 800.00	= \$_____

SUBTOTAL- DIVISION II

\$ _____

BID SUMMARY:

SUBTOTAL DIVISION I:

\$ _____

SUBTOTAL DIVISION II:

\$ _____

TOTAL AMOUNT OF BID (DIVISION I + DIVISION II):

\$ _____

ALTERNATES

Voluntary Alternates proposed by the Bidder will not be considered. The Bidder shall submit a bid based on the information shown on the Drawings and Specifications. Alternates listed below are for the Owner's convenience and shall be priced as indicated by the work description. All alternates shall be clearly marked whether they represent an add or deduct to the Division I Bid Price quoted herein. All Alternates which are quoted shall be complete and the price shall include all Bidder mark-ups. Each Alternate shall be clearly marked if it represents an Add or a Deduct from the Division I Bid Price.

DIVISION I ALTERNATE – The Drawings indicate the water main material as 8-inch Cl. 54 ductile iron. The Owner is requesting an alternate price for utilizing 8-inch HDPE SDR 11 water main in lieu of Cl. 54 ductile iron. **The costs associated with this alternate shall be listed below and SHALL NOT be included in the Total Amount of the Bid for Division I above. Either the Division I Alternate Bid or the Division I Bid above will be awarded, not both.** The City will decide after the bids are opened whether to elect this alternate.

Installation of the water main may be performed via open-cut construction methods or horizontal directional drilling (HDD). Contractors electing to use HDD methods must meet additional requirements as described in Section 02336 and their bid unit price must reflect their proposed method of installation. Contractor is responsible for verifying the elevations of utilities crossing the proposed water main, including sewer services, and making adjustment to water main elevations to avoid conflicts. Bidders must indicate their method of installation on the line below and be prepared to explain their approach at a Pre-Award Meeting if requested by the Owner.

DIVISION 1 ALTERNATE (HDPE Water main)

<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total Cost</u>
<u>*Copy Total Amount of Division I from Proposal:</u>			
TOTAL AMOUNT OF BID – DIVISION I			\$ _____
<u>Subtract (Item #66 in Division I of Proposal):</u>			
1. Water Main, 8-inch Dia., CL 54 DI, Open Cut	1,820	@ Lineal Feet	= \$ _____
<u>Add in lieu of:</u>			
2. Water Main, 8-inch Dia., HDPE SDR 11, Open Cut / HDD	1,820	@ Lineal Feet	= \$ _____
Installation Method:			_____
TOTAL AMOUNT OF BID – DIVISION I ALTERNATE:			\$ _____

BID SUMMARY (ALTERNATE):

TOTAL AMOUNT OF BID – DIVISION I ALTERNATE:	\$ _____
TOTAL AMOUNT OF BID – DIVISION II:	\$ _____
TOTAL AMOUNT OF ALTERNATE BID (DIV. I ALT. + DIV. II):	\$ _____

OWNERS RIGHTS

The Owner reserves the right to add or delete quantities from the Contract and adjustments will be subject to the availability of funds at the time of bid letting. Deletion of quantities shall not be grounds for the low qualified bidder to adjust unit prices for the project that the Owner intends to execute as a Contract, nor shall the Contractor be entitled to compensation from unrealized profits resulting from the deletion of quantities. Bid unit prices are to be held firm for the duration of the project regardless of any potential changes that may occur in market value during the contractual period. The Owner also reserves the right to award either the Division 1 Bid or the Division I(Alternate Bid depending on the outcome of the bids and the availability of funds. **BOTH DIVISION I, DIVISION II AND THE DIVISION I ALTERNATE MUST BE QUOTED IN ORDER FOR THE BID TO BE CONSIDERED RESPONSIVE.**

The Owner, at its sole discretion, reserves the right to award to the Bidder who, in the sole determination of the Owner, will best serve the interest of the Owner. The Owner reserves the right to accept any bid, to reject any or all bids, to waive any and all informalities involving price, time, or changes in the work, and to negotiate contract terms with the successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional bids. However, it is the intention of the Owner to award to the low total bid to one bidder. Also, the Owner reserves the right to reject the bid of any Bidder if the Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the bid is not responsive or the Bidder is unqualified, of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by the Owner.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

Each Proposal must be accompanied by a bid deposit in the form of a certified check, cashier's check or bid bond, executed by the bidder and Surety Company, payable to the City of Berkley in the amount of Five Percent (5%) of the amount of the Proposal. See Instructions to Bidders – Bid Deposit for more information.

Proposals shall include the following completed forms per The City of Berkley, located on the web at:
https://www.berklevmich.org/bid_posting/index.php

- 1. Conflict of Interest Disclosure Form**
- 2. Contractor/Vendor References**
- 3. Hold Harmless and Indemnity Form**
- 4. Iran Business Relationship Affidavit (Pursuant to P.A. 517 of 2012)**
- 5. Non-Collusive Affidavit**
- 6. Non-Discrimination Affidavit**

TAXES

The Bidder affirms that all applicable Federal, State and Local taxes of whatever character and description are included in all prices stated in this Form of Proposal.

ADDENDA

The Bidder acknowledges the following Addenda, covering revisions to the drawings or specifications and the cost, if any, of such revision has been included in the quoted proposal:

Addendum No. _____	1	Dated _____	3/23/23
Addendum No. _____		Dated _____	
Addendum No. _____		Dated _____	
Addendum No. _____		Dated _____	

FEES

The Bidder shall refer to the General Conditions for allowable Fees for additional work performed, upon Owner's written authorization, by Bidder's own forces and/or for additional work, upon Owner's written authorization, by Bidder's subcontractors.

TIME OF COMPLETION

If awarded the Contract for the Wiltshire Road Water Main Replacement and Pavement Reconstruction project we agree to have all work substantially completed by **Wednesday, November 1, 2023**. Substantial Completion is defined that the facility is ready to use for its intended purpose with all utility systems fully functional. Final completion of the project, including all punch list items, clean-up and restoration must be by **Friday, December 1, 2023**.

The Bidder hereby agrees to furnish the required Bonds, Insurance Certificates, and Policies within ten (10) days after acceptance of this Proposal.

The execution of all work and specific constraints as described in the contract drawings and specifications herein, must be strictly adhered to.

LIQUIDATED DAMAGES

Time is of the essence for completion of this project in order to have the Project ready for the City of Berkley. The Bidder guarantees that the work will be completed within the time limit stated herein before or within the time as extended as provided elsewhere in the Specifications. Inasmuch as the damage and loss to the Owner which will result from the failure of the Bidder to complete the work within the stipulated time, will be most difficult or impossible to accurately determine, it is mutually agreed that the damages to the Owner for such delay and failure on the part of the Bidder shall be liquidated in the amount of Five Hundred Dollars (\$500.00), for each and every calendar day by which the Bidder shall fail to complete the work or any part thereof within the provisions hereof, and such liquidated damages shall not be considered as a penalty.

The Owner will deduct and retain out of any money due or to become due hereunder the amount of the liquidated damages, and in case those amounts are less than the amount of actual liquidated damages, the Bidder shall pay the difference upon demand of the Owner.

We understand that liquidated damages may be assessed should we fail to meet the stipulated completion dates. Specifically, liquidated damages will be assessed daily beginning **Saturday, December 2, 2023**, until such a time that Substantial Completion is achieved and further if all work is not completed by the Final Completion Date.

QUALIFICATIONS/MUNICIPAL PROJECTS/REFERENCES

The City of Berkley requires the Bidder, as the Prime Contractor, to include **three (3) municipal references** for projects similar to the Wiltshire Road Water Main and Pavement Reconstruction Project, as follows. The references will be checked prior to the award of the contract.

Project No. 1: Name of Project: _____

Project Completion Date: _____ Contract Amount: _____

Name: _____ Address: _____

Telephone: _____ Firm: _____

Project No. 2: Name of Project: _____

Project Completion Date: _____ Contract Amount: _____

Name: _____ Address: _____

Telephone: _____ Firm: _____

Project No. 3: Name of Project: _____

Project Completion Date: _____ Contract Amount: _____

Name: _____ Address: _____

Telephone: _____ Firm: _____

BIDS TO REMAIN FIRM

The price stated in this Proposal shall be guaranteed for a period of not less than 60 days from the bid due date and if authorized to proceed within that period, the bidder agrees to complete the work covered by the Proposal at said price.

If this Proposal is accepted by the Owner and the undersigned shall fail to contract as aforesaid and to furnish the required surety bonds within fifteen (15) days after being notified of the acceptance of their bid, then the undersigned shall be considered to have abandoned the contract, and the Certified Check, Cashier's Check or Bid Bond accompanying this Proposal shall be forfeited to the City of Berkley.

If the undersigned enters into the contract in accordance with their proposal, or if their proposal is not accepted, then the accompanying bid guarantee shall be returned to the undersigned.

Company Name: _____

Signature: _____ Title: _____

Address: _____

County: _____ State: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

LEGAL STATUS OF BIDDER

This Bid is submittal in the name of:

(Print) _____

The undersigned hereby designates below the business address to which all notices, directions or other communications may be served or mailed:

Street _____

City _____

State _____ Zip Code _____

The undersigned hereby declares the legal status checked below:

- ☐ INDIVIDUAL
- ☐ INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME
- ☐ CO-PARTNERSHIP
The Assumed Name of the Co-Partnership is registered in the County of _____, Michigan
- ☐ CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____
_____. The Corporation is
- ☐ LICENSED TO DO BUSINESS IN MICHIGAN
- ☐ NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

The name, titles, and home addresses of all persons who are officers or partners in the organization are as follows:

A corporation duly organized and doing business under the laws of the State of _____

NAME AND TITLE

HOME ADDRESS

Signed and Sealed this _____ day of _____, 20__.

By (Signature)

Printed Name of Signer

Title

BID BOND

We, the undersigned, _____

As Principal, hereinafter called the Principal, and _____

A corporation duly organized under the laws of the State of _____

As surety, hereinafter called the SURETY, are held and firmly bound unto:

The Owner: _____

in the sum of _____ Dollars (\$ _____),

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 _____

NOW, THEREFORE, if the OWNER shall accept the bid of the Principal and the Principal shall enter into a contract with the OWNER in accordance with the terms of such bid, and give such bond or bonds as may be specified in the 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 OWNER the difference not to exceed the penalty hereof 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 the obligation of the Principal shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 20____

(Witness)

(Principal)

(Seal)

(Title)

(Witness)

(Surety)

(Title)

END OF SECTION

SECTION 01220

BID ITEM DESCRIPTION

PART 1 GENERAL

1.1 SCOPE

- A. This Section describes the method of measurement and basis of payment for the items of Work included in the Contract and specified in the Proposal.
1. The Contractor shall provide labor, materials, tools, equipment, and services required to complete the Work specified herein and indicated on the Drawings.
 2. Contractor shall include any other items necessary to complete the job, whether specifically mentioned or implied.
 3. Payment will only be made for the items listed in the Proposal Bid Form, Section 00300.
 4. Payment for the unit price items will be based on actual quantities as verified by the Engineer.
- B. The Owner will make no allowances for items not included in the Proposal Bid Form.

1.2 ITEMS OF THE PROPOSAL

DIVISION I – WILTSHIRE RD (WOODWARD TO MORTENSON)

1 - Mobilization Division I (Max 5%)

This bid item shall be paid for at the Contract Unit Price per **lump sum** basis. The Work required by this item shall include, but not be limited to, the preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of the Contractor's offices, buildings, 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 pre-construction costs, 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. The Work shall include all demobilizations and remobilizations which are required due to seasonal suspension of the Work. This contract pay item also includes all other items and costs not included in the price bid for specific items such as overhead, insurance, bond costs (i.e. performance, labor and material, and maintenance and guarantee), permits, safety program, coordination with others, and the like. All cost to the Contractors for full compliance with all requirements of the General Conditions sections shall also be included in this pay item.

The Contract Unit Price for Mobilization **shall not exceed five (5) percent** of the Total Amount of Division I Bid minus the amount for this pay item. Payment for this item will be based upon the following Partial Payment schedule:

Percentage of Original Contract Amount Earned	Percentage of Bid Price for Mobilization Allowed
5	50%
10	75%
25	100%

Additional unit prices will not be paid for the Contractor to remobilize to the site regardless of the staging or sequence of construction preferred by the Contractor. The initial payment for the project shall not be made until construction has been started and a schedule of values (if required) for the project has been approved. The total sum of all payments for this item shall not exceed the original contract amount bid for MOBILIZATION, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project, moved equipment away from the project and then back again, or for additional quantities or items of work added to the contract.

2 - Erosion Control, Inlet Protection, Fabric Drop

This bid item shall be paid for at the Contract Unit Price per **each** fabric drop furnished, installed, maintained, and removed. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Drawings. Oakland County Water Resources Commissioner (OCWRC) may have additional requirements. The work covered by this item shall include installation of required Soil Erosion and Sedimentation Control (SESC) devices. The Contractor's responsibilities include installation and maintenance of specified SESC devices for the duration of the construction. Upon completion of the Project, it will be the Contractor's responsibility to remove and properly dispose of SESC devices.

3 - Tree Protection Fence

This bid item shall be paid for at the Contract Unit Price per **lineal foot** based on the installed lengths of tree protection fence as measured in place. Item also includes any required maintenance, repairs, removals and/or re-installations of the fencing throughout the project. Measurement and payment and the Work required by this item shall be completed in accordance with the Drawings and Section 01001-Supplemental Project Notes, Item 32 – Tree Protection.

4 - Exploratory Excavation & Utility Location

This bid item shall be paid for at the Contract Unit Price per **lump sum** basis. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with the Special Provision for Exploratory Excavation & Utility Locating.

5 - Traffic Maintenance, Incl. Flag Control, Division 1

This bid item shall be paid for at the Contract Unit Price per **lump sum** basis. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with the Section 02550, the Special Provision for Maintaining Traffic, the traffic control

detail sheets, and the Michigan Manual of Uniform Traffic Control Devices. Maintaining Traffic shall include the installation, relocation, covering, supplementing, and removing the proposed traffic control measures including all signage, barricades, and other traffic control devices as required per the MDOT standard plans for the applicable closures necessary to safely perform the Work. This item is to cover the cost of maintaining traffic during the progression of the project per the Construction Drawings and the approved Contractor's Sequence of Operation for Division 1, Woodward to Mortenson. Flag control as required by the construction activity throughout the project is also included in this bid item.

6 - Barricade, Type III, High Intensity, Furn, Special

This bid item shall be paid for at the Contract Unit Price per **each** Barricade of the specified size and type furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

7 - Barricade, Type III, High Intensity, Oper, Special

This bid item shall be paid for at the Contract Unit Price per **each** barricade of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

8 - Plastic Drum, Fluorescent, Furn

This bid item shall be paid for at the Contract Unit Price per **each** plastic drum of the specified size and type, furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

9 - Plastic Drum, Fluorescent, Oper

This bid item shall be paid for at the Contract Unit Price per **each** plastic drum of the specified size and type, operated and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

10 - Channelizing Device, 42 inch, Furn

This bid item shall be paid for at the Contract Unit Price per **each** channelizing device of the specified size and type, furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

11 - Channelizing Device, 42 inch, Oper

This bid item shall be paid for at the Contract Unit Price per **each** channelizing device of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

12 - Sign, Type B, Temp, Prismatic, Furn

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified size and type, furnished and installed at the project site in the locations specified on the Drawings. Work

required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

13 - Sign, Type B, Temp, Prismatic, Oper

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

14 - Sign, Type B, Temp, Prismatic, Furn, Special

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified size and type, furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

15 - Sign, Type B, Temp, Prismatic, Oper, Special

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

16 - Sign Cover

This bid item shall be paid for at the Contract Unit Price per **each** sign cover installed and removed from the project as required for construction sequencing. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

17 - Lighted Arrow, Type C, Furn

This bid item shall be paid for at the Contract Unit Price per **each** lighted arrow of the specified size and type, furnished, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

18 - Lighted Arrow, Type C, Oper

This bid item shall be paid for at the Contract Unit Price per **each** lighted arrow of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

19 - Color Audio-Video Route Survey

This bid item shall be paid for at the Contract Unit Price per **lump sum** basis per construction zone of influence. The Work required by this item shall be completed in accordance with the Section 0231 – Color Audio-Video Route Survey. For the purposes of this Contract the entire project area shall be considered one (1) construction zone of influence.

20 - Dust Palliative, Applied

This bid item shall be paid for at the Contract Unit Price per **ton** of calcium chloride applied based on the concentration of solids or solution delivered, as indicated on the delivery report, or as determined by testing. This item shall be used as necessary at the request of the Owner or Engineer.

21 - Pavt, Rem, MOD

This bid item shall be paid for at the Contract Unit Price per **square yard** based on the measured area of material removed. The Work required by this item includes full depth sawcutting of material to be removed, any breaking and crushing of the material to aide in removal, and removal and proper disposal of material. All pavement removal shall be done to an existing joint or to a pre-marked saw-cut. Any sawed joint which is not clean and straight will be rejected by the Owner and additional pavement shall be removed and replaced at the Contractor's expense. The cost for all sawcuts shall be included in the unit prices for pavement removal.

Material included in this bid item includes concrete roadway, both reinforced and non-reinforced, curb and gutter, both separate and integral, and HMA surfaces including overlays. There is no separate bid item for HMA Surface, Rem.

22 - Driveway, Rem

This bid item shall be paid for at the Contract Unit Price per **square yard** based on the measured area of driveway material removed. Measurement and payment and the Work required for this item includes full depth saw cutting of material to be removed, any breaking and crushing of the material to aide in removal, and removal of proper disposal of material. The Work also shall be completed in accordance with the Drawings.

23 - Sidewalk, Rem

This bid item shall be paid for at the Contract Unit Price per **square yard** based on the measured area of sidewalk material removed. Measurement and payment and the Work required for this item includes full depth saw cutting of material to be removed, any breaking and crushing of the material to aide in removal, and removal of proper disposal of material. The Work also shall be completed in accordance with Section 204 of the 2020 MDOT Standard Specifications for Construction, except that it includes sidewalk of any thickness, including sidewalk ramps and detectable warning surfaces.

24 - Dr Structure, Rem

This bid item shall be paid for at the Contract Unit Price per **each** drainage structure, of specified size and material, as indicated on the Drawings, removed. The Work required by this item includes equipment, labor and material required to remove and dispose the structure, including the frame and cover. The Work required for this item shall be completed in accordance with the 2020 MDOT Standard Specifications for Construction.

25 - Dr Structure Rem, MOD

This bid item shall be paid for at the Contract Unit Price per **each** drainage structure, of specified size and material, as indicated on the Drawings, removed. The Work required by this item includes

equipment, labor and material required to remove and dispose the structure, including the frame and cover and all pipe and fittings required to reconnect existing sewer pipe. The Work required for this item shall be completed in accordance with the 2020 MDOT Standard Specifications for Construction.

26 - Storm Sewer, Rem

This bid item shall be paid for at the Contract Unit Price per **linear foot** of existing sewer of the specified type, diameter and material, to be removed to the limits shown on the Drawings. The Work required for this item shall be completed in accordance with Section 203 of the 2020 MDOT Standard Specifications for Construction.

27 - Tree, Rem, Less than 19-inch (if needed)

This bid item shall be paid for at the Contract Unit Price per **each** tree in the specified diameter range to be removed and disposed of, including the stump. The Work required for this item shall be completed in accordance with the 2020 MDOT Standard Specifications for Construction and the Drawings.

28 - Tree, Rem, 19-inch to 36-inch (if needed)

This bid item shall be paid for at the Contract Unit Price per **each** tree in the specified diameter range to be removed and disposed of, including the stump. The Work required for this item shall be completed in accordance with the 2020 MDOT Standard Specifications for Construction and the Drawings.

29 - Station Grading, MOD

This bid item shall be paid for at the Contract Unit Price per **Station** as measured in one-hundred-foot (100') segments (stations) along the centerline of the proposed work. This bid item shall include all work required to excavate and prepare the subgrade and to construct the earth embankments to grades shown on the Contract Documents, or as directed by the Owner, within the 60-foot Wiltshire Rd. Right-of-Way. Minor grade changes required to meet existing conditions either higher or lower will not be a basis for an adjustment to the Contract. This item shall include any and all earth work necessary to complete the proposed project in accordance with the Special Provision for Station Grading, MOD and the Contract Documents. Minor intersections and driveways will not be measured separately, but will be included in the mainline stations.

30 - Subgrade Undercutting, Type 1, MOD

This bid item shall be paid for at the Contract Unit Price per **Cubic Yard**. This item shall be used as needed, at the discretion of and only after approval by the Owner's Field Representative. Limits of subgrade undercut are to be determined by the Engineer by proof-roll, testing the grade promptly after subgrade elevation has been reached. This work shall include excavation and placement of 1"x3' aggregate material over geogrid as shown on the Drawings and shall be completed in accordance with Special Provision for Subgrade Undercutting, Type 1, MOD.

31 - Maintenance Gravel, Special

This bid item shall be paid for at the Contract Unit Price per **ton**. Installation of Maintenance Gravel shall be at the discretion of and only after approval by Owner's field representative. The Work required for this item shall be completed in accordance with Section 306 of the 2020 MDOT Standard

Specifications for Construction. The purpose of this item is to help maintain traffic and access for residents.

32 - Hand Patching, HMA

This bid item shall be paid for at the Contract Unit Price per **Ton** of material placed, and as supported by the weight tickets supplied by the Contractor. This item shall include all work, materials, labor, and equipment necessary to furnish and install temporary HMA patching required to maintain sidewalk accessibility to residents during the construction phases. The Contractor shall use an Owner-approved HMA top course material for hand patching material.

33 - Aggregate Base, MDOT 21AA, 8.5-inch

This bid item shall be paid for at the Contract Unit Price per **Ton** of MDOT 21AA delivered to the site, placed, and compacted as specified. The work included and required by this item is described on and shall be completed in accordance with the Drawings.

34 - Aggregate Base, 1"x3", 8-inch

This bid item shall be paid for at the Contract Unit Price per **Ton** of 1"x3" aggregate material delivered to the site, placed, and compacted as specified. The work included and required by this item is described on and shall be completed in accordance with the Drawings.

35 - Tensar TX150L Triaxial Geogrid

This bid item shall be paid for at the Contract Unit Price per Square Yard of subbase covered with the specified triaxial geogrid. No allowance shall be made for overlap, splices or material cut off or wasted. This item of work shall include labor, equipment, and materials necessary for the installation of this item as detailed and specified in the Special Provision for Geogrid and on the Drawings.

36 - Void Reducing Asphalt Membrane (Spray, J-Band Type)

This bid item shall be paid for at the Contract Unit Price per **linear foot** of void reducing asphalt membrane spray of the specified type, applied. Payment for this work includes all costs associated with furnishing and installing the materials necessary to complete this item of work. This item is to be used if half-width paving is performed, this item is not required if the road is paved at full width. Item shall be completed in accordance with the Special Provision for Void Reducing Asphalt Membrane, Spray (J-Band Type).

37 - 2-inch MDOT 5EML, MOD Mix (Wearing)

This bid item shall be paid for at the Contract Unit Price per **Ton** of material placed. This item shall include all work, materials, labor, and equipment necessary to furnish and install Hot Mix Asphalt (HMA) of the specified mix, on a prepared base to the line, grade, thickness, and cross-section in accordance with these specifications and drawings. Item also includes required bond coat. Work required for this item shall be completed in accordance with Section 02511 and the 2020 MDOT Standard Specifications for Construction.

38 - 2.5-inch MDOT 4EML, MOD Mix (Leveling/Base)

This bid item shall be paid for at the Contract Unit Price per **Ton** of material placed. This item shall include all work, materials, labor, and equipment necessary to furnish and install Hot Mix Asphalt (HMA) of the specified mix, on a prepared base to the line, grade, thickness, and cross-section in accordance with these specifications and drawings. Item also includes required bond coat. Work required for this item shall be completed in accordance with Section 02511 and the 2020 MDOT Standard Specifications for Construction.

39 - Concrete Pavement w/ Integral Curb & Gutter, 8-inch (Incl. agg base)

This bid item shall be paid for at the Contract Unit Price per **square yard** of concrete installed to the specified thickness, as measured in place. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02520, Special Provision for ASR in Concrete, and as detailed on the Drawings for the Webster Road restoration. The Work shall include excavation necessary to accommodate the specified cross-section with a 8-inch-thick aggregate base, preparation of the subgrade, installation and compaction of the aggregate base material, and installation of a new concrete to the specified thickness and dimensions. Item also includes integral curb to match existing conditions, placement of epoxy coated dowel bars of specified size, finishing, and saw cutting of jointing.

40 - Driveway, Nonreinf Conc, 6-inch (Incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square yard** of concrete driveway installed to the specified thickness, as measured in place. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02520, Special Provision for ASR in Concrete, and as detailed on the Drawings. The Work shall include excavation necessary to accommodate the specified cross-section with a 4-inch-thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete driveway to the specified thickness and dimensions.

41 - Curb, Conc, MDOT Det F4

This bid item shall be paid for at the Contract Unit Price per **lineal foot** of concrete curb and gutter installed, as measured in place. The Work required for this item shall be completed in accordance with the Section 02530, Special Provision for ASR in Concrete and the 2020 MDOT Standard Specifications for Construction.

42 - Sidewalk, Conc, 4-inch, Special (Incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square foot** of concrete sidewalk installed to the specified thickness, as measured in place. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02840, Special Provision for ASR in Concrete, and as detailed on the Drawings. The Work shall include excavation necessary to accommodate the specified sidewalk cross-section with a 4-inch-thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete sidewalk to the specified thickness and dimension.

43 - Sidewalk, Conc, 6-inch, Special (Incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square foot** of concrete sidewalk installed to the specified thickness, as measured in place. This item shall be used to complete restoration of areas disturbed by construction. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02840, Special Provision for ASR in Concrete, and as detailed on the Drawings. The Work shall include excavation necessary to accommodate the specified sidewalk cross-section with a 4-inch-thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete sidewalk to the specified thickness and dimension.

44 - Sidewalk Ramp, Conc, 6-inch, Special (Incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square foot** of concrete sidewalk ramp, landings, monolithic rolled curbs or side flares and curb and gutter openings, installed and measured in place. This item shall be used to complete restoration of areas disturbed by construction. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02840, Special Provision for ASR in Concrete, and the Drawings. The Work shall include excavation necessary to accommodate the 6-inch sidewalk ramp cross-section with a 4-inch thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete sidewalk ramp to the specified thickness and dimension. New sidewalk ramps and landings shall meet all applicable Americans with Disabilities Act requirements which shall be confirmed by the installing contractor. Furnishment and installation of the required detectable warning surface shall be paid for separately.

45 - Detectable Warning Surface (5-foot x 2-foot)

This bid item shall be paid for at the Contract Unit Price per **each** for furnishment and installation of the required detectable warning surface, of specified length, in new sidewalk ramps and landings to meet all applicable Americans with Disabilities Act requirements, which shall be confirmed by the installing contractor. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 0284 and the Drawings. Installation of the concrete sidewalks and sidewalk ramps shall be paid for separately.

46 - Underdrain, Subgrade, 6-inch, Special

This bid item shall be paid for at the Contract Unit Price per **Lineal Foot** of underdrain installed. The Work required by this item includes all labor, equipment, and materials to install the underdrain, including excavation and delivery and installation of the Mirafi 180N Geotextile and MDOT 34G Aggregate, including fittings, tees, connections, structure taps and outlets. Work associated with this item shall be in accordance with the Special Provision for Underdrain, Subgrade, 6-inch, Special and the Drawings.

47 - 12-inch C76 CL-IV Sewer, Tr. Det "B"

This bid item shall be paid for at the Contract Unit Price per **Lineal Foot** of sewer pipe of the specified class, material, diameter, and trench detail to be furnished and installed. Item includes excavation, shoring and bracing, dewatering, bedding, pipe joints, backfill, compaction, labor, and equipment necessary to complete the construction of pipe as described in the contract documents. Measurement

and payment and the Work required for this item shall be completed in accordance with Section 02730, OCWRC Standard Details and the Contract Drawings.

48 - 4-foot Dia. Manhole

This bid item shall be paid for at the Contract Unit Price per **Each** structure of the specified class, material, diameter to be furnished and installed. Item includes excavation, shoring and bracing, dewatering, bedding, fabric, backfill, compaction, precast or block riser sections to meet existing or final grade (dependent on construction phase), miscellaneous materials, labor, and equipment necessary to complete the installation of the storm structure as described in the contract documents. Measurement and payment and the Work required for this item shall be completed in accordance with the Drawings and the specifications of OCWRC.

49 - 4- Foot Diameter Catch Basin

This bid item shall be paid for at the Contract Unit Price per **Each** structure of the specified class, material, diameter to be furnished and installed. Item includes excavation, shoring and bracing, dewatering, bedding, fabric, backfill, compaction, precast or block riser sections to meet existing or final grade (dependent on construction phase), miscellaneous materials, labor, and equipment necessary to complete the installation of the storm structure as described in the contract documents. Measurement and payment and the Work required for this item shall be completed in accordance with the Drawings and the specifications of OCWRC.

50 - 2-foot Dia. Catch Basin

This bid item shall be paid for at the Contract Unit Price per **Each** catch basin of the specified class, material, diameter to be furnished and installed. Item includes excavation, shoring and bracing, dewatering, bedding, fabric, backfill, compaction, precast or block riser sections to meet existing or final grade (dependent on construction phase), miscellaneous materials, labor, and equipment necessary to complete the installation of the storm structure as described in the contract documents. Measurement and payment and the Work required for this item shall be completed in accordance with the Drawings and the specifications of OCWRC.

51 - Drainage Structure Tap, 12-inch

This bid item shall be paid for at the Contract Unit Price per **each** structure type of specified diameter, cored in the field. The work required for this item shall be completed in accordance with WRC Sanitary Sewer Notes and the Drawings.

52 - Dr Structure Frame & Cover, EJ 1040

This bid item shall be paid for at the Contract Unit Price per **each** drainage structure cover of the indicated type, furnished and installed. Work included and required by this item are described and shall be completed in accordance with Section 02660, the project details, and the Special Provision for Drainage Structure Covers. Item also includes initial adjustment of structure casting to current or proposed grade as required by project phasing.

53 - Dr Structure Frame & Cover, EJ 5000

This bid item shall be paid for at the Contract Unit Price per **each** drainage structure cover of the indicated type, furnished and installed. Work included and required by this item are described and shall be completed in accordance with Section 02660, the project details, and the Special Provision for Drainage Structure Covers. Item also includes initial adjustment of structure casting to current or proposed grade as required by project phasing.

54 - Dr Structure Cover, Adjust

This bid item shall be paid for at the Contract Unit Price per **each** utility structure adjusted, regardless of location of the structure. Payment shall be in full for the complete and final adjustment of each utility structure; intermediate adjustments will not be paid for separately. The Work required by this item shall be in accordance with OCWRC Details and includes all necessary excavation; removal and salvage of existing frame and cover (where necessary); removal of any loose chimney materials, installation of supplemental materials to rebuild the structure chimney, mortar coat around exterior of chimney, waterproofing of chimney, backfilling; sand and gravel backfill; disposal of surplus excavated material; and all other work incidental to the adjustment of the utility structure. Item also includes adjusting newly installed drainage structures from existing grades to final proposed grades as a result of the project phasing.

55 - Water Structure Cover, Adjust

This bid item shall be paid for at the Contract Unit Price per **each** utility structure adjusted, regardless of location of the structure. Payment shall be in full for the complete and final adjustment of each utility structure; intermediate adjustments will not be paid for separately. The Work required by this item shall be in accordance with OCWRC Details and includes all necessary excavation; removal and salvage of existing frame and cover (where necessary); removal of any loose chimney materials, installation of supplemental materials to rebuild the structure chimney, mortar coat around exterior of chimney, waterproofing of chimney, backfilling; sand and gravel backfill; disposal of surplus excavated material; and all other work incidental to the adjustment of the utility structure. Item also includes adjusting newly installed utility structures from existing grades to final proposed grades as a result of the project phasing.

56 - Sanitary Sewer Lead Repair (if needed)

This bid item shall be paid for at the Contract Unit Price per **each** sanitary sewer lead of the specified material and size lead repaired. This item is considered an as needed item and **excludes** any sanitary leads damaged by the Contractors activity. The work required and included in this item shall be in accordance with Section 02730 and the Drawings.

57 - Hydrant Assembly, Rem

This bid item shall be paid for at the Contract Unit Price per **each** fire hydrant assembly, including the companion valve, box, and piping, removed. The Work required by this item includes all labor, material and equipment required to complete the removal and disposal of the fire hydrant, piping and companion valve and valve box as initiated on the Drawings.

58 - Gate Valve and Well, Rem

This bid item shall be paid for at the Contract Unit Price per **each** valve and gate well structure, of specified size as indicated on the Drawings, removed. The Work required by this item includes removal and disposal of the gate well structure, the gate valve, and structure frame and cover. Where specified on the Drawings, the structure frame and cover shall be salvaged and returned to the City DPW yard. This item shall include the removal of the gate well structure, internal valves, tapping sleeves and piping necessary for the complete removal of the gate well structure and structure frame and cover.

59 - Water Main, 6-inch, Rem

This bid item shall be paid for at the Contract Unit Price per **lineal foot** of water main of the specified material and diameter removed. Item includes labor, and equipment necessary to complete the removal of pipe as described in the contract documents. Measurement and payment and the Work required for this item shall be completed in accordance with Section 02660, 02661 and the Contract Drawings.

60 - Water Main, 12-inch, Rem

This bid item shall be paid for at the Contract Unit Price per **lineal foot** of water main of the specified material and diameter removed. Item includes labor, and equipment necessary to complete the removal of pipe as described in the contract documents. Measurement and payment and the Work required for this item shall be completed in accordance with Section 02660, 02661 and the Contract Drawings.

61 - Abandon 6-inch Water Main in Place & Grout

This bid item shall be paid for at the Contract Unit Price per **Lineal Foot (Lft)** of existing 6" dia. water main that shall be grout filled and abandoned in-place. The Work required by this item includes all labor, equipment, and materials to fully fill the existing 6" dia. water main with grout. Limits of abandonment are to be as indicated on the construction drawings, unless otherwise specified by the Engineer or City. Flowable fill and grout materials shall comply with requirements set forth in Section 02200. Inclusive of the backfilling of pipes and structures for in-place abandonment as shown in the construction drawings, all cavities shall be completely filled.

62 - Abandon 12-inch Water Main in Place & Grout

This bid item shall be paid for at the Contract Unit Price per **Lineal Foot (Lft)** of existing 12" dia. water main that shall be grout filled and abandoned in-place. The Work required by this item includes all labor, equipment, and materials to fully fill the existing 12" dia. water main with grout. Limits of abandonment are to be as indicated on the construction drawings, unless otherwise specified by the Engineer or City. Flowable fill and grout materials shall comply with requirements set forth in Section 02200. Inclusive of the backfilling of pipes and structures for in-place abandonment as shown in the construction drawings, all cavities shall be completely filled.

63 - Water Main, 6-inch, Cut and Plug

This bid item shall be paid for at the Contract Unit Price per each water main of the specified size and material, cut and plugged. The work required by this item includes all labor, equipment, and materials for cutting the existing water main, providing, and placing the required plug, and any miscellaneous

fittings and thrust blocks necessary. This bid item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

64 - Water Main, 12-inch, Cut and Plug

This bid item shall be paid for at the Contract Unit Price per each water main of the specified size and material, cut and plugged. The work required by this item includes all labor, equipment, and materials for cutting the existing water main, providing, and placing the required plug, and any miscellaneous fittings and thrust blocks necessary. This bid item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

65 - Water Main Break Repair (12-inch & Less) (if needed)

This bid item shall be paid for at the Contract Unit Price per **each** water main break repaired. This item is considered as needed and requires approval from the Owner and/or Engineer prior to commencing repair. This item shall include all work required to repair the water main break of the specified size and material resulting from isolation and/or pressurizing existing City water mains. Work required for this item shall be in accordance with Section 02660 and coordinated through the City of Berkley DPW.

66 - Water Main, 8-inch Dia., CL 54 DI, Open Cut

This bid item shall be paid for at the Contract Unit Price per **Lineal Foot** of ductile iron water main of the specified diameter installed. Item includes excavation, shoring and bracing, dewatering, bedding, pipe joints, miscellaneous fittings, tracer wire and appurtenances, polyethylene wrap, thrust blocks, backfill, compaction, disinfection, pressure testing, labor, and equipment necessary to complete the construction of pipe as described in the contract documents. Measurement and payment and the Work required for this item shall be completed in accordance with Section 02660, 02661 and the Contract Drawings.

67 - Water Main Connection, 6-inch

This bid item shall be paid for at the Contract Unit Price per **each** connection of a new water main of the size indicated, to an existing water main, of the size indicated, installed and completed including any required excavation, thrust blocks, fittings, testing, backfill, compaction, labor and equipment necessary to complete the construction as described in the contract documents. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Section 02660.

68 - Water Main Connection, 8-inch

This bid item shall be paid for at the Contract Unit Price per **each** connection of a new water main of the size indicated, to an existing water main, of the size indicated, installed and completed including any required excavation, thrust blocks, fittings, testing, backfill, compaction, labor and equipment necessary to complete the construction as described in the contract documents. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Section 02660.

69 - Water Main Connection, 12-inch

This bid item shall be paid for at the Contract Unit Price per **each** connection of a new water main of the size indicated, to an existing water main, of the size indicated, installed and completed including any required excavation, thrust blocks, fittings, testing, backfill, compaction, labor and equipment necessary to complete the construction as described in the contract documents. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Section 02660.

70 - Gate Valve & Well, 8-inch

This bid item shall be paid for at the Contract Unit Price per **each** gate valve and well of the indicated and specified size installed and completed. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Section 02660 and the project details.

71 - Water Structure Cover, EJIW No. 1040

This bid item shall be paid for at the Contract Unit Price per **each** water structure cover of the indicated type, furnished and installed. Work included and required by this item are described and shall be completed in accordance with Section 02660, the project details and the Special Provision for Drainage Structure Covers.

72 - Short Water Service Lead to New Main, Polyethylene, 1-inch, Open Cut

This bid item shall be paid for at the Contract Unit Price per **each** new water service material, of the size indicated, installed via open cut. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Section 02660 and the project details. Item also includes installation of new curb box, curb stop valve, fittings, tracer wire and appurtenances required for connection to existing water service. Removal of the existing water service line, curb stop valve, fittings and curb box is considered incidental as part of this item.

73 - Long Water Service Lead to New Main, Polyethylene, 1-inch, Directional Drill

This bid item shall be paid for at the Contract Unit Price per **each** new water service material, of the size indicated, installed via directional drill. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Section 02660 and the project details. Item also includes installation of new curb box, curb stop valve, fittings, tracer wire and appurtenances required for connection to existing water service. Removal of the existing water service line, curb stop valve, fittings and curb box is considered incidental as part of this item.

74 - Lead Line Water Service Replacement (Private) (if needed)

This bid item shall be paid for at the Contract Unit Price per **each** new water service, of the size indicated, installed from the stop box to the meter, including all ancillary work to complete the existing lead service line replacement as described in the specifications. Item also includes removal and proper disposal of existing lead service line. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Section 02661 and the project details.

75 - Water Service Stop Box

This bid item shall be paid for at the Contract Unit Price per **Each** water service stop box of the specified material and size to be furnished and installed in accordance with the Drawings. Work included and required by this item shall be completed in accordance with Section 02660 and the Drawings.

76 - Hydrant Assembly, 5BR250 Model

This bid item shall be paid for at the Contract Unit Price per **Each** fire hydrant assembly installed and completed, including the 6-inch tee, valve and valve box. Item includes excavation, shoring and bracing, dewatering, bedding, pipe joints, miscellaneous fittings, polyethylene wrap, thrust block, backfill, compaction, disinfection, pressure testing, labor, and equipment necessary to complete the construction of pipe as described in the contract documents. The work included and required by this item are described and shall be completed in accordance with Section 02660 and the Drawings.

77 - 4-inch Topsoil

This bid item shall be paid for at the Contract Unit Price per **square yard** of topsoil installed of the specified depth. Work included and required by this item shall be completed in accordance with the Section 02930.

78 - Sodding (Incl. 14-day watering)

All disturbed areas are to be restored equal to what existed prior to water main installation. Restoration of grass/lawn areas shall be restored with sod and is to conform to the Specifications as set forth in Sections 01001, 02930 and 02970. Unless otherwise specified herein, the Contractor shall keep all restored lawn areas watered for a minimum of 14 days at his expense.

The contractor shall make his own determination as to the actual limits of required area removals that does not impact further removals or exceeds the limits of the right-of-way or easement lines. Should additional removal and replacement be required either to construct the project or due to the contractor's interpretation of what is required to construct the project and comply with all local, state and federal laws, or if construction damage is beyond the limits originally anticipated, the contractor shall be solely responsible for all costs associated with the removals and restoration of all disturbed areas to a condition equal to or better than what existed prior to construction. Electrical power lines for ground mounted signs shall not have any underground splices.

As part of the project, all disturbed areas shall be restored upon completion of the work to equal or better condition. This Contract is set-up to afford as much flexibility to the Contractor to conduct his operations in an efficient manner. As such, unless specifically noted on the plans, the location of the bore pits or other excavations that will be needed to complete the work are to be determined by the Contractor.

All costs for restoration of disturbed areas within the limits of the entire project as a result of the Contractor's operations, including all excavations for access pits, utility and service lead "pot holes" or other open cut water main installations, as well as staging and stockpiling are to be included in the **square yard (syd)** price bid for "Sodding (Incl. 14-day watering)." The Contractor is responsible for the restoration and/or repair of any and all areas caused as a result of his operations.

79 - Seed & Mulch Blanket (Incl. 14-day watering)

This bid item shall be paid for at the Contract Unit Price per **square yard** of seed and mulch blanket as measured in place. This item is considered an as needed item as part of the Contract. Work included and required by this item shall be in accordance with Section 02958. Item also includes 14-day watering upon date of installation.

80 - Sign, Type III, Erect, Salv

This bid item shall be paid for at the Contract Unit Price per **each** salvaged sign, installed of the type required, includes the cost of storing signs after removal, loading, transporting, unloading, erecting the salvaged sign on a new, existing, or salvaged steel post system, as shown on the Drawings. Work also includes attaching devices, brackets, and all associated hardware. New sign supports are paid for separately under "Steel Post System". Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

81 - Sign, Type III, Rem

This bid item shall be paid for at the Contract Unit Price per **each** sign of the specified size and type, removed. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

82 - Sign, Type IIIA

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified type, fabricated, and attached to steel post system in the locations as detailed on the Drawings. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

83 - Sign, Type IIIB

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified type, fabricated, and attached to steel post system in the locations as detailed on the Drawings. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

84 - Sign, Type VB

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified type, fabricated, and attached to steel post system in the locations as detailed on the Drawings. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

85 - Reflective Panel for Permanent Sign Support, 6 Foot

This bid item shall be paid for at the Contract Unit Price per **each** reflected panel of the specified size and type, installed. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

86 - Sign, Type III, Rem, Salv

This bid item shall be paid for at the Contract Unit Price per **each** sign of the specified size and type, removed and salvaged.. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

87 - Ground Mtd Sign Support, Rem

This bid item shall be paid for at the Contract Unit Price per **each** support of the specified size and type, removed and properly disposed of. This Work shall include any removal of excavated materials and properly disposed of. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

88 - Steel Post System

This bid item shall be paid for at the Contract Unit Price per **each** steel post system of the specified type, furnished and installed in locations shown on the Drawings. See sheet CD-4 for material specifications and manufacturer for steel post system, which includes signpost anchor, signpost, and all associated hardware and material to install into the ground. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

89 - Pavt Mrkg, Ovly Cold Plastic, 24 inch Stop Bar

This bid item shall be paid for at the Contract Unit Price per **foot** in accordance with the plans and Section 02763 – Durable Cold Plastic Pavement Markings 6” and 12” Crosswalk Line and 18” and 24” Stop Bar.

90 - Permit Allowance

This bid item is to compensate authorities for their efforts to review the construction plans for permit issuance, process the permit, and inspect work. This bid item shall only be paid for at actual invoiced costs. Details and payment for this item is described in Section 02990 and shall be coordinated prior to beginning construction. All costs associated with this allowance item are approximate. The final payment will be adjusted to reflect the actual invoiced costs. If the invoiced costs are less than those set forth in the bid item, the Owner will receive a credit, based upon the remaining allowance amount. If the invoiced costs are greater for those bid items, the Contractor will receive additional payments based upon the amount in excess. The Contractor should make no assumptions regarding the above stated quantities or allowances. The Contractor shall not mark-up invoices associated with this allowance item.

91 - Observation Crew Days

This bid item shall be included as a consideration in the “Total Amount of Bid” at the Contract Quantity per **day** basis as the Contractor's statement of the number of "Crew Days" estimated to complete the work. This item is not an item for which the contractor will be paid. The number of "Crew Days" for which the Owner will have to provide engineering supervision and observation including inspection of cleanup operations is a consideration of the Contract. This bid item is included in the Contract to be used as a comparative evaluation of bids. Please review Section 01421 of the Specifications herein for information related to “Crew Days.”

DIVISION II – WILTSHIRE RD (MORTENSON TO COOLIDGE)

1 - Mobilization Division I (Max 5%)

This bid item shall be paid for at the Contract Unit Price per **lump sum** basis. The Work required by this item shall include, but not be limited to, the preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of the Contractor's offices, buildings, 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 pre-construction costs, 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. The Work shall include all demobilizations and remobilizations which are required due to seasonal suspension of the Work. This contract pay item also includes all other items and costs not included in the price bid for specific items such as overhead, insurance, bond costs (i.e. performance, labor and material, and maintenance and guarantee), permits, safety program, coordination with others, and the like. All cost to the Contractors for full compliance with all requirements of the General Conditions sections shall also be included in this pay item.

The Contract Unit Price for Mobilization **shall not exceed five (5) percent** of the Total Amount of Division II Bid minus the amount for this pay item. Payment for this item will be based upon the following Partial Payment schedule:

Percentage of Original Contract Amount Earned	Percentage of Bid Price for Mobilization Allowed
5	50%
10	75%
25	100%

Additional unit prices will not be paid for the Contractor to remobilize to the site regardless of the staging or sequence of construction preferred by the Contractor. The initial payment for the project shall not be made until construction has been started and a schedule of values (if required) for the project has been approved. The total sum of all payments for this item shall not exceed the original contract amount bid for MOBILIZATION, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project, moved equipment away from the project and then back again, or for additional quantities or items of work added to the contract.

2 - Erosion Control, Inlet Protection, Fabric Drop

This bid item shall be paid for at the Contract Unit Price per **each** fabric drop furnished, installed, maintained, and removed. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with Drawings. Oakland County Water Resources Commissioner (OCWRC) may have additional requirements. The work covered by this item shall include installation of required Soil Erosion and Sedimentation Control (SESC) devices. The Contractor's responsibilities include installation and maintenance of specified SESC devices for the duration of the construction. Upon completion of the Project, it will be the Contractor's responsibility to remove and properly dispose of SESC devices.

3 - Tree Protection Fence

This bid item shall be paid for at the Contract Unit Price per **lineal foot** based on the installed lengths of tree protection fence as measured in place. Item also includes any required maintenance, repairs, removals and/or re-installations of the fencing throughout the project. Measurement and payment and the Work required by this item shall be completed in accordance with the Drawings and Section 01001-Supplemental Project Notes, Item 32 – Tree Protection.

4 - Traffic Maintenance, Incl. Flag Control, Division 2

This bid item shall be paid for at the Contract Unit Price per **lump sum** basis. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with the Section 02550, the Special Provision for Maintaining Traffic, the traffic control detail sheets, and the Michigan Manual of Uniform Traffic Control Devices. Maintaining Traffic shall include the installation, relocation, covering, supplementing, and removing the proposed traffic control measures including all signage, barricades, and other traffic control devices as required per the MDOT standard plans for the applicable closures necessary to safely perform the Work. This item is to cover the cost of maintaining traffic during the progression of the project per the Construction Drawings and the approved Contractor's Sequence of Operation for Division 2, Mortenson to Coolidge. Flag control as required by the construction activity throughout the project is also included in this bid item.

5 - Barricade, Type III, High Intensity, Furn, Special

This bid item shall be paid for at the Contract Unit Price per **each** Barricade of the specified size and type furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

6 - Barricade, Type III, High Intensity, Oper, Special

This bid item shall be paid for at the Contract Unit Price per each barricade of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

7 - Channelizing Device, 42 inch, Furn

This bid item shall be paid for at the Contract Unit Price per each channelizing device of the specified size and type, furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

8 - Channelizing Device, 42 inch, Oper

This bid item shall be paid for at the Contract Unit Price per each channelizing device of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

9 - Sign, Type B, Temp, Prismatic, Furn

This bid item shall be paid for at the Contract Unit Price per square foot of sign of the specified size and type, furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

10 - Sign, Type B, Temp, Prismatic, Oper

This bid item shall be paid for at the Contract Unit Price per square foot of sign of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

11 - Sign, Type B, Temp, Prismatic, Furn, Special

This bid item shall be paid for at the Contract Unit Price per square foot of sign of the specified size and type, furnished and installed at the project site in the locations specified on the Drawings. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

12 - Sign, Type B, Temp, Prismatic, Oper, Special

This bid item shall be paid for at the Contract Unit Price per square foot of sign of the specified size and type, operated, maintained, and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

13 - Sign Cover

This bid item shall be paid for at the Contract Unit Price per each sign cover installed and removed from the project. Work required for this item shall be in accordance with the 2020 MDOT Standard Specifications for Construction.

14 - Color Audio-Video Route Survey

This bid item shall be paid for at the Contract Unit Price per **lump sum** basis per construction zone of influence. The Work required by this item shall be completed in accordance with the Section 0231 – Color Audio-Video Route Survey. For the purposes of this Contract the entire project area shall be considered one (1) construction zone of influence.

15 - Cold Milling, HMA Surface

This bid item shall be paid for at the Contract Unit Price per **square yard** of asphalt and concrete milling to the specified depth, width, grade, and cross section shown on the plans, as measured in place. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 501 of the 2020 MDOT Standard Specifications for Construction and the

Drawings. Item also includes clean-up and disposal of milled material, both asphalt and concrete, to the approved locations.

16 - Driveway, Rem

This bid item shall be paid for at the Contract Unit Price per **square yard** based on the measured area of driveway material removed. Measurement and payment and the Work required for this item includes full depth saw cutting of material to be removed, any breaking and crushing of the material to aide in removal, and removal of proper disposal of material. The Work also shall be completed in accordance with the Drawings.

17 - Sidewalk, Rem

This bid item shall be paid for at the Contract Unit Price per **square yard** based on the measured area of sidewalk material removed. Measurement and payment and the Work required for this item includes full depth saw cutting of material to be removed, any breaking and crushing of the material to aide in removal, and removal of proper disposal of material. The Work also shall be completed in accordance with Section 204 of the 2020 MDOT Standard Specifications for Construction, except that it includes sidewalk of any thickness, including sidewalk ramps and detectable warning surfaces.

18 - Curb, Rem

This bid item shall be paid for at the Contract Unit Price per **Lineal Foot** of curb and gutter removal and proper disposal. This item includes saw cutting as necessary for removal of curb and gutter as noted on the Drawings. Also included is removal and proper disposal of aggregate base and subbase materials as required to obtain design subgrade elevation for proposed work.

19 - Pavt Repair, Nonreinf Conc, 6-inch, MOD

This bid item shall be paid for at the Contract Unit Price per **Square Yard** of pavement repair. The work shall consist of saw cutting as necessary for removal and proper disposal of existing concrete base with HMA overlay, preparation of sub base, placing horizontal dowels, placing concrete, joints, finishing, and curing. This work shall be in accordance with Section 603 of the 2020 MDOT Standard Specifications for Construction. Concrete Pavement Restoration, of the MDOT 2012 Standard Specifications for Construction, and MDOT Standard Plan R-44-F for Concrete Pavement Repair, and the Contract Drawings.

20 - Maintenance Gravel, Special

This bid item shall be paid for at the Contract Unit Price per **ton**. Installation of Maintenance Gravel shall be at the discretion of and only after approval by Owner's field representative. The Work required for this item shall be completed in accordance with Section 306 of the 2020 MDOT Standard Specifications for Construction. The purpose of this item is to help maintain traffic and access for residents.

21 - Hand Patching, HMA

This bid item shall be paid for at the Contract Unit Price per **Ton** of material placed, and as supported by the weight tickets supplied by the Contractor. This item shall include all work, materials, labor, and equipment necessary to furnish and install temporary HMA patching required to maintain sidewalk

accessibility to residents during the construction phases. The Contractor shall use an Owner-approved HMA top course material for hand patching material.

22 - Aggregate Base, MDOT 21AA, 2-inch

This bid item shall be paid for at the Contract Unit Price per **Ton** of MDOT 21AA delivered to the site, placed, and compacted as specified. The work included and required by this item is described on and shall be completed in accordance with the Drawings.

23 - Void Reducing Asphalt Membrane (Spray, J-Band Type)

This bid item shall be paid for at the Contract Unit Price per **linear foot** of void reducing asphalt membrane spray of the specified type, applied. Payment for this work includes all costs associated with furnishing and installing the materials necessary to complete this item of work. This item is to be used if half-width paving is performed, this item is not required if the road is paved at full width. Item shall be completed in accordance with the Special Provision for Void Reducing Asphalt Membrane, Spray (J-Band Type).

24 - 1.5-inch MDOT 5EML, MOD Mix (Wearing)

This bid item shall be paid for at the Contract Unit Price per **Ton** of material placed. This item shall include all work, materials, labor, and equipment necessary to furnish and install Hot Mix Asphalt (HMA) of the specified mix, on a prepared base to the line, grade, thickness, and cross-section in accordance with these specifications and drawings. Item also includes required bond coat. Work required for this item shall be completed in accordance with Section 02511 and the 2020 MDOT Standard Specifications for Construction.

25 - 2-inch MDOT 4EML, MOD Mix (Leveling/Base)

This bid item shall be paid for at the Contract Unit Price per **Ton** of material placed. This item shall include all work, materials, labor, and equipment necessary to furnish and install Hot Mix Asphalt (HMA) of the specified mix, on a prepared base to the line, grade, thickness, and cross-section in accordance with these specifications and drawings. Item also includes required bond coat. Work required for this item shall be completed in accordance with Section 02511 and the 2020 MDOT Standard Specifications for Construction.

26 - Driveway, Nonreinf Conc, 6-inch (incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square yard** of concrete driveway installed to the specified thickness, as measured in place. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02520, Special Provision for ASR in Concrete, and as detailed on the Drawings. The Work shall include excavation necessary to accommodate the specified cross-section with a 4-inch-thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete driveway to the specified thickness and dimensions.

27 - Curb, Conc, MDOT Det F4

This bid item shall be paid for at the Contract Unit Price per **lineal foot** of concrete curb and gutter installed, as measured in place. The Work required for this item shall be completed in accordance with the Section

02530, Special Provision for ASR in Concrete and the 2020 MDOT Standard Specifications for Construction.

28 - Sidewalk, Conc, 4-inch, Special (incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square foot** of concrete sidewalk installed to the specified thickness, as measured in place. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02840, Special Provision for ASR in Concrete, and as detailed on the Drawings. The Work shall include excavation necessary to accommodate the specified sidewalk cross-section with a 4-inch-thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete sidewalk to the specified thickness and dimension.

29 - Sidewalk, Conc, 6-inch, Special (incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square foot** of concrete sidewalk installed to the specified thickness, as measured in place. This item shall be used to complete restoration of areas disturbed by construction. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02840, Special Provision for ASR in Concrete, and as detailed on the Drawings. The Work shall include excavation necessary to accommodate the specified sidewalk cross-section with a 4-inch-thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete sidewalk to the specified thickness and dimension.

30 - Sidewalk Ramp, Conc, 6-inch, Special (incl. sand base)

This bid item shall be paid for at the Contract Unit Price per **square foot** of concrete sidewalk ramp, landings, monolithic rolled curbs or side flares and curb and gutter openings, installed and measured in place. This item shall be used to complete restoration of areas disturbed by construction. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 02840, Special Provision for ASR in Concrete, and the Drawings. The Work shall include excavation necessary to accommodate the 6-inch sidewalk ramp cross-section with a 4-inch thick sand base, preparation of the subgrade, installation and compaction of the sand base material, and installation of a new concrete sidewalk ramp to the specified thickness and dimension. New sidewalk ramps and landings shall meet all applicable Americans with Disabilities Act requirements which shall be confirmed by the installing contractor. Furnishment and installation of the required detectable warning surface shall be paid for separately.

31 - Detectable Warning Surface (5-foot x 2-foot)

This bid item shall be paid for at the Contract Unit Price per **each** for furnishment and installation of the required detectable warning surface, of specified length, in new sidewalk ramps and landings to meet all applicable Americans with Disabilities Act requirements, which shall be confirmed by the installing contractor. Measurement and payment and the Work required for this item are described and shall be completed in accordance with Section 0284 and the Drawings. Installation of the concrete sidewalks and sidewalk ramps shall be paid for separately.

32 - Dr Structure Frame & Cover, EJ 1040

This bid item shall be paid for at the Contract Unit Price per **each** drainage structure cover of the indicated type, furnished and installed. Work included and required by this item are described and shall be completed in accordance with Section 02660, the project details, and the Special Provision for Drainage Structure Covers. Item also includes initial adjustment of structure casting to current or proposed grade as required by project phasing.

33 - Dr Structure Frame & Cover, EJ 5000

This bid item shall be paid for at the Contract Unit Price per **each** drainage structure cover of the indicated type, furnished and installed. Work included and required by this item are described and shall be completed in accordance with Section 02660, the project details, and the Special Provision for Drainage Structure Covers. Item also includes initial adjustment of structure casting to current or proposed grade as required by project phasing.

34 - Dr Structure Cover, Adjust

This bid item shall be paid for at the Contract Unit Price per **each** utility structure adjusted, regardless of location of the structure. Payment shall be in full for the complete and final adjustment of each utility structure; intermediate adjustments will not be paid for separately. The Work required by this item shall be in accordance with OCWRC Details and includes all necessary excavation; removal and salvage of existing frame and cover (where necessary); removal of any loose chimney materials, installation of supplemental materials to rebuild the structure chimney, mortar coat around exterior of chimney, waterproofing of chimney, backfilling; sand and gravel backfill; disposal of surplus excavated material; and all other work incidental to the adjustment of the utility structure. Item also includes adjusting newly installed drainage structures from existing grades to final proposed grades as a result of the project phasing.

35 - Water Structure Cover, EJIW No. 1040

This bid item shall be paid for at the Contract Unit Price per **each** water structure cover of the indicated type, furnished and installed. Work included and required by this item are described and shall be completed in accordance with Section 02660, the project details and the Special Provision for Drainage Structure Covers.

36 - Water Structure Cover, Adjust

This bid item shall be paid for at the Contract Unit Price per **each** utility structure adjusted, regardless of location of the structure. Payment shall be in full for the complete and final adjustment of each utility structure; intermediate adjustments will not be paid for separately. The Work required by this item shall be in accordance with OCWRC Details and includes all necessary excavation; removal and salvage of existing frame and cover (where necessary); removal of any loose chimney materials, installation of supplemental materials to rebuild the structure chimney, mortar coat around exterior of chimney, waterproofing of chimney, backfilling; sand and gravel backfill; disposal of surplus excavated material; and all other work incidental to the adjustment of the utility structure. Item also includes adjusting newly installed utility structures from existing grades to final proposed grades as a result of the project phasing.

37 - 4-inch Topsoil

This bid item shall be paid for at the Contract Unit Price per **square yard** of topsoil installed of the specified depth. Work included and required by this item shall be completed in accordance with the Section 02930.

38 - Sodding (incl. 14-day watering)

All disturbed areas are to be restored equal to what existed prior to water main installation. Restoration of grass/lawn areas shall be restored with sod and is to conform to the Specifications as set forth in Sections 01001, 02930 and 02970. Unless otherwise specified herein, the Contractor shall keep all restored lawn areas watered for a minimum of 14 days at his expense.

The contractor shall make his own determination as to the actual limits of required area removals that does not impact further removals or exceeds the limits of the right-of-way or easement lines. Should additional removal and replacement be required either to construct the project or due to the contractor's interpretation of what is required to construct the project and comply with all local, state and federal laws, or if construction damage is beyond the limits originally anticipated, the contractor shall be solely responsible for all costs associated with the removals and restoration of all disturbed areas to a condition equal to or better than what existed prior to construction. Electrical power lines for ground mounted signs shall not have any underground splices.

As part of the project, all disturbed areas shall be restored upon completion of the work to equal or better condition. This Contract is set-up to afford as much flexibility to the Contractor to conduct his operations in an efficient manner. As such, unless specifically noted on the plans, the location of the bore pits or other excavations that will be needed to complete the work are to be determined by the Contractor.

All costs for restoration of disturbed areas within the limits of the entire project as a result of the Contractor's operations, including all excavations for access pits, utility and service lead "pot holes" or other open cut water main installations, as well as staging and stockpiling are to be included in the **square yard (syd)** price bid for "Sodding (Incl. 14-day watering)." The Contractor is responsible for the restoration and/or repair of any and all areas caused as a result of his operations.

39 - Seed & Mulch Blanket (incl. 14-day watering)

This bid item shall be paid for at the Contract Unit Price per **square yard** of seed and mulch blanket as measured in place. This item is considered an as needed item as part of the Contract. Work included and required by this item shall be in accordance with Section 02958. Item also includes 14-day watering upon date of installation.

40 - Sign, Type III Rem

This bid item shall be paid for at the Contract Unit Price per **each** sign of the specified size and type, removed. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction

41 - Sign, Type IIIA

This bid item shall be paid for at the Contract Unit Price per **square foot** of sign of the specified type, fabricated, and attached to steel post system in the locations as detailed on the Drawings. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

42 - Reflective Panel for Permanent Sign Support, 6 Foot

This bid item shall be paid for at the Contract Unit Price per **each** reflected panel of the specified size and type, installed. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

43 - Ground Mtd Sign Support, Rem

This bid item shall be paid for at the Contract Unit Price per **each** support of the specified size and type, removed and properly disposed of. This Work shall include any removal of excavated materials and properly disposed of. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

44 - Steel Post System

This bid item shall be paid for at the Contract Unit Price per **each** steel post system of the specified type, furnished and installed in locations shown on the Drawings. See sheet CD-4 for material specifications and manufacturer for steel post system, which includes signpost anchor, signpost, and all associated hardware and material to install into the ground. Work required for this item shall be in accordance with the 2012 Michigan Standard Specifications for Construction.

45 - Pavt Mrkg, Ovly Cold Plastic, 24-inch Stop Bar

This bid item shall be paid for at the Contract Unit Price per **foot** in accordance with the plans and Section 02763 – Durable Cold Plastic Pavement Markings 6” and 12” Crosswalk Line and 18” and 24” Stop Bar.

46 - Observation Crew Days

This bid item shall be included as a consideration in the “Total Amount of Bid” at the Contract Quantity per **day** basis as the Contractor's statement of the number of "Crew Days" estimated to complete the work. This item is not an item for which the contractor will be paid. The number of "Crew Days" for which the Owner will have to provide engineering supervision and observation including inspection of cleanup operations is a consideration of the Contract. This bid item is included in the Contract to be used as a comparative evaluation of bids. Please review Section 01421 of the Specifications herein for information related to “Crew Day

ALTERNATE I

1 - Water Main, 8-inch Dia., HDPE SDR 11, Open Cut / HDD

This bid item shall be paid for at the Contract Unit Price per **Lineal Foot** of HDPE water main of the specified diameter installed. Installation of the water main may be performed via open-cut construction methods or horizontal directional drilling (HDD). Item includes excavation, shoring and bracing, dewatering, bedding, pipe joints, miscellaneous fittings, tracer wire and appurtenances, polyethylene wrap, thrust blocks, backfill, compaction, disinfection, pressure testing, labor, and equipment necessary to complete the construction of pipe as described in the contract documents. Contractor is responsible for verifying the elevations of utilities crossing the proposed water main, including sewer services, and making adjustment to water main elevations to avoid conflicts. Measurement and payment and the Work required for this item shall be completed in accordance with Section 02336, 02660, 02661 and the Contract Drawings.

END OF SECTION

SECTION 02336

HORIZONTAL DIRECTIONAL DRILLING

(WATER MAIN)

PART 1 GENERAL:

1.1 SUMMARY

- A. This Section is intended to technically describe the nature of the materials, equipment and workmanship and include all work, materials, labor, equipment, and incidentals necessary to provide for the installation of water main pipe through horizontal directional drilling methods.
- B. Related Requirements
 - 1. Section 02660 – Water Main Systems
 - 2. Section 02661 – Ductile Iron Water Main Pipe
 - 3. Section 02662 – High Density Polyethylene Water Main Pipe

1.2 MEASUREMENT AND PAYMENT

- A. **Water Main, _____, _____ inch, HDD.....Foot:**
The Owner shall pay for **Water Main** installed by horizontal directional drilling of the material and diameter specified at the contract unit price per linear foot, measured in place along the centerline of pipe, which price shall be payment in full for furnishing the materials including specials and fittings, all necessary excavation, sheeting or bracing, draining, laying, jointing, bedding, testing, disinfecting, backfilling and compacting, disposal of surplus excavated materials, restoration and final cleanup, and all other work required for the construction of the water main. All labor, tools and material necessary to excavate for, lay, join, backfill, test, disinfect, and finish the water mains complete, shall be considered as part of the water main construction. Measurement of **Water Main** will be taken from end to end with no reductions for fittings and valves.
- B. The cost associated with excavating, supporting, dewatering, using, and backfilling insertion and pulling shafts, access or exit pits, or other necessary excavations will not be paid separately, but shall be included in the unit price bid for **Water Main, _____, _____ inch, HDD.**
- C. The costs associated with installing segments of water main pipe and fittings by open-cut methods, including necessary joint restraints, inline pipe restraint, stone bedding and initial backfill, thrust blocking, concrete anchors, and specified tracer wire will not be paid separately, but shall be included in the unit prices bid for **Water Main, _____, _____ inch, HDD.**
- D. The following work items shall be included in the contract bid price per linear foot for **Water Main, _____, _____ inch, HDD**, unless otherwise described
 - 1. Excavation, support/shoring, use, and backfilling of all access and exit pits
 - 2. Dewatering Plan
 - 3. Pilot Tunnel Boring
 - 4. Removal and disposal of spoils
 - 5. Monitoring, removal and disposal of drilling fluid including all costs associated with use of vacuum excavation equipment.

6. Traffic Control including efforts to maintain access to roads and driveways during all HDD operations
 7. Exploratory locating and “potholing” of existing utilities
 8. Settlement/Heaving Monitoring
 9. Additional pipe work to connect to existing system
 10. Hydrostatic Pressure Testing, Disinfection and Sampling
 11. As-Built Survey
 12. Clean-up
 13. All additional items described herein as incidental to the work.
- E. All appurtenances proposed as part of the project including but not limited to, physical connections to the existing system, gate valves, gate wells, hydrant assemblies, blow-offs, and air release valves will be paid for separately.

1.3 REFERENCES

- A. Abbreviations and Acronyms
1. ANSI – American National Standards Institute (www.ansi.org)
 2. ASTM – American Society for Testing and Materials
 3. AWWA - American Water Works Association (www.awwa.org)
 4. HDD – Horizontal Directional Drilling
 5. NSF – National Sanitation Foundation
- B. Definitions
1. Azimuth – the angle at which the downhole probe is projecting in the horizontal plane at a particular downhole survey point (magnetic north corresponds to zero degrees)
 2. Product pipe – the piping to be permanently installed for the project.
- C. Reference Standards
1. ASTM F1962 – Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings
 2. PPI TR-46 Guidelines for Use of Mini-Horizontal Directional Drilling for Placement of High-Density Polyethylene Pipe
 3. AWWA M55 Manual of Water Supply Practices, PE Pipe – Design and Installation.
 4. AWWA C651, “Disinfecting Water Mains”
 5. NSF/ANSI Standard 61: Drinking Water System Components - Health Effects
 6. All work shall comply with the reference standards unless specifically stated otherwise in the Specification.
 7. References to documents and standards which are made part hereof shall be latest edition thereof.

1.4 PROJECT WORK PLAN

- A. Prepare a Project Work Plan (PWP) in advance of the pre-construction meeting which clearly defines the HDD installation in conformance with the requirements of the Contract Documents. The PWP shall at minimum contain:
1. Working drawings including the location and dimension of all access pits.
 2. Proposed shoring, support or temporary earth retention systems for access pits.
 3. Installation sequencing and schedule.

4. Schedule of Submittals.
 5. Traffic Control Plan
 6. Project contact list and defined responsibilities.
 7. Size, capacity and setup requirements of all equipment (including drill rig, thrust/pull-back and rotary torque capacity as well as the mud pump motor size)
 8. Data logger compatible with HDD system used.
 9. HDD guidance system type and information including the accuracy, range, and repeatability values for inclination, roll, and azimuth of the system.
 10. Type of cutting tool head.
 11. Method of monitoring and controlling line and grade.
 12. Arrangement of equipment.
 13. Location of product pipe joining areas and staging areas.
 14. Dewatering plan and method
 15. Method of removing spoils.
 16. Water main material type, size, and class, including manufacturer recommended maximum allowable pulling force for the pipe and joints.
 17. Method of joining water main pipe.
 18. Method of installing tracer/detection wire.
 19. Method of abandonment of pilot holes.
 20. Carrier pipe end seals.
 21. Preliminary Drilling Fluids Management Plan, refer to Article 1.6
 22. Settlement/Heaving Monitoring Plan, refer to Article 1.6
- B. Compensation for all work required for the preparation of the PWP shall be included in the cost of the project.
- C. If during construction, the Contractor determines that modifications to the method and equipment as stated in the original submittal is necessary, then the Contractor shall submit a plan describing such modifications, including the reasons for the modifications, to the Owner for review and concurrence prior to making the modification.

1.5 SUBMITTALS

- A. Comply with Specification Section 01300.
- B. Refer to the related sections within the specifications for submittals required for the proposed product pipe to be installed via HDD.
- C. Project Work Plan as detailed in Article 1.4.
- D. Project Experience
1. Submit documentation showing three (3) years of guided boring experience with at least 15,000 feet of guided boring installation to include 6" to 24" diameter projects similar in the scope and value to the project specified in the contract documents.
 2. Provide evidence of completion of at least five (5) projects of similar magnitude and soil and groundwater conditions.
 3. Include the following information at a minimum;
 - a. Date, duration and location of the work,
 - b. Pipe information (i.e. length, diameter, depth of installation, pipe material, etc.),

- c. Project owner information (i.e. name, address, telephone number, contact person, etc.), and,
 - d. Contents handled by the pipeline (i.e. water, wastewater, conduit, gas, etc.).
- E. Personnel Experience
 - 1. Submit a list of field supervisory personnel and their experience with guided boring operations.
 - a. Field supervisory personnel shall have a minimum of three (3) years' experience in the performance of the work and tasks as stated in the contract document.
 - b. At least one of the field supervisors listed must be at the site and be responsible for all work at all times when guided boring operations are in progress.
 - 2. Include certifications for all operators, including the operator assigned to this job.
 - 3. Certificate of training endorsed by the manufacturer of the HDD equipment.
 - 4. Guided boring operations will be postponed until the resume(s) of the Contractor's field supervisory personal have been received, reviewed, and approved by the Owner.
- F. Submit all drawings, catalog cuts and other descriptive data covering related items in the same system at the same time in order that their complete integrated applicability in the entire system may be adequately reviewed.

1.6 QUALITY ASSURANCE

- A. Verify horizontal and vertical location of all known utility crossings along the proposed bore path in accordance with PA 174.
- B. Drilling Fluids Management Plan
 - 1. Provide a Preliminary Drilling Fluids Management Plan prior to the pre-construction meeting that generally describes the following:
 - a. Method of mixing fluid and water and storage requirements.
 - b. Method of slurry containment
 - c. Drilling fluid disposal
 - d. Drilling fluid spill prevention measures
 - 2. Submit a Final Drilling Fluids Management Plan (DFMP) a minimum of two (2) weeks prior to starting HDD operations. The Final DFMP shall describe, at minimum, the following:
 - a. Type of drilling fluid to be used
 - b. Type of any proposed drill fluid additives
 - c. MSDS for all fluids and additives
 - d. Drilling fluid composition
 - e. Proposed ranges, test and test schedule for fluid density, viscosity and sand content of drilling fluid
 - f. Proposed primary and alternate fresh water sources
 - g. Method of mixing fluid and water and storage requirements.
 - h. Proposed drilling fluid pressures
 - 3. Include a Drilling Fluid Disposal Plan as part of the Final DFMP. The Drilling Fluids Disposal Plan shall include, at minimum, the following:
 - a. Method of slurry disposal and containment.

- b. Estimated volume of drilling fluid and spoil to be disposed of and the approximate timing of the schedule for the material to be disposed.
 - c. Testing plan for the complete composition of the drilling waste.
 - d. Methods of disposal and transporting off site of drilling fluids and spoils.
 - 4. Include a Contingency Plan for Inadvertent Fluid Returns as part of the Final DFMP. The Contingency Plan shall include, at minimum, the following:
 - a. Method of monitoring drill fluid pressures and description of the annular pressure tool used
 - b. Methods of onsite monitoring for inadvertent returns (site walks, entry/exit pit fluid level monitoring, etc.)
 - c. Range of fluid pressure changes indicative of a potential inadvertent fluid return to the surface.
 - d. Communication method between monitoring personnel and the rig operator
 - e. Decision points for communication method between Contractor, Owner's field representative and Engineer.
 - f. Decision points and procedures for suspending drilling operations
 - g. Containment methods
 - h. Cleanup methods
 - i. Downhole plugging agents and method and procedures of implementation
 - j. List of emergency response equipment
 - k. Corrective procedures to reestablish fluid circulation prior to initiating the restart of drilling operations
- C. Settlement/Heaving Monitoring
 - 1. Monitor potential heave or settlement at each shoulder point, each edge of pavement, the edge of each lane of pavement (or centerline for two lane roads), and otherwise at 50 foot intervals along the pipe centerline.
 - 2. Perform baseline survey one day prior to initiating this operation at each required monitoring location.
 - a. Perform daily follow-up surveys at the monitoring points established in the baseline survey until the HDD operations are complete.
 - b. Record all survey readings to the nearest one-hundredth (0.01) of a foot.
 - 3. Take digital photographs of the ground surface conditions prior to and after HDD operations.
 - 4. Stop HDD operations immediately whenever monitored points indicate a vertical change in elevation of ½ inch or more, or any surface disruption is observed.
 - a. Immediately report the amount of settlement to the Owner's resident project representative or permitting agencies inspector.
- D. As-Built Survey
 - 1. Provide a tabulation of coordinates referenced to the drilled entry point of the pilot hole drilling to accurately describe the location of the pilot hole.
 - 2. Provide a log of the pullback pressures for each setup upon completion of the installation of each length of pipe.

1.7 SITE CONDITIONS

- A. Drilling operations shall not interfere with, interrupt or endanger surface and activity upon the surface, and will be confined to the area of work as shown on the project drawings.

- B. The Contractor shall carry out his operations in strict accordance with all OSHA and manufacturer's safety requirements. Particular attention is drawn to those safety requirements involving working with earth retention systems and entering confined spaces.
- C. When rock stratum, boulders, underground obstructions, or other soil conditions that impede the progress of drilling operations are encountered, notify the Owner and Engineer immediately.
 - 1. The Owner, Contractor and Engineer shall review the situation and jointly determine the feasibility of continuing drilling operations, making adjustments or switching to an alternative construction method if necessary.
 - 2. When it is determined that it is impossible to continue drilling operations, the Contractor will be directed how to proceed by the Owner and the Engineer.

PART 2 PRODUCTS:

2.1 WATER MAIN PIPE

- A. Material requirements for water main pipe of the material specified on the plans is included in the related Section for that type of pipe

2.2 EQUIPMENT

- A. The directional boring equipment shall consist of, at minimum;
 - 1. A directional boring rig of sufficient capacity to perform the bore and pullback the pipe within the planned line and grade,
 - 2. A boring fluid mixing and delivery system of sufficient capacity to successfully complete the drilling operation,
 - 3. A guidance system to accurately guide boring operations, and
 - 4. Trained and competent personnel to operate the system.
- B. Boring rig shall consist of a hydraulically powered system to rotate, push and pull the specified product pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill head.
 - 1. Anchor machine to withstand the pulling, pushing, and rotating pressure required to complete the drilling operation.
 - 2. Hydraulic Power System
 - a. Self-contained with sufficient pressure to power the boring operation
 - b. Free of Leaks
 - 3. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations.
 - 4. Rig shall be grounded during boring and pull-back operations
- C. The directional boring equipment must meet the minimum thrust/pullback rating, minimum rotary torque rating, and the minimum mud flow pumping capacity to facilitate installation of the product pipe per the contract drawings.
- D. The guidance system must have the capability to locate and track continuously and accurately the drill head during the pilot bore, acceptable methods include;
 - 1. Walkover
 - 2. Wire Line
 - 3. Magnetic Guidance System

4. Proven (non-experimental) gyroscopic probe
 5. Owner approved equal
- E. The guidance system shall have the ability to measure and provide information on the following;
1. Clock and pitch
 2. Depth
 3. Transmitter Temperature
 4. Battery Status
 5. Position (x,y)
 6. Azimuth, where direct overhead readings (walkover) are not possible
- F. The guidance system must have an independent means to ensure the accuracy of the installation.
1. Contractor will demonstrate a viable method to eliminate accumulated error due to inclinometer (pitch or accelerometer).
 2. The guidance system shall be capable of generating a plot of the borehole survey for the purpose of an as-built drawing.
- G. The proposed equipment set up requirements, including but not limited to proposed access and exit pit locations, are at the sole determination of the Contractor. Such information shall be submitted along with all other required information per the specifications.

2.3 DRILLING FLUID

- A. No drilling fluid shall be used that does not comply with environmental regulations.
- B. Drilling fluids shall be a mixture of clean water and bentonite clay.
1. The fluid shall be inert.
 2. The fluid should remain in the tunnel to insure the stability of the tunnel, reduce drag on the pulled pipe, and provide backfill within the annulus of the pipe and tunnel.

2.4 DRILLING WATER

- A. The Contractor shall provide clean water for the mixing of drill fluid.
- B. The Contractor is responsible for locating a clean water source, and for transportation and storage of water.
- C. The Contractor shall secure appropriate permissions from the entity having jurisdiction over the clean water source.

PART 3 EXECUTION:

3.1 GENERAL

- A. Evaluate the atmosphere in and around the project site to determine the presence of toxic or flammable vapors or lack of oxygen prior to performing any access pit excavations or beginning drilling operations.

- B. Perform HDD operations in a manner that will minimize the movement of the ground in front of, above, and surrounding the boring operation
 - 1. Minimize the subsidence of the surface above and in the vicinity of the boring.
 - 2. Support the ground in a manner to prevent loss of ground and keep the perimeter and face of the boring stable at all times, including during shutdown periods.
- C. Dewatering
 - 1. Dewatering of pits and excavations must meet the general provision and specifications for watermain construction in effect per the Owner's requirements.
 - 2. The dewatering plan and method used by the Contractor, must be approved by the Owner, prior to commencing with the dewatering activity.
 - 3. When water is encountered, the Contractor must provide a dewatering system of sufficient capacity to remove water, keeping any excavations free of water until the backfill operation is in progress.
 - 4. Dewatering will be performed in a manner that removal of soil particles are held to a minimum.
 - a. Soil Borings were performed and are provided per Specification Section 01900 Soil Conditions and Boring Logs.
 - b. The groundwater level is subject to change, and the contractor shall be responsible for making his own determination of water levels that may exist during construction.
 - 5. All dewatering work, if necessary, shall be considered incidental to the unit bid prices listed in the project proposal.

3.2 PREPARATION

- A. Excavate access pits at the locations and dimensions as necessary to horizontal directional drill the proposed watermain alignment as shown on the project drawings.
 - 1. Construct excavation in accordance with MIOSHA Construction Safety Standards for "Excavation, Trenching and Shoring".
 - 2. Install protection fencing or barriers adjacent to equipment and supplies to prohibit pedestrian access to the work site.
 - a. Equipment shall not be used as fencing to protect access pits
- B. Drilling procedures and equipment shall provide protection of workers particularly against electrical shock.
 - 1. As a minimum, grounding mats, grounded equipment, hot boots, hot gloves, safety glasses and hard hats shall be used by crewmembers.
- C. Equip drilling equipment with an operational alarm system capable of detecting electrical current.
- D. Rope off and cover all access pits when not active.
- E. Size access pits to adequately contain the expected return of drilling fluids and spoils.
- F. Removal of trees, landscaping, pavement or concrete will meet the general provisions and specifications for watermain construction per the Owner's requirements. However, any removals not noted on the drawings must be authorized by the Owner or Engineer.
- G. The Contractor is responsible for protecting all existing utilities.

1. The Contractor shall call Miss Dig a minimum of 3 working days before any work is to begin.
2. Existing utilities within the path of the proposed horizontal directional bore, shall be “pot holed”, to determine the depth.
3. The costs of any “pot holing” will be borne by the Contractor and included in the unit bid price for installing the new watermain, unless a specific item is provided in the Proposal for exploratory digging and locating of utilities.

3.3 PRODUCTION

- A. Abandonment of a bore or ream within the influence of the roadway is prohibited.
- B. Minimize the period of shutdown between work shifts for boring, reaming or product pipe installation operations.
 1. 48 hours maximum

3.4 PILOT HOLE BORING

- A. Maintain the entry angle and pilot hole during the boring process at a curvature that does not exceed the allowable bending radius of the product pipe.
- B. Drill the pilot hole along the path shown on the plan and profile drawings to the following tolerances:
 1. Elevation: plus or minus 6 inches
 2. Alignment: plus or minus 6 inches
 3. Curve Radius: No curves will be accepted with a radius less than that shown on the drawings.
- C. Alignment Adjustments and Restarts
 1. Follow the pipeline alignment as shown on the drawings, within the specifications stated.
 - a. If adjustments are required, the Contractor shall notify the Engineer and Owner for approval prior to making the adjustments.
 2. In the event of difficulties at any time during boring operations requiring the complete withdrawal from the bore, the Contractor may be allowed to withdraw and abandon the bore and begin a second attempt at a location approved by the Owner and Engineer.
 - a. The Contractor may excavate at the point of the difficulty and install the product pipe by trench method, at no additional cost to the Owner, per the general provisions and specification for construction.
 3. The number of access pits shall be kept to a minimum.
 - a. The equipment must be capable of boring and installing the watermain in a continuous run without intermediate pits, of a minimum distance of 600 feet unless otherwise authorized by the Engineer.
 - b. The maximum length of any bore shall not exceed 1200 feet unless otherwise authorized by the Engineer.
 4. Plot the actual horizontal and vertical alignment of the pilot bore hole at each edge of pavement and at intervals not exceeding 20 feet. Update this plot as the pilot bore is advanced.
- D. Pilot Hole Final Location

1. Submit a tabulation of the coordinates of the pilot bore, exit and entry points and a drawing of the drilled profile upon completion of the pilot hole.
2. Product pipe shall not be installed until the Contractor has confirmed that the pilot hole is within the tolerances stated in this specification.
3. In the event the drilled profile fails to meet these specifications, the Owner reserves the right to reject the drilling attempt
 - a. Upon notice of rejection, the Contractor shall abandon the hole and submit a proposed profile for an additional drill attempt.
 - b. If the proposed profile is approved, the Contractor shall complete a new pilot bore
 - c. No additional compensation shall be paid for failed attempts.

3.5 INSTALLING PRODUCT PIPE

- A. After the pilot hole is completed, install a swivel to the reamer to minimize torsional stress imposed on the pull section and commence pullback operations.
 1. Should pre-reaming of the tunnel be necessary, it shall be performed at the option of the Contractor, and at no additional cost to the Owner.
- B. The reaming diameter shall not exceed 1.4 times the diameter of the product pipe being installed.
- C. For product pipe diameters' greater than 20-inch, an intermediate pre-reaming is required before pulling the pipe into place.
- D. The product pipe being pulled into the tunnel shall be protected and supported so that it moves freely and is not damaged by stones and debris on the ground during installation.
 1. Utilize pipe rollers, skates or other protective devices to prevent damage to the pipe, eliminate ground drag, reduce pulling force and reduce the stress on the pipe and joints.
- E. Assemble required piping in a manner that does not obstruct adjacent roadways or public activities.
- F. Tracer wire is required for all non-metallic pipe installations.
 1. Refer to product pipe specification for tracer wire requirements.
- G. Drill path alignment shall be as straight as possible to minimize the frictional resistance during pullback and maximize the length of the pipe that can be installed during a single pull.
- H. Pullback forces shall not exceed the allowable pulling forces for the product pipe.
- I. Provide for sufficient length of product pipe to extend past the termination point to allow for product pipe reversion, if applicable, and connections to adjacent pipe sections or gate valves.
- J. Pulled pipes will be allowed a minimum of 72 hours of stabilization prior to making tie-ins, unless otherwise indicated.
 1. This duration may be reduced or extended at the Owner's discretion based on the pipe material being installed or the length of the bore.
- K. Temporarily seal pulled pipe ends with a cap until the connection is made permanent.

- L. Do not remove the drilling fluid in the annular region outside of the pipe after completion of the pipeline installation. The drilling fluid is to remain in place to provide support for the pipe and the neighboring soil.

3.6 DRILLING FLUID

- A. Utilize drilling fluid during drilling and back reaming operations.
 - 1. Endeavor to maintain full annular circulation of drilling fluids.
 - 2. Minimize drilling fluid returns at locations other than the entry and exit points.
- B. Dispose and Contain excess drilling fluids in accordance with the submitted Drilling Fluid Disposal Plan.
 - 1. Store excess drilling fluid within a lined pit or containment pond, or trailer-mounted portable tank, as approved by the Owner, until removed from site.
- C. Dispose of excess drilling fluid and spoils in accordance with the submitted Drilling Fluid Disposal Plan.
 - 1. Drilling fluid waste must be tested prior to disposal
 - 2. Transport all excess drilling fluid and spoils to the disposal site at no additional cost to the Owner.
 - 3. Transport excess drilling fluid and spoils in a manner that prevents accidental spillage onto roadways.
 - 4. Do not discharge excess drilling fluid and spoils into streets, manholes, sanitary or storm drain systems, other drainage systems, or waterways.
- D. Drilling fluid returns caused by fracturing, formations, or any other means at locations other than the entry and exit points shall be minimized.
 - 1. Immediately clean up and dispose of any drilling fluid and spoils from return areas.
- E. The Contractor shall provide mobile spoils removal equipment capable of quickly removing spoils from entry and exit pits and from return areas.
 - 1. Equipment must be present during all HDD operations to fulfill the disposal requirements previously described.

3.7 OBSTRUCTIONS DURING CONSTRUCTION

- A. Notify the Owner and Engineer immediately upon encountering an obstruction that stops the forward progress of the drilling operation.
- B. Review the situation with the Owner and Engineer and determine the feasibility of continuing drilling operations or switching to an alternative construction method.

3.8 FIELD QUALITY CONTROL

- A. Provide and maintain instrumentation which will accurately perform the following functions:
 - 1. Locate the pilot bore entry point.
 - 2. Record coordinates of the pilot bore hole referenced to the drilled entry point.
 - 3. Monitor and measure drilling fluid flow discharge rate and pressure.
 - 4. Monitor and measure pullback pressure.
- B. Provide the Owner and Engineer access to the instrumentation at all times.

3.9 HYDROSTATIC PRESSURE TESTING

- A. Conduct hydrostatic pressure testing in accordance with the specification for the material specified on the plans.

3.10 DISINFECTION

- A. Disinfect water main in accordance with ANSI/AWWA C651 and as described in Section 02660.
- B. Unless otherwise indicated, Contractor to coordinate bacteriological samples with a certified laboratory and the Owner.

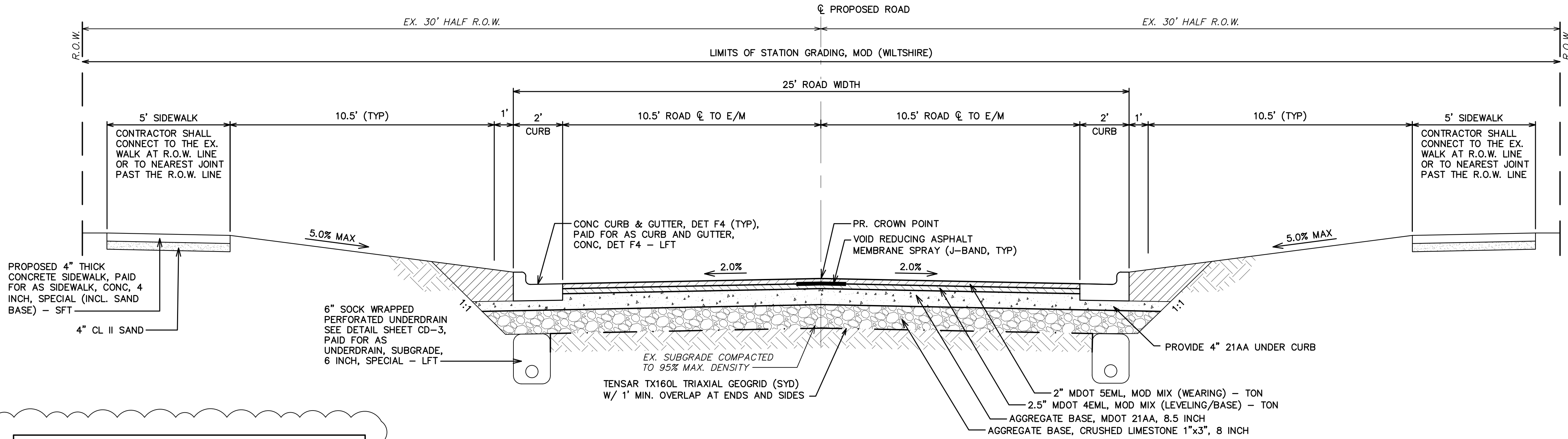
3.11 FINISH

- A. The finished product pipe shall be as commercially practicable from visual defects such as foreign inclusions, scratches, gouges, pinholes and delamination.
- B. For non-metallic product pipe, check the tracer wire connectivity.
- C. Restore to existing condition all excavations required for proper installation and inspection of the product pipe. Site restoration for the HDD operation is considered included in the cost of construction unless otherwise indicated under separate pay items listed in the Proposal.

3.12 NON-CONFORMING WORK

- A. Non-conforming work is any work outside of the acceptable tolerances for the item of work identified within these specifications that is considered to affect the performance and/or future maintenance of the new product pipe.
- B. Product pipe pulled in place outside of the horizontal and vertical alignment tolerances will be reviewed by the Owner for impact to the functionality of the product pipe and the associated network of piping.
 - 1. Decision on the impact of the finished product by Owner is final and non-negotiable.
 - 2. If the final position of the product pipe is determined to have a negative impact of the associated network of piping, the Contractor will either;
 - a. Bore a parallel product pipe of the same material, size, class, etc. to within the specified tolerances, if feasible, and cap and abandon the previously bored product pipe, or
 - b. Install system improvements, as determined by the Owner, to balance the negative impacts to the system the installed product pipe would provide.
- C. The finished product pipe shall be continuous over the entire length of the pipe section and be as free as commercially practicable from visual defects such as foreign inclusions, scratches, gouges, pinholes and delamination.
 - 1. Any visual defects shall be repaired at the Installation Contractor's expense in a manner mutually agreed upon by the Owner and the Installation Contractor.
 - 2. Damage to the product pipe in excess of the manufacturer's established tolerances are not acceptable and will require removal and replacement or abandonment of the product pipe in accordance with Article 3.10.B.2.a.

END OF SECTION



DIV 1 - HMA APPLICATION CHART

COURSE	ITEM	RATE OF APPLICATION (PER COURSE)	PERFORMANCE GRADE
TOP	HMA, 5EML (2.0" LIFT)	220 LBS/SYD	PG 64-22
BASE	HMA, 4EML (2.5" LIFT)	275 LBS/SYD	PG 64-22
	HMA BOND COAT (INCLUDED IN COST OF HMA)	0.10 GAL/SYD	FOR INFO ONLY NOT A PAY ITEM

* AGGREGATE WEAR INDEX (AWI) = 220 MIN (TOP)

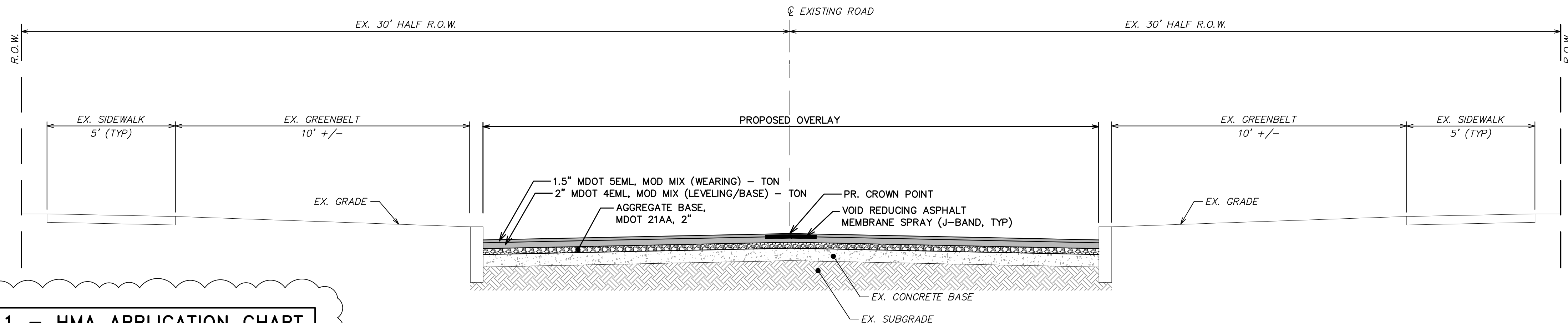
NOTE:
HMA BOND COAT MATERIAL PER SECTION 904 OF THE MDOT 2012
STANDARD SPECIFICATIONS FOR CONSTRUCTION

PROPOSED WILTSHIRE ROAD CROSS SECTION (60' R.O.W.) DIVISION I - WOODWARD TO MORTENSON

NOT TO SCALE

CONSTRUCTION NOTES

- RESTORATION TO BE PAID AS:
 - 4" TOPSOIL (SYD)
 - SODDING (INCLUDES 14 DAY WATERING) (SYD)



DIV 1 - HMA APPLICATION CHART

COURSE	ITEM	RATE OF APPLICATION (PER COURSE)	PERFORMANCE GRADE
TOP	HMA, 5EML (1.5" LIFT)	165 LBS/SYD	PG 64-22
BASE	HMA, 4EML (2.0" LIFT)	220 LBS/SYD	PG 64-22
	HMA BOND COAT (INCLUDED IN COST OF HMA)	0.10 GAL/SYD	FOR INFO ONLY NOT A PAY ITEM

* AGGREGATE WEAR INDEX (AWI) = 220 MIN (TOP)

NOTE:
HMA BOND COAT MATERIAL PER SECTION 904 OF THE MDOT 2012
STANDARD SPECIFICATIONS FOR CONSTRUCTION

PROPOSED WILTSHIRE ROAD CROSS SECTION (60' R.O.W.) DIVISION II - MORTENSON TO COOLIDGE

NOT TO SCALE



HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

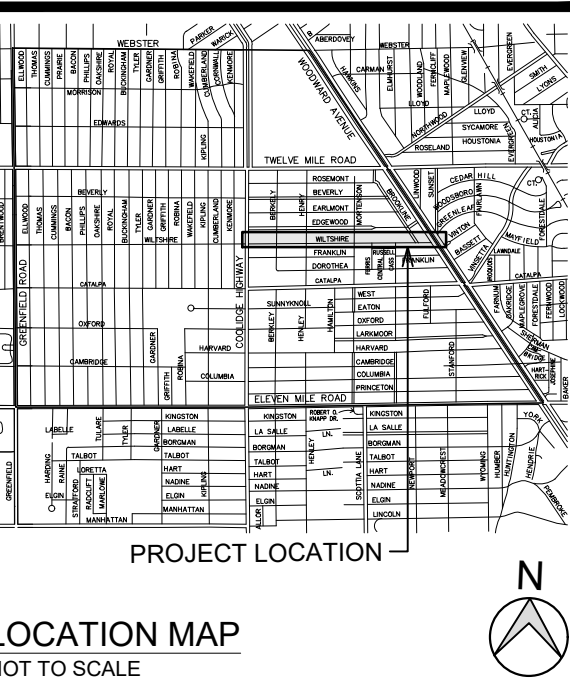
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48303 - 0824

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FAX (2nd. Floor): (248) 454-6359

WEB SITE: www.hrcengr.com



3-23-23	ADDENDUM 1
3-1-23	BID
2-15-23	OWNER REVIEW
DATE	ADDITIONS AND/OR REVISIONS
DESIGNED	C.D.M.
DRAWN	R.P.M.
CHECKED	R.F.D.
APPROVED	



**CITY OF
BERKLEY**

**WILTSHIRE ROAD
WATER MAIN
REPLACEMENT
& PAVEMENT
RECONSTRUCTION**

**PROPOSED ROAD
CROSS SECTIONS**

HRC JOB NO. 20220797	SCALE NOT TO SCALE
DATE February 2023	SHEET NO. CD-2