

1925 Breton Road SE, Suite 100 Grand Rapids, MI 49506

616-454-4286

www.hrcengr.com

ADDENDUM 2 TO PLANS AND SPECIFICATIONS FOR THE OLTHOFF DRIVE ROADWAY EXTENSION

ISSUED: December 6, 2022

HRC Job No. 20210307

This Addendum is issued prior to receipt of bids to provide for certain changes and clarifications to the Specifications and/or the Drawings, as herein specified, and is hereby made a part of the Contract Documents and shall be taken into consideration in preparing the Proposal. All other conditions remain the same.

Receipt of this addendum must be noted in the place provided on the Bid Form and dated December 1, 2022.

ADDENDUM:

PLAN SHEETS:

1. Sheet 4 – Detail Sheet:

- The leaching basin detail was changed to display "Leaching Basin, 72 inch dia" instead of "Leaching Basin, 48 inch dia". The dimensions on the detail changed, as well as the detail label.
- The underdrain detail shows a change in the type of underdrain. Previously, a detail for standard underdrain was shown. This item was changed to an open-graded underdrain.

2. Sheet 6 – Proposed Site Plan:

• The 2 notes pointing to the rubble piles were edited to include the method of payments for removal. The removal will be paid as "Excavation, Earth".

3. Sheet 7 – Removal Sheet:

• The pay item "Hydrant, Relocate, Case 2" was removed from the quantity table. As the note on the plan sheet describes, the pay item for the relocation of this hydrant (Hydrant, Relocate, Case 2) is shown on plan sheet 12.

4. Sheet 10 – Road Improvements Sheet:

- The 48 inch diameter leaching basins were replaced with 72 inch diameter leaching basins. The pay item is "Leaching Basin, 72 inch dia". The invert elevations of the structures are now shown. The structure schedule and quantities have been updated accordingly.
- The pay item "Underdrain, Subgrade, 12 inch" has been replaced by "Underdrain, Subgrade, Open-Graded, 12 inch". See detail.



5. Sheet 11 – Road Improvements Sheet:

- The 48 inch diameter leaching basins were replaced with 72 inch diameter leaching basins, and two more leaching basins were added. The pay item is "Leaching Basin, 72 inch dia". The invert elevations of the structures are now shown. The structure schedule and quantities have been updated accordingly.
- The quantity "Dr Structure Cover, Type K, Modified" was increased by 2 to account for the new leaching basins.
- The pay item "Underdrain, Subgrade, 12 inch" has been replaced by "Underdrain, Subgrade, Open-Graded, 12 inch". See detail.

6. Sheet 14 – Utility Improvements Sheet:

- The updated leaching basins are shown.
- 7. Sheet 15 Utility Improvements Sheet:
 - The updated leaching basins and new basins are shown.

SPECIFICATIONS:

- 1. Section 00010 Table of Contents:
 - Section 11510 "Safety Equipment" was deleted from the Table of Contents.

2. Section 00300 – Proposal:

- The quantity of the pay item "Dr Structure Cover, Type K, Modified" has been increased from 14 to 16. 2 leaching basins were added, requiring 2 new covers.
- The pay item "Leaching Basin, 48 inch dia" has been replaced with "Leaching Basin, 72 inch dia". All 8 leaching basins increased in size and 2 additional leaching basins have been added, making a total quantity of 10.
- The pay item "Underdrain, Subgrade, 12 inch" was removed and replaced with "Underdrain, Subgrade, Open-Graded, 12 inch".
- The quantity of the item "Hydrant, Relocate, Case 2" was reduced from 2 Ea to 1 Ea.

3. Section 00310 – Bid Item Description:

 The pay item "Aggregate Base, 6 inch" description was changed to no longer include the language about the 21AA aggregate piles on site. The construction quantities include enough aggregate (paid for as "Aggregate Base, 6 inch") to not utilize these piles. At this time, the Contractor should not plan on being able to use these piles. However, the contractor should plan on removing the piles after the project. This will be paid as "Excavation, Earth".



- The pay item "Leaching Basin, 48 inch dia" has been replaced with "Leaching Basin, 72 inch dia".
- The pay item "Underdrain, Subgrade, 12 inch" was removed and replaced with "Underdrain, Subgrade, Open-Graded, 12 inch".

4. Section 00800 – General Supplementary Conditions:

• Builders Risk Insurance will not be required for the project. The language about Builders Risk Insurance in Section 00800 has been removed.

5. Section 11510 – Safety Equipment:

• Section 11510 "Safety Equipment" is unneeded and has been removed from the project.

6. Section 02663 – Watermain and Fittings:

- In Section 02663 "Watermain and Fittings", the section discussing the pre-ordering of watermain
 materials has been changed. Originally, the watermain materials were going to be paid for and delivered
 to the City of Muskegon for the Contractor to take custody of. Now, the City has ordered the materials to
 hedge against lead-times, but will not be paying for the materials. Upon the award of the project, the
 Contractor will take ownership of the order and purchase the materials directly from the vendor.
- A "Use-Tax" will not be needed if the materials are purchased by the Contractor.
- A copy of the hydrant order form has already been included in addendum 1, but has been included again for clarity. There should now be three order forms attached: Watermain order form, Gasket order form, and Hydrant order form.

TABLE OF CONTENTS

NUMBER

SECTION NAME

PAGE NUMBER

BIDDING REQUIREMENTS - CONTRACT PROVISIONS

00001	Title Page	1
00010	Table of Contents	1 thru 3
00011	List of Drawings	1 only
00030	Advertisement for Bids	1 thru 2
00120	Instructions to Bidders	1 thru 6
00300	Proposal and Legal Status of Bidder	1 thru 8
00310	Bid Item Description	
00500	Contract	
00610	Performance Bond	1 and 2
00620	Labor and Material Bond	
00630	Maintenance and Guarantee Bond	1 and 2
00700C	General Conditions-Contractor Layout	
00702	Enrolled House Bill No. 5541	1 thru 4
00704	Enrolled House Bill No. 1024	1 thru 4
00800	General Supplementary Conditions	1 thru 7

DIVISION 1 - GENERAL REQUIREMENTS

01000	General Specifications	1 thru 11
01005	Administrative Provisions	1 thru 5
01039	Coordination and Meetings	1 thru 4
01300	Submittals	1 thru 6
01310	Progress Schedules	1 and 2
01400	Quality Control	1 thru 3
01500	Construction Facilities	1 thru 6
01580	Project Signs	1 thru 3
01600	Material and Equipment	1 thru 6
01700	Contract Closeout	1 thru 6
01900	Soil Conditions and Boring Logs	1 only

DIVISION 2 - SITE WORK

02200	Earthwork	1 thru 9
02214	Roadway Excavation, Backfill, and Compaction	1 thru 3
02220	Soil Erosion Control	1 thru 6
02512	HMA Acceptance	1 and 8
02662	Watermains	1 thru 16
02663	Watermain and Fittings	1 thru 6
02671	Hydrant, 6 Inch, Standard	
02735	Leaching Basin, 48 inch dia	
02736	Sewers	1 thru 6

NUMBER

SECTION NAME

PAGE NUMBER

02737	Catch Basin 4 Ft Special Detail1 onl	y
02738	Dr Structure Cover Modified1 onl	
02739	Dr Structure Cover Adj Case 1 Modified1 onl	y
02990	Permits1 onl	y

DIVISION 3 – CONCRETE

(Not Used)

DIVISION 4 – MASONRY

(Not Used)

DIVISION 5 – METALS

(Not Used)

DIVISION 6 - WOOD AND PLASTICS

(Not Used)

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

(Not Used)

DIVISION 8 - DOORS AND WINDOWS

(Not Used)

DIVISION 9 - FINISHES

(Not Used)

DIVISION 10 - SPECIALTIES

(Not Used)

DIVISION 11 – EQUIPMENT

DIVISION 12 - FURNISHINGS

(Not Used)

(Not Used)

DIVISION 13 - SPECIAL CONSTRUCTION

(Not Used)

NUMBER

SECTION NAME

PAGE NUMBER

DIVISION 14 - CONVEYING SYSTEMS

(Not Used)

DIVISION 15 – MECHANICAL

(Not Used)

DIVISION 16 - ELECTRICAL

(Not Used)

END OF SECTION

PROPOSAL FOR OLTHOFF DRIVE INDUSTRIAL PARK ROADWAY EXPANSION PROJECT CITY OF MUSKEGON MUSKEGON COUNTY, MICHIGAN

City of Muskegon 1350 East Keating Avenue Muskegon, MI 49442	Bids Due: December 13, 2022 On or Before 2:00 pm, Local Time HRC Job No. 20210307
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 Muskegon, 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 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 Olthoff Drive Industrial Park Roadway Expansion Project and appurtenant construction in the City of Muskegon of Muskegon 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 Project, and appurtenant work, and agrees to contract with the City of Muskegon to furnish all labor, materials, tools, equipment, facilities and supervision necessary to do all the work specified and prescribed for the City of Muskegon, 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:

BASE BID

2

2

Item	Quantity		Unit Price		Total Cost
1. Mobilization, Max - LSUM	1	a	\$	=	\$
2. Clearing - Acre	0.5	ă	\$	=	\$
3. Sewer, Rem, Less than 24 inch - Ft	6	ă	\$	=	\$
4. Curb and Gutter, Rem - Ft	630	ă	\$	=	\$
5. Fence, Rem - Ft	30	ă	\$	=	\$
6. Embankment, CIP - Cyd	430	ă	\$	=	\$
7. Excavation, Earth - Cyd	4325	ă	\$	=	\$
8. Machine Grading - Sta	33	ă	\$	=	\$
9. Erosion Control, Silt Fence - Ft	1421	ă	\$	=	\$
10. Aggregate Base, 6 inch - Syd	8709	ā	\$	=	\$
11. Sewer, Cl IV, 12 inch, Tr Det A - Ft	421	ā	\$	=	\$
12. Sewer, Cl IV, 12 inch, Tr Det B - Ft / 2	88	ā	\$	=	\$
13. Video Taping Sewer and Culv Pipe - Ft	<u> </u>	ā	\$	=	\$
14. Dr Structure, Tap, 12 inch - Ea	1	ā	\$	=	\$
15. Catch Basin, Removal and Relocation - Ea	4	ā	\$	=	\$
16. Catch Basin, Special, 48 inch dia - Ea	4	ā	\$	=	\$
17. Dr Structure Cover, Adj, Case 1, Modified - Ea	\sim	a	\$	=	\$
18. Dr Structure Cover, Type K. Modified - Ea	(16)	(a)	\$	=	\$
19. Leaching Basin, 72 inch dia - Ea	10	(a)	\$	=	\$
20. Sanitary Manhole Cover - Ea		(a)	\$	=	\$
21. Underdrain, Subgrade, Open-Graded, 12 inch - Ft	876		\$	=	\$
22. HMA Surface, Rem - Syd	4485	a	\$	=	\$
23. HMA, 4EML - Ton	1763	(a)	\$	=	\$
24. Curb and Gutter, Conc, Det F4 - Ft	3346	(a)	\$	=	\$
25. Post, Steel, 3 lb - Ft	120	(a)	\$	=	\$
26. Sign, Type III, Erect, Salv - Ea	2	(a)	\$	=	\$
27. Sign, Type III, Rem - Ea	2	(a)	\$	=	\$
28. Sign, Type IIIB - Sft	43	(a)	\$	=	\$
29. Reflective Panel for Permanent Sign Support, 6 foot		(a)	\$	=	\$
30. Pavt Mrkg, Waterborne, 4 inch, Yellow - Ft	2954	(a)	\$	=	\$
31. Gate Valve and Box, 8 inch - Ea	6	(a)	\$	=	\$
32. Gate and Valve Box, 12 inch - Ea	\frown	(a)	\$	=	\$
33. Hydrant, Relocate, Case 2 - Ea	$\left(\begin{array}{c} 1 \\ 1 \end{array} \right)$	(a)	\$	=	\$
34. Water Main, 8 inch, Cut and Plug - Ea	6	(a)	\$	=	\$
35. Live Tap, 12 inch by 16 inch - Ea	1	@	\$	=	\$
36. Gate Box, Adj, Case 1 - Ea	1	(a)	\$	=	\$
37. Water Main, DI, 12 inch, 1r Det G - Ft	1355	\underline{a}	\$	=	\$
38. Water Main, DI, 8 inch, Tr Det G - Ft	422	\underline{a}	\$	=	\$
39. Bend, 12 inch, 22.5 Degree, DI MJ - Ea	2	\underline{a}	\$	=	\$
40. Bend 12 inch, 45 Degree, DI MJ - Ea	22	\underline{a}	\$	=	\$
41. Hydrant, 6 inch, Standard - Ea	5	\underline{a}	\$	=	Ψ
42. Reducer, 12 inch X 8 inch, DI MJ - Ea	1	$\overset{(a)}{\frown}$	\$	=	·
43. Tee, 12 inch X 6 inch, DI MJ - Ea	5	a	\$	=	¢

44. Tee, 12 inch X 8 inch, DI MJ - Ea	5	@ \$	= \$	
45. Tee, 16 inch X 12 inch, DI MJ - Ea	1	@ \$	= \$	
46. Sanitary Sewer, PVC, 8 inch, Tr Det B2 - Ft	127	ā \$	= \$	
47. Sanitary Sewer, PVC, 12 inch, Tr Det B2 - Ft	791	ā \$	= \$	
48. Sanitary Structure, 48 inch dia - Ea	3	@ \$	\$	
49. Sanitary Structure, Tap, 12 inch - Ea	1	ā \$	= \$	
50. Sanitary Structure Cover, Adj, Case 2 - Ea	1	ā \$	= \$	
Total Amount of Bid			\$	

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 Base 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 Base Bid Price.

No Alternates are proposed.

The Owner reserves the right to award the Base Bid or the Base Bid plus any or individual Alternate or combination of Alternates, depending upon the availability of funds.

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 Muskegon in the amount of Five Percent (5%) of the amount of the Proposal. See Instructions to Bidders – Bid Deposit for more information.

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	Dated
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 Olthoff Drive Industrial Park Roadway Extension Project, we agree to have all work substantially completed by June 1, 2023. Substantial Completion is defined that the facility is ready to use for its intended purpose with all utility systems fully functional.

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

Final Completion with all clean-up and punch-list items shall be complete by June 30, 2023.

The execution of all work and specific constraints as described in the contract drawings and specifications, with particular reference to Section 02030 Sequence of Construction and Special Project Requirements, 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 Muskegon (OWNER). 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 June 1, 2023 until such a time that Substantial Completion is achieved and further if all work is not completed by the Final Completion Date.

BIDS TO REMAIN FIRM

The price stated in this Proposal shall be guaranteed for a period of not less than [XX] 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 [Village, City, Township] of

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 und served o		d hereby designates below the business address t d:	o which all notices, directions or other comm	unications may be
Street				
City				
State			_ Zip Code	
The und	ersigned	d 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 nam	ne, titles	, and home addresses of all persons who are offi	cers or partners in the organization are as fol	lows:
A corpor	ration d	uly organized and doing business under the laws	s of the State of	
NAME	AND T	ITLE	HOME ADDRESS	
Signed a	and Sea	led this	_ day of, 20	÷
			By (Signature)	
			Printed Name of Signer	
			Title	

BID BOND

Ve, 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 shat the OWNER in accordance with the term CONTRACT DOCUMENTS with good prompt payment of labor and material fur enter such contract and give such bond of penalty hereof between the amount speci contract with another party to perform the void, otherwise to remain in full force an	as of such bid, and giv and sufficient surety rnished in the prosecu r bonds, if the Princip fied in said bid and su e work covered by sa d effect.	ve such bond or bonds as m for the faithful performance ation thereof, or in the even bal shall pay to the OWNEF uch larger amount for which id bid, then the obligation of	ay be specified in the e of such contract and for the t of the failure of the Principal to R the difference not to exceed the h the OWNER may in good faith of the Principal shall be null and				
Signed and sealed this	day of _						
(Witness)		(Principal) (Title)	(Seal)				
(Witness)		(Surety)					
		(Title)					
	END OF S	ECTION					

SECTION 00310

BID ITEM DESCRIPTION

PART 1 GENERAL

1.1 SCOPE

- A. This Section describes the method of measurement and basis of payment for several items of Work included in the Contract and specified in the Proposal.
 - 1. The Contractor shall provide all labor, material, tools, equipment and services required to complete the Work specified herein and indicated on the Plans and all other items necessary to complete the job, whether specifically mentioned or implied.
 - 2. Payment will only be made for the items listed in the Proposal Form.
- B. The Owner will make no allowances for items not included in the Proposal Form.

1.2 ITEMS OF THE PROPOSAL

Mobilization, Max (up to 10%)

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, 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 ten (10) percent** of the Total Amount of Bid minus the amount for this pay item.

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 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.

Clearing

This bid item shall be paid for at the Contract Unit Price per **acre**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

Sewer, Rem, Less than 24 inch

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

Curb and Gutter, Rem

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

Fence, Rem

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

Embankment, CIP

This bid item shall be paid for at the Contract Unit Price per **cubic yard**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

Excavation, Earth

This bid item shall be paid for at the Contract Unit Price per **cubic yard**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

Machine Grading

This bid item shall be paid for at the Contract Unit Price per **station**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Erosion Control, Silt Fence

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Work included and required by this item are described herein and on the plans.

This work will be performed at locations where required and as shown on the construction drawings.

Aggregate Base, 6 inch

This bid item shall be paid for at the Contract Unit Price per **square yard**. Measurement and payment and the Work included and required by this item are described herein and on the plans.

This work will be performed at locations where required and as shown on the construction drawing.

Sewer, Cl IV, 12 inch, Tr Det A

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

Sewer, Cl IV, 12 inch, Tr Det B

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

Video Taping Sewer and Culv Pipe

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Dr Structure, Tap, 12 inch

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Catch Basin, Removal and Relocation

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, and in the plans.

This work will be performed at locations where required and as shown on the construction drawings.

Catch Basin, Special, 48 inch dia

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02737.

This work will be performed at locations where required and as shown on the construction drawings.

Dr Structure Cover, Adj, Case 1, Modified

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and in section 02739.

Dr Structure Cover, Type K, Modified

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and in section 02738.

This work will be performed at locations where required and as shown on the construction drawings.

Leaching Basin, 72 inch dia

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in a section 02735.

This work will be performed at locations where required and as shown on the construction drawings.

Sanitary Manhole Cover

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein and on the plans.

This work will be performed at locations where required and as shown on the construction drawings.

Underdrain, Subgrade, Open-Graded, 12 inch

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawing.

HMA surface, Rem

This bid item shall be paid for at the Contract Unit Price per **square yard**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

HMA, 4EML

This bid item shall be paid for at the Contract Unit Price per **ton**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Curb and Gutter, Conc, Det F4

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Post, Steel, 3 lb

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Sign, Type III, Erect, Salv

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Sign, Type III, Rem

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Sign, Type IIIB

This bid item shall be paid for at the Contract Unit Price per **square foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

Reflective Panel for Permanent Sign Support, 6 foot

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Pavt Mrkg, Waterborne, 4 inch, Yellow

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Gate Valve and Box, 8 inch

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Gate Valve and Box, 12 inch

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Hydrant, Relocate, Case 2

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

Water Main, 8 inch, Cut and Plug

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Live Tap, 12 inch by 16 inch

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Gate Box, Adj, Case 1

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Water Main, DI, 12 inch, Tr Det G

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

This work will be performed at locations where required and as shown on the construction drawings.

Water Main, DI, 8 inch, Tr Det G

This bid item shall be paid for at the Contract Unit Price per **lineal foot**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

Bend, 12 inch, 22.5 degree, DI MJ

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

This work will be performed at locations where required and as shown on the construction drawings.

Bend, 12 inch, 45 degree, DI MJ

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

This work will be performed at locations where required and as shown on the construction drawings.

Hydrant, 6 inch, Standard

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02671.

This work will be performed at locations where required and as shown on the construction drawings.

Reducer, 12 inch X 8 inch, DI MJ

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

This work will be performed at locations where required and as shown on the construction drawings.

Tee, 12 inch, X 6 inch, DI MJ

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

Tee, 12 inch, X 8 inch, DI MJ

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

This work will be performed at locations where required and as shown on the construction drawings.

Tee, 16 inch, X 12 inch, DI MJ

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans, and in section 02663.

This work will be performed at locations where required and as shown on the construction drawings.

Sanitary Sewer, PVC, 8 inch, Tr Det B2

This bid item shall be paid for at the Contract Unit Price per **lineal feet**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Sanitary Sewer, PVC, 12 inch, Tr Det B2

This bid item shall be paid for at the Contract Unit Price per **lineal feet**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings

Sanitary Structure, 48 inch dia

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

Sanitary Structure, Tap, 12 inch

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein, on the plans and according to the MDOT 2020 Standard Specifications for Construction.

This work will be performed at locations where required and as shown on the construction drawings.

Sanitary Structure Cover, Adj, Case 2

This bid item shall be paid for at the Contract Unit Price per **each**. Measurement and payment and the Work included and required by this item are described herein and on the plans.

This work will be performed at locations where required and as shown on the construction drawings.

END OF SECTION

SECTION 00800

GENERAL SUPPLEMENTARY CONDITIONS

PART 1 INSURANCE

- 1.1 Insurance Required of the Contractor
 - A. Prior to commencement of the work, the Contractor shall purchase and maintain during the term of the project such insurance as will protect him, the Owner, and the Engineer from claims arising out of the work described in this contract and performed by the Contractor, Subcontractor(s) or Sub-Subcontractor(s) consisting of the below listed policies.
- 1.2 Worker's Compensation Insurance
 - A. Worker's Compensation insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation Statutes of the states in which work is conducted under this contract; disability benefit laws, if any; or Federal compensation acts such as U. S. Longshoremen or harbor Workers', maritime Employment, or Railroad Compensation Act(s), if applicable.
 - B. Self-insurance plans approved by the regulatory authorities in the state in which work on this project is performed are acceptable.
- 1.3 Comprehensive General Liability
 - A. A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:
 - 1. All premises and operations
 - 2. Explosion, collapse and underground damage
 - 3. Contractor's Protective coverage for independent contractors or subcontractors employed by him.
 - 4. Contractual Liability for the obligation assumed in the Indemnification or Hold Harmless agreement found hereinafter.
 - 5. The usual Personal Injury Liability endorsement with no exclusions pertaining to employment.
 - 6. Products and Completed Operations coverage. This coverage shall extend through the contract guarantee period.
 - B. Additional Insured Requirements:
 - 1. Coverage shall be Primary and Non-contributory and Waiver of Subrogation applies.
 - 2. The policy shall include an endorsement which includes the following as additional insured's:
 - a. The Owner, their council, members, Board members, public officials, consultants, agents, and employees
 - b. The "Engineer"
 - Hubbell, Roth & Clark, Inc.

Bloomfield Hills, Michigan Their owners, directors, officers, consultants, agents, and employees

- 1.4 Comprehensive Automobile Liability
 - A. A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles and including Michigan "No Fault" coverage.
 - B. In light of standard policy provisions concerning (a) loading and unloading and (b) definitions pertaining to motor vehicles licensed for road use vs. unlicensed or self-propelled construction equipment, it is strongly recommended that the Comprehensive General Liability and the Comprehensive Auto Liability be written by the same insurance carrier, though not necessarily in one policy.
 - C. Additional Insured Requirements:
 - 1. Coverage shall be Primary and Non-contributory
 - 2. The policy shall include an endorsement which includes the following as additional insured's:
 - a. The Owner, their council, members, Board members, public officials, consultants, agents, and employees
 - b. The "Engineer" Hubbell, Roth & Clark, Inc. Bloomfield Hills, Michigan Their owners, directors, officers, consultants, agents, and employees
- 1.5 Owner's & Contractors Protective Liability Policy
 - A. The Contractor shall purchase for the Owner, a separate Owner's Protective Liability policy to protect the Owner, the Engineer, their consultants, agents, employees and such public corporations in whose jurisdiction the work is located, for their contingent liability for work performed by the Contractor, the Subcontractor(s) or the Sub-Subcontractor(s) under this contract.
 - B. Purchase the Owner's Protective Liability policy in the Owner's name.
 - C. Additional Insured Requirements:

a.

- 1. The policy shall include an endorsement which includes the following as additional insured's:
 - The "Engineer" Hubbell, Roth & Clark, Inc. Bloomfield Hills, Michigan Their owners, directors, officers, consultants, agents, and employees
- 1.6 Umbrella or Excess Liability
 - A. The Contractor is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested.

- B. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to the Contractor's general liability and to his automobile liability insurance.
- C. Additional Insured Requirements:
 - 1. Coverage shall be Primary and Non-contributory and Waiver of Subrogation applies.
 - 2. The policy shall include an endorsement which includes the following as additional insured's:
 - a. The Owner, their council, members, Board members, public officials, consultants, agents, and employees
 - b. The "Engineer"
 Hubbell, Roth & Clark, Inc.
 Bloomfield Hills, Michigan
 Their owners, directors, officers, consultants, agents, and employees
- 1.7 Railroad Protective Liability
 - A. Where such an exposure exists, as determined by the Owner, the Contractor will provide coverage in the name of each railroad company having jurisdiction over rights-of-way across which work under the contract is to be performed.
 - B. Additional Insured Requirements:
 - 1. Coverage shall be Primary and Non-contributory and Waiver of Subrogation applies.
 - 2. The policy shall include an endorsement which includes the following as additional insured's:
 - a. The Owner, their council, members, Board members, public officials, consultants, agents, and employees
 - b. The "Engineer"
 - Hubbell, Roth & Clark, Inc.
 - Bloomfield Hills, Michigan

Their owners, directors, officers, consultants, agents, and employees

1.8 Limits of Liability

A.	The required limits of liability for insurance coverage shall be not less than the following:				
	1. Workers' Compensation				
	Coverage A - CompensationStatutory				
	Coverage B - Employer's Liability\$500,000				
	2. Comprehensive General Liability				
	Bodily Injury and Property Damage\$1,000,000	Each Occurrence			
	Combined Single Limit\$2,000,000	Per Job Aggregate			
	\$1,000,000	Completed Operations Aggregate			
	3. Comprehensive Automobile Liability				
	Bodily Injury and Property Damage\$1,000,000	Each Accident			
	Combined Single Limit				
	4. Owner's Protective				
	Bodily Injury and Property Damage\$1,000,000	Per Occurrence			
	Combined Single Limit\$1,000,000	Aggregate			
	5. Builder's Risk & Installation Floater	Cost to replace at time of loss			
	6. Umbrella or Excess Liability \$2,000,000	Per Occurrence			

.....\$2,000,000 Aggregate

7. Insurance - Other Requirements

- a. Notice of Cancellation or Intent Not to Renew: Policies will be endorsed to provide that at least 30 days written notice shall be given to the Owner and to the Engineer, of cancellation of, material change, or intent not to renew (see sample endorsements which follow this Section).
- 1.9 Evidence of Coverage
 - A. Prior to commencement of the work, the Contractor shall furnish to the Owner, Certificates of Insurance in force on the Owner's Form of Certificate provided.
 - B. Other forms of Certificate are acceptable only if (1) they include all of the items prescribed in the Owner's Form of Certificate, including agreement to cancellation provisions outlined herein, (2) the Engineer's Project Identification Number, and (3) they have written approval of the Owner and the Engineer.
 - C. The Owner reserves the right to request complete copies of policies if deemed necessary to ascertain details of coverage not provided by certificates.
 - D. Such policy copies shall be "Originally Signed Copies," and so designated.
 - 1. Insurance Required for the Contractor
 - a. Workers' Compensation and Employers' Liability
 - b. Comprehensive General Liability-including:
 - 1) All premises and operations.
 - 2) Explosion, collapse and underground damage.
 - 3) Contractor's Protective.
 - 4) Contractual Liability for obligations assumed in the
 - Indemnification-Hold Harmless Agreement of this Contract.
 - 5) Personal Injury Liability.
 - 6) Products and Completed Operations
 - c. Comprehensive Automobile Liability including owned, non-owned and hired vehicles and Michigan "No Fault" coverage.
 - d. Umbrella or Excess Liability.
 - e. Builders Risk Installation Floater
 - f. Railroad Protective Liability
 - 2. Insurance Required for the Owner
 - a. Owners' and Contractor's Protective Liability Policy which names as additionally insured the Engineer, their consultants, agents, employees and such public corporations in whose jurisdiction the work is located.
 - b. Refer to sample endorsements which follow this Section.
- 1.10 Qualification of Insurers
 - A. In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State of Michigan and shall have a financial rating no lower than XI and a policyholder's service rating no lower than A as listed in A. M. Best's Key Rating Guide, current edition.

- B. Companies with ratings lower than A;XI will be acceptable only upon written consent of the Owner.
- 1.11 Contract Security
 - A. If the Owner is a public entity, the Contractor shall furnish a surety bond (form attached) in an amount at least equal to 100 percent of the contract price as security for the faithful performance of this contract. The Contractor shall furnish, also, a separate surety bond (form attached) in an amount at least equal to 100 percent of the contract price as security for the payment of all persons performing labor on the project under this contract, and furnishing materials in connection with this contract. The surety on each such bond shall be a duly authorized surety company satisfactory to the Owner.
 - B. Regardless of whether the Owner is or is not a public entity, the Contractor shall furnish a Maintenance and Guarantee Bond (form attached) covering all work under this contract. The guarantee is to cover a period of one year subsequent to the date of the final estimate, unless otherwise specified.
 - C. Surety Companies providing and executing Surety and Guarantee Bonds shall appear on the United States Treasury Departments most current list, Circular 570, as holding certificates of authority as acceptable sureties on federal bonds. The penal sum of such bonds shall not exceed the a company's limitation as stated therein. A surety company shall be licensed in the State in which it provides a bond and in the State where the contract work is to be performed.
- 1.12 Indemnification
 - A. The contractor agrees to indemnify, defend, and save harmless the Owner and the Engineer, their consultants, agents, and employees, from and against all loss or expense (including costs and attorney's fees) by reason of liability imposed by law upon the Owner and the Engineer, their consultants, agents, and employees for damages because of bodily injury, including death at any time resulting there from, sustained by any person or persons or on account of damage to property, including loss of use thereof, arising out of or in consequence of the performance of this work, whether such injuries to persons or damage to property is due, or claimed to be due, to the negligence of the contractor, his subcontractors, the Owner, the Engineer, and their consultants, agents, and employees, **except** only such injury or damage as shall have been occasioned by the sole negligence of the Owner, the Engineer, or their agents, employees or consultants.
 - B. The Contractor also agrees to indemnify, defend and save harmless the Owner and the Engineer, their owners, directors, Board members, officers, directors, officials, and council members, consultants, agents and employees, from and against any and all loss or expense (including costs and attorney's fees) for any and all claims or allegations of supervision, inspection or observation activities or services which may arise out of, or in consequence of, the performance of this work.

PART 2 PART 2 – NOT USED

PART 3 PART 3 – NOT USED

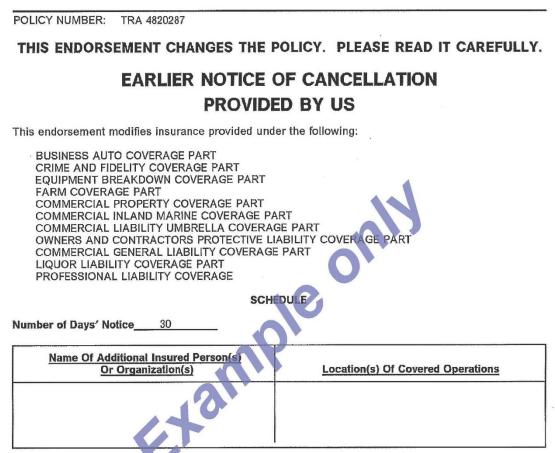
END OF SECTION

HIS CERTIFICATE IS ISSUED AS A M ERTIFICATE DOES NOT AFFIRMATI ELOW. THIS CERTIFICATE OF INSU EPRESENTATIVE OR PRODUCER, A IPORTANT: If the certificate holder i he terms and conditions of the policy ertificate holder in lieu of such endo DUCER urance Agency 724 Any Street (248) 666-6666	ATTE VELY RANC AND T is an <i>I</i> y, cert	ER OF OR N CE DO HE C ADDIT	NEGATIVELY AMEND, EX DES NOT CONSTITUTE A ERTIFICATE HOLDER. TIONAL INSURED, the po olicies may require an en	ND CONFERS NO R TEND OR ALTER T CONTRACT BETW licy(ies) must be en	RIGHTS UPON HE COVERAGEEN THE ISS	ANCE I THE CERTIFICATE HO GE AFFORDED BY THE UING INSURER(S), AUT IBROGATION IS WAIVE	POLICIES			
ERTIFICATE DOES NOT AFFIRMATI ELOW. THIS CERTIFICATE OF INSU EPRESENTATIVE OR PRODUCER, A APORTANT: If the certificate holder i he terms and conditions of the policy ertificate holder in lieu of such endo DUCER urance Agency 724 Any Street (248) 666-6666 D. Box 2067	VELY RANC AND T is an <i>I</i> /, cert	OR N CE DO HE C ADDIT	NEGATIVELY AMEND, EX DES NOT CONSTITUTE A ERTIFICATE HOLDER. TIONAL INSURED, the po olicies may require an en	TEND OR ALTER T CONTRACT BETW	HE COVERA EEN THE ISS	GE AFFORDED BY THE UING INSURER(S), AUT	POLICIES			
te terms and conditions of the policy ertificate holder in lieu of such endo DUCER urance Agency 724 Any Street (248) 666-6666 D. Box 2067	, cert	tain p	olicies may require an en				D, subject to			
DUCER urance Agency 724 Any Street (248) 666-6666 D. Box 2067					ment on this	certificate does not cor	nfer rights to th			
724 Any Street (248) 666-6666 D. Box 2067					ce Agent na	ime				
D. Box 2067		Insurance Agency				PHONE (A/C, No. Ext): 248 555-5555 FAX (A/C, No. Ext): 248 111-1111				
meCity, MI 48037-2067	P.O. Box 2067			E-MAIL ADDREss: InsuranceAgent@InsuranceGroup.com PRODUCER CUSTOMER ID #:						
							NAIC #			
Company ABC		INSURER A : Insurance Company 1								
2654 Street Name				INSURER B : Insurance Company 2						
AnyCity, MI 48183			INSURER C :							
				INSURER E : INSURER F :						
VERAGES CE	RTIFIC	CATE	NUMBER:	I moonen l'u	REVISION NUMBER:					
HIS IS TO CERTIFY THAT THE POLICIES O	OF INSU	URAN	CE LISTED BELOW HAVE BEI		SURED NAME	ABOVE FOR THE POLICY				
IDICATED. NOTWITHSTANDING ANY REQ ERTIFICATE MAY BE ISSUED OR MAY PE XCLUSIONS AND CONDITIONS OF SUCH	RTAIN, POLICI	, THE I IES. LI	INSURANCE AFFORDED BY T IMITS SHOWN MAY HAVE BE	THE POLICIES DESCR EN REDUCED BY PAIL	IBED HEREIN I: O CLAIMS.	T WITH RESPECT TO WHIC S SUBJECT TO ALL THE TE	CH THIS RMS,			
TYPE OF INSURANCE		SUBR WVD		POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMIT	1			
GENERAL LIABILITY	X	X	MPA0000042433S	11/17/2014	11/17/2015	EACH OCCURRENCE DAMAGE TO RENTED	\$1,000,000			
X COMMERCIAL GENERAL LIABILITY						PREMISES (Ea occurrence)	\$100,000			
CLAIMS-MADE X OCCUR						MED EXP (Any one person)	\$5,000			
X X,C,U	-					PERSONAL & ADV INJURY	\$1,000,000			
X Contractual	-					GENERAL AGGREGATE	\$2,000,000			
GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	\$2,000,000			
POLICY X PRO- JECT LOC	x	X	BA00000042434S	11/17/2014	11/17/2015	COMBINED SINGLE LIMIT (Ea accident)	\$ ^{\$} 1,000,000			
X ANY AUTO						BODILY INJURY (Per person)	\$			
ALL OWNED AUTOS						BODILY INJURY (Per accident)	\$			
SCHEDULED AUTOS						PROPERTY DAMAGE	\$			
X HIRED AUTOS						(Per accident)	\$			
X NON-OWNED AUTOS							\$			
X UMBRELLA LIAB X OCCUR	X	X	CMB00000042435S	11/17/2014	11/17/2015	EACH OCCURRENCE	\$2,000,000			
EXCESS LIAB CLAIMS-MAD	17	1	0111000000424000	1011/2014	11/17/2010	AGGREGATE	\$2,000,000			
DEDUCTIBLE						s see the Wester Street	\$			
RETENTION \$	X						\$			
WORKERS COMPENSATION		X	WC0001100555	05/01/2014	04/30/2015	X WC STATU- TORY LIMITS OTH-				
AND EMPLOYERS' LIABILITY						E.L. EACH ACCIDENT	\$500,000			
OFFICER/MEMBER EXCLUDED?	N/A					E.L. DISEASE - EA EMPLOYEE	\$500,000			
If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	\$500,000			
Installation	Х		MPA0000042433S	11/17/2014	11/17/2015					
Floater						\$1,000 deductible				
Installation		(Attach								
nicipality Name, their council, member	rs, boa	ard me	embers, public officials, co							
ease refer to attached Endorsements e	viden	cing t	he change of policy.)							
				CANCELLATION						
RTIFICATE HOLDER				SHOULD ANY OF	THE ABOVE DE	SCRIBED POLICIES BE CA	NCELLED BEFO			
							THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.			
Municipality Name				THE EXPIRATION	DATE THEREO	P, NOTICE WILL BE DELIVE				
Municipality Name 18500 Street Name				ACCORDANCE WI	TH THE POLIC	Y PROVISIONS.				
Municipality Name				ACCORDANCE WI	TH THE POLIC	Y PROVISIONS.				
Municipality Name 18500 Street Name				ACCORDANCE WI	TH THE POLIC	y provisions.				
Municipality Name 18500 Street Name				ACCORDANCE WI	TH THE POLIC	Y PROVISIONS.				
Municipality Name 18500 Street Name				ACCORDANCE WI		Y PROVISIONS.	TURE			
Municipality Name 18500 Street Name AnyCity, MI 48025	ie AC	ORD	name and logo are regist	ACCORDANCE WI	TH THE POLIC	Y PROVISIONS.	TURE			



AMS 25.3 (2009/09)

2 of 2 #S264726/M258177



(If no entry appears above, information required to complete this Schedule will be shown in the Declarations as applicable to this endorsement.)

For any statutorily permitted reason other than nonpayment of premium, the number of days required for notice of cancellation, as provided in paragraph **2.** of either the CANCELLATION Common Policy Condition or as amended by an applicable state cancellation endorsement, is increased to the number of days shown in the Schedule above.

Copyright, Insurance Services Office, Inc., 1992

IL 70 35 06 08

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY CG 20 37 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location And Description Of Completed Operations
	0
Information required to complete this Schedule, if not s	hown above, will be shown in the Declarations.

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

- 1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
- 2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to Section III – Limits Of Insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

- 1. Required by the contract or agreement; or
- 2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

CG 20 37 04 13

© Insurance Services Office, Inc., 2012

Page 1 of 1

COMMERCIAL GENERAL LIABILITY CG 20 33 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – AUTOMATIC STATUS WHEN REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

- A. Section II Who Is An Insured is amended to include as an additional insured any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:
 - 1. Your acts or omissions; or
 - 2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured:

- 1. Only applies to the extent permitted by law; and
- 2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

- "Bodily injury" "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:
 - a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
 - **b.** Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

CG 20 33 04 13

© Insurance Services Office, Inc., 2012

Page 1 of 2

- 2. "Bodily injury" or "property damage" occurring after:
 - a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
 - b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.
- C. With respect to the insurance afforded to these additional insureds, the following is added to Section III - Limits Of Insurance:

The most we will pay on behalf of the additional insured is the amount of insurance:

- 1. Required by the contract or agreement you have entered into with the additional insured; or
- 2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

Page 2 of 2

© Insurance Services Office, Inc., 2012

CG 20 33 04 13

ACOPD INSU	RANCE BINDER				- SPI	REXC		DA	TE
	INSURANCE CONTRACT, SUBJE	0.		ONG	CUON			06/18/14	IS FORM
	o, Ext): 248-555-5555		HE CONDITI	UNS	SHOW	N ON THE R	BINDER		IS FORM
(A/C, N FAX (A/C, N	o, Ext): 248-333-3333			Com	namu of	Amor		ER83730	
		Joen	EFF	ECTIV	E			EXPIRATION	-
Insurance Company Nan	ne		DATE	1	Jul 24	TIME X AM		E	X 12:01
Any Street		06/	18/14	12	:01	PM	08/18/14		NOC
City, State Zip			THIS BINDER	IS ISS	JED TO E	XTEND COVERAGE	I IN THE ABOV	E NAMED CO	
CODE: 38-3112729	SUB CODE:					and the second se	al a second a second		
AGENCY CUSTOMER ID: 7430						CLES/PROPERTY	(Including Loca	ition)	
Owner's Name Any Street SomeCity, MI 480	01	Pr	oject Desci	ripti	on				
COVERAGES							LIMI	rs	
TYPE OF INSURANCE	COVERAGE	E/FORMS				DEDUCTIBLE	COINS %	1	OUNT
BASIC BROAD SPEC					~	1	[
GENERAL LIABILITY	Owners & Contractors Protect	tive				EAC OCCURRI		\$ 1,000,	000
COMMERCIAL GENERAL LIABILITY	Liability			~		DAY GE TO RENTED PREMI		S	
CLAIMS MADE X OCCUR						MED EXP (Any o	which have a first	S	
X OCP						PERSONAL & AU	in the second second	\$	
						GENERAL AGGE	and the second second	\$ 1,000,	000
UTOMOBILE LIABILITY	RETRO DATE FOR CLAIMS MADE:					PRODUCTS - CO		s	
						COMBINED SINC		s	
ANY AUTO						BODILY INJURY		s	
ALL OWNED AUTOS			-			BODILY INJURY		s	
SCHEDULED AUTOS			<u> </u>			PROPERTY DAMAGE MEDICAL PAYMENTS			
HIRED AUTOS NON-OWNED AUTOS						PERSONAL INJU	Sector General Sector	s s	
						UNINSURED MO	CONTRACTOR OFFICE	s	
				and the second second				s	
UTO PHYSICAL DAMAGE DEDUCTIBLE	ALL VEHICLES	ED VEHICLES	5			ACTUAL C	ASH VALUE		
COLLISION:						STATED A	MOUNT	s	
OTHER THAN COL:						OTHER			
ARAGE LIABILITY						AUTO ONLY - EA	ACCIDENT	s	
ANY AUTO						OTHER THAN AL	JTO ONLY:		
						EACH	ACCIDENT	s	
						A	GGREGATE	s	
XCESS LIABILITY						EACH OCCURRE	ENCE	\$	
UMBRELLA FORM						AGGREGATE		\$	
OTHER THAN UMBRELLA FORM	RETRO DATE FOR CLAIMS MADE:					SELF-INSURED	THREE AND	s	
						WC STATU	JTORY LIMITS		
WORKER'S COMPENSATION AND						E.L. EACH ACCI	DENT	s	
EMPLOYER'S LIABILITY						E.L. DISEASE - E		s	
N	a la cale a c					E.L. DISEASE - P	POLICY LIMIT	\$	
PECIAL Named Insured to ind ONDITIONS/ Owners Name						FEES		\$	
	& the Engineer, their					TAXES		\$	
(See attached Spec C	Conditions/Other Covs page.)					ESTIMATED TOT	AL PREMIUM	\$	11-11-
IAME & ADDRESS		11		1	1		<i>ũ</i>		
Contractors Name			MORTGAGEE			ITIONAL INSURED			
SomeStreet		LOAN	OSS PAYEE		1 00				
AnyCity State	7in	LOAN							
Anyony State			ORIZED REPRESE	ENTAT	IVE				
		M	ichael (2	Ten	and			
		1 .	interest c	•••		100 C			

ACORD 75 (2001/01) 1 of 3 #5069 NOTE: IMPORTANT STATE INFORMATION ON REVERSE SIDE MSB © ACORD CORPORATION 1993



This Company binds the kind(s) of insurance stipulated on the reverse side. The Insurance is subject to the terms, conditions and limitations of the policy(ies) in current use by the Company.

This binder may be cancelled by the Insured by surrender of this binder or by written notice to the Company stating when cancellation will be effective. This binder may be cancelled by the Company by notice to the Insured in accordance with the policy conditions. This binder is cancelled when replaced by a policy. If this binder is not replaced by a policy, the Company is entitled to charge a premium for the binder according to the Rules and Rates in use by the Company.

Applicable in California

When this form is used to provide insurance in the amount of one million dollars (\$ 000,000) or more, the title of the form is changed from "Insurance Binder" to "Cover Note".

Applicable in Delaware

The mortgagee or Obligee of any mortgage or other inctrument given for the purpose of creating a lien on real property shall accept as evidence of insurance a written binder issued by an authorized insurer or its agent if the binder includes or is accompanied by: the name and address of the borrower; the name and address of the lender as loss payee; a description of the insured real property; a provision that the binder may not be canceled within the term of the binder unless the lender and the insured borrower receive written notice of the cancellation at least ten (10) days prior to the cancellation; except in the case of a renewal of a policy subsequent to the closing of the loan, a paid receipt of the full amount of the applicable premium, and the amount of insurance coverage.

apter 21 Title 25 Paragraph 2119

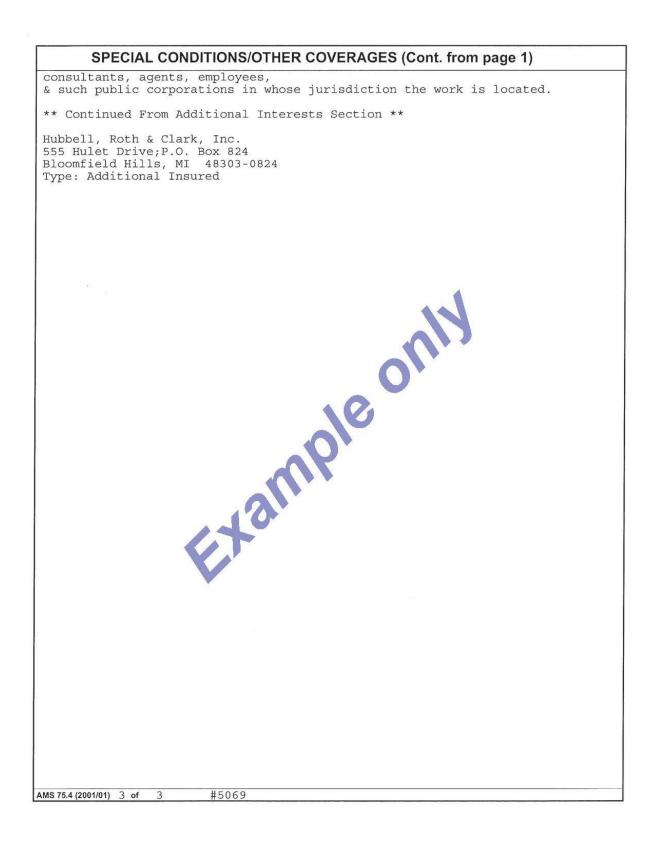
Applicable in Florida

Except for Auto Insurance coverage, no notice of cancellation or nonrenewal of a binder is required unless the duration of the binder exceeds 60 days. For auto insurance, the insurer must give 5 days prior notice, unless the binder is replaced by a policy or another binder in the same company.

Applicable in Nevada

Any person who refuses to accept a binder which provides coverage of less than \$1,000,000.00 when proof is required: (A) Shall be fined not more than \$500.00, and (B) is liable to the party presenting the binder as proof of insurance for actual damages sustained therefrom.

ACORD 75 (2001/01) 2 of 3 #5069



COMMERCIAL GENERAL LIABILITY CG 20 31 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – ENGINEERS, ARCHITECTS OR SURVEYORS

This endorsement modifies insurance provided under the following:

OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART

- A. Section II Who Is An Insured is amended to include as an additional insured any architect, engineer or surveyor engaged by you, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by your acts or omissions or the acts or omissions of those acting on your behalf:
 - 1. In connection with your premises; or

2. In the performance of your ongoing operations. However:

- 1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
- If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.
- **B.** With respect to the insurance afforded to these additional insureds, the following additional exclusion applies:

This insurance does not apply to "bodily injury" or "property damage" arising out of the rendering of or the failure to render any professional services by or for you, including:

 The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or 2. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage" involved the rendering of or the failure to render any professional services by or for you.

C. With respect to the insurance afforded to these additional insureds, the following is added to Section III – Limits Of Insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

- 1. Required by the contract or agreement; or
- 2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

© Insurance Services Office, Inc., 2012

Page 1 of 1

CITY OF MUSKEGON SPECIAL SPECIFICATION FOR WATERMAIN & FITTINGS

1 of 11

HRC/LNM

City of Muskegon

DESCRIPTION:

This special provision defines and describes the methods and materials required to place new watermain and fittings.

MATERIALS:

MATERIALS TO BE ORDERED BY CITY: Watermain pipe, gaskets and hydrants shall be pre-ordered by the City of Muskegon, but not purchased. Once the project has been awarded, the materials may be purchased from the vendor by the contractor for installation on the project. Once the project has been awarded, the contractor shall purchase the pre-ordered material and is fully responsible for the material. The City will provide a copy of the invoices for the material within the proposal. Any required materials for the project that are not included on the invoices will need to be ordered by the contractor.

WATERMAIN: Watermain pipe shall be cement lined ductile iron class 52 with push on joints. Pipe shall be restrained according to the attached PIPE RESTRAINT SCHEDULE with mechanical joints or push-on joints using field lock gaskets. All pipe joints shall be provided with electrical conductivity connections. All watermain shall be NSF 61 approved.

RETAINER GLANDS: Retainer gland Megalug series 1100 or approved equal shall be used for all mechanical joint pipe and fittings. The joint restraint ring and its wedging components shall be made of grade 60-42-10 ductile iron conforming to ASTM A536-84. The wedges shall be ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell conforming to ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53 of the latest revision. Torque limiting twist-off nuts shall be used to insure proper actuation of the restraining wedges. The Retainer Gland shall utilize standard tee head bolts and gasket conforming to ANSI A21.11. The Contractor shall submit to the Engineer a shop drawing or sample for Engineer approval

FITTINGS: Sleeves, Tees, Bends and reducer shall be ductile iron cement lined with mechanical joints conforming to, AWWA C110 and AWWA C111. All mechanical joints shall be restrained with retaining glands.

ELECTRICAL CONDUCTIVITY CONNECTIONS: One of the methods described below must be used to ensure electrical conductivity.

(a) Serrated Silicon Bronze Wedges

Two per joint for 3" through 12" pipe, four for larger pipe. Each wedge is to be driven into the opening between the plain end and the bell until snug. When four wedges are used, they are inserted side by side, in pairs. Wedges can be used with push-on joints only.(b) Cable or Strap Bond Conductor

Installation of a cable or strap bond conductor across the joints of push-on and mechanical joint pipe and fittings. The copper cable or strap shall be capable of carrying 150 amps and be of sufficient flexibility to withstand ground and pipe movement after installation.

(c) Conductive Push-On Gaskets

These gaskets may be used in lieu of the wedges. Metal contact strips which are molded or inserted into the gasket must insure positive electrical contact between pipes. A thorough cleaning of the gasket seating surface should be performed prior to assembly

WATERMAIN SPECIFICATION REFERANCE:

Ductile Iron, Push-On Joint, 3" – 24", AWWA C151 Push-On Joint Detail, AWWA C111 Ductile Iron, Mechanical Joint, 3" – 24", AWWA C151 Mechanical Joint Detail, AWWA C111 Cement Lining, AWWA C104. (Standard Thickness) Ductile Iron Pipe Wall Thickness Determination, AWWA C150 Ductile Iron Flanged Joint Pipe, 3" – 24", AWWA C151 and AWWA C110 Cast Iron and Ductile Iron Fittings, AWWA C110 Mechanical Joint Fittings, AWWA C110 and AWWA C111 Push-On Joint Fittings, AWWA C110 and AWWA C111 Flanged Fittings, AWWA C110 Flanges, ASA-B16.1 Standard Class 125 Copper Pipe, ASTM Spec B88-55 "Type K" Retainer Glands, Megalug Series 1100 Fire Hydrants, AWWA C502

CONSTRUCTION METHODS:

WATERMAIN PUSH ON JOINT ASSEMBLY: It is essential that the gasket groove be clean and free of foreign matter prior to lubrication and gasket installation. Wire brushing, wiping or flushing may be required.

The cleaned gasket groove shall be lubricated to make gasket installation easier and to assist in the proper positioning of the gasket. The gasket must be correctly positioned within the groove. Check with fingers to be sure of correct placement. Lubricate the gasket over its entire inner surface; as well as to the level of the plain end. The joint should be assembled with both pipes in reasonably straight alignment. Any deflection should be made after the joint is assembled.

On any field cut pipe, the outside edge must be beveled and smoothed as any sharp

corner may cause gasket damage. Straight alignment is especially important when

assembling field cut pipe. Field inspection by the Engineer must be accomplished before a field cut pipe may be joined.

During cold weather installations, keep gaskets warm prior to placement within the bell, to reduce their stiffness.

Payment for Watermain Push on Joint Assembly shall be included with the payment for each particular size of watermain and fittings installed.

WATERMAIN MECHANICAL JOINT ASSEMBLY: The inside of the bell and the plain end of the pipe must be thoroughly cleaned of all foreign matter and wire brushed if necessary. All surfaces and gaskets should be brushed over with soapy water. A rubber gasket and follower gland should be placed on the plain end "seated" in the mechanical flanged bell; and then the gasket firmly and evenly pressed into the bell. After the gland is in position for bolting, insert all bolts and make all nuts finger-tight. Keeping the plain end centrally located within the bell, begin tightening bolts, bringing all bolts up evenly at all points around the bell flange. Alternate bolts from side to side until all bolts are uniformly tight within the correct range of torque of 75 to 90 foot pounds (4" thru 24" sizes). If effective sealing is not attained at the maximum torque level, the joint should be disassembled and reassembled after thorough cleaning.

Payment for Watermain Mechanical Joint Assembly shall be included with the payment for each particular size of watermain and fittings installed.

WATERMAIN PIPE DEFLECTION: Deflections for obstructions or other purposes shall be governed by these allowable limits in the following table, unless further deflection is allowed by written communication from the Engineer.

DEFLECTION TABLE

Pipe Size	Deflection in inches per 18 foot length	
3	24"	
4	24"	Note: Unrestrained
6	20"	Connections only.
8	15"	-
10	15"	
12	15"	
14	10"	
16	10"	
18	8"	
20	8"	
24	6"	

WATERMAIN PIPE CARE: Care shall be taken to keep the interior of the pipe clean and free from dirt and other foreign materials. Bulkheads shall be used at the open ends of the pipe to insure cleanliness, especially at the end of each day's work.

If there is water in the trench, a water-tight plug will be utilized, and the seal must remain in place until the trench is pumped completely dry. The end shall also be plugged whenever the pipe is left unattended. Pipe shall be laid with the bell ends facing in the direction of lying, unless otherwise directed by the Engineer.

Payment for watermain pipe care shall be included with the payment for each particular size of watermain and fittings installed.

HYDROSTATIC TEST: Watermains must be tested for leakage before the work is accepted. The lines shall be tested section by section by use of valves in the line or temporary plugs, but if conditions require, the Engineer may order any series of sections to be tested at one time.

The Contractor shall furnish the pump, gauge and other necessary materials and equipment and labor to properly make the test, which shall be made in the Engineer's or Inspector's presence, and the methods used shall be herein specified. The test shall be made at the high point in the line, which shall be determined by the Engineer.

The section or sections of the line to be tested shall be filled with potable water and the entrained air within the pipe expelled. The line shall be pumped up to a pressure of one hundred and fifty (150) pounds per square inch, and if the gauge holds, the test period shall be considered as started. The lines shall be continuously kept pumped to the specified one hundred and fifty (150) pounds per square inch pressure, for a two hour period, by pumping additional water into the line, and the amount of water so added shall be measured and considered to represent the leakage from the line under test during the testing period.

The leakage under the conditions of the test shall not exceed the values as shown in the following formula:

Where:

L= Testing allowance (makeup water), in gallons per hour

S= Length of pipe tested, in feet

D= Nominal diameter of pipe, in inches

P= Average test pressure during the hydrostatic test, in pounds per square inch (gauge)

If the leakage exceeds the specified amount, the line shall be inspected for leaks.

After the line is repaired, the test shall be repeated. Final acceptance of the work shall not be made until the results of the test are satisfactory.

The Contractor shall notify the Engineer of his intent to retest at least 24 hours in advance. However, the Contractor shall not begin the retest until all attempts have been made to correct all defects, and approval for retesting has been given by the Engineer.

The City shall be responsible for all inspection costs for the first two hydrostatic tests of any section. If a section requires a third hydrostatic retest, the Contractor may be held liable for such inspection costs incurred by the City of Muskegon personnel.

The payment for hydrostatic testing shall be included in the payment for Watermain, DI, _____ inch, Tr Det G, Modified. No separate payment will be made for testing.

CLEANING AND DISINFECTING WATERMAIN: All valves shall be operated by Water Department personnel only. After the hydrostatic tests have been satisfactorily completed the pipe lines shall be cleaned and flushed by introducing water from the city water mains into the completed line and the water allowed to flow from the far end of the section flushed until it runs clear. Before the main is chlorinated, it shall be flushed with potable water to remove air pockets and particulates. The flushing velocity in the main shall not be less than 3.0 ft./sec in accordance with AWWA C651 section 4.4.2. Each section tested shall be flushed separately.

After cleaning and flushing, the pipe line shall be disinfected by introducing liquid chlorine or calcium hypochlorite solution into the mains with methods and equipment approved by the Engineer. The solution shall remain in the lines for a period of at least 24 hours. The liquid chlorine, or calcium hypochlorite solution containing not less than 10,000 PPM (one percent) of available chlorine, shall be introduced into the main through a corporation cock inserted in the horizontal axis of the pipe. The point of application shall be at the end of the section of the main where water form the existing water distribution system is available. A hydrant, valve or corporation cock at the far end of section treated shall be opened and water allowed to flow through the mains by opening a valve at the water supply end or by other means approved by the Engineer.

The chlorine or calcium hypochlorite solution shall be introduced into the main continuously while water is flowing, and the water pressure shall not exceed 20 pounds per square inch during the application of disinfectant.

The water shall be allowed to flow and the application of disinfectant continued until water flowing from the far end of section being treated shows a residual chlorine content of at least 50 parts per million when testing with an appropriate indicator. Each hydrant, valve and other lateral connection shall be flushed separately and following this operation all valves and hydrants shall be discontinued when the flow of water is stopped. The water so treated shall remain in the section under treatment for at least 24 hours with a chlorine residual of a least 10 PPM after that time. After the expiration of this period, the mains shall be flushed with water from the existing supply and water allowed to flow until the residual chlorine content does not exceed 2 parts per million or a residual acceptable to

the City of Muskegon Department of Public Works, when tested with an appropriate indicator. An initial set of samples will be taken at this time and resampled after a minimum of 16 hours. Sets of samples shall be collected every 1200 Ft of the new watermain, plus one set from the end of the line and at least one set from each branch greater than one pipe length. Samples of water will be used to preform bacteriological analysis to determine the purity of the water.

The Contractor shall notify the Engineer at least 48 hours in advance of his intent to begin disinfection. Upon completion of the analysis of the water samples, the Engineer will notify the Contractor whether or not the results are satisfactory. If the results are not satisfactory, the Contractor shall repeat the cleaning and disinfection process until the results of the analysis are satisfactory.

When relieving the watermain of water, the Contractor shall provide, install and maintain adequate equipment and materials to create dry working conditions at the construction site. Drainage discharge location shall be approved by the Engineer. The Contractor shall ascertain the availability and adequacy of the discharge point. Damage to receiving sewers or other property, Public or Private, will be the responsibility of the Contractor.

Calcium hypochlorite for disinfecting watermains shall be of the high test type, in powder form and shall have from 65 percent to 70 percent available chlorine. High test hypochlorite must first be made in a paste and then thinned with potable water to a 10,000 PPM solution.

The preparation of a one percent solution (10,000 PPM) requires 1 pound of 65 to 70 percent available chlorine hypochlorite to 10 gallons of potable water. Solution must be mixed in a wooden barrel or plastic.

Cost of collecting samples and laboratory analysis shall be paid for by the City of Muskegon, up to a maximum of two tests per section. Any additional testing will be at the Contractors expense.

The payment for cleaning and disinfecting watermain shall be included in the payment of the Watermain, DI, ____ inch, Tr Det G, Modified. No separate payment will be made for cleaning and disinfecting watermain.

WATERMAIN ELECTICAL CONDUCTIVITY: All ductile iron watermain and fittings furnished and installed under this contract shall be provided with electrical conductivity connections. Electrical conductivity connections shall be of one of the three methods described in the materials section of this special provision. After installation of the mains, backfilling and the hydrostatic pressure tests are completed, the system (pipe line and hydrants) shall be tested for electrical continuity and current capacity. It is imperative that all lines and appurtenances be filled with water prior to conductivity testing. The line will be tested in sections between hydrants. The hydrants and hydrant valves will be opened to bleed off any air in the lead. The hydrant will then be closed and the hydrant valve left open. Adjacent hydrants will serve as test section termini. The Contractor will provide electric current of 150 amperes for the tests. Direct current of 150 amperes, shall be

passed through the pipe line for a period of five minutes. Current flow through the pipe shall be measured continuously on a suitable ammeter and shall remain steady without interruption or excessive fluctuation throughout the five minute test. Insufficient current or intermittent current or arcing, indicated by large fluctuations of the ammeter needle, shall be evidence of defective electrical contact in the pipe line. The cause shall be isolated and corrected. Thereafter, the section in which the defective test occurred shall be retested as a unit and shall meet the test requirements to the satisfaction of the Engineer.

All electrical connections shall be capable of carrying 60 amps. Any pipe cut and repaired with couplings shall have electrical connections.

In addition, at the time the joint is made the Contractor shall test the joint for contact effectiveness. The actual conductivity test shall be run concurrently with the Hydrostatic Test.

The payment for testing the electrical conductivity of the new watermain shall be included in the payment of the Watermain, DI, ____ inch, Tr Det G, Modified. No separate payment will be made for electrical conductivity testing.

WATERMAIN CONNECTIONS: After new watermain has passed test for leakage, conductivity and disinfection the following proceedure will be followed to connect the new main to the existing mains

Just prior to assembly, all pipe and fittings shall be disinfected by swabbing with a 1% Calcium hypochlorite solution. Watermain shall be buried 6 feet below top of curb. Conductivity connections shall be made at each joint. Pipe deflection shall not exceed 15 inches for 8" pipe, and 20" for 6" pipe. All pipe and fittings shall be bedded to the springline and compacted to 95% density using vibratory methods. Subsequent backfill shall be placed in 12" lifts at 95% density. The new pipeline shall be thoroughly flushed out through the adjacent hydrants immediately after backfilling.

Payment for watermain connections shall be included with the payment for each particular size of watermain and fittings used to make connection.

CONTAMINATED SOILS: The engineer is not aware of any contamination, but should we encounter a contaminated area, work shall cease and the specialized gaskets for use in contaminated areas will be used. Refer to AWWA C600 section 4.1 (**Permeation**), for instructions about how to proceed in contaminated work areas.

MEASUREMENT AND PAYMENT:

The completed work WATERMAIN and FITTINGS including all material, labor, and equipment, as measured will be paid at the contract unit price for the following contract items (pay items).

Pay Item	<u>Pay Unit</u>
Watermain, DI, _ inch, Tr Det G, Modified	Foot
Bend, _ inch, 45 Degree, DI MJ	Each
Bend, _ inch, 22.5 Degree, DI MJ	Each
Sleeve, _ inch, Long, DI MJ	Each
Tee, _ inch X _ inch, DI MJ	Each
Reducer, _ inch X _ inch, DI MJ	Each



ETNA SUPPLY - GRAND LEDGE 10801 GRAND RIVER HWY. GRAND LEDGE, MI 48837 Phone 517 622 8696 Fax 517 622 8334

SOLD TO:

CITY OF MUSKEGON 1350 EAST KEATING PUBLIC SERVICE BUILDING MUSKEGON, MI 49442-6106

Acknowledgement

ORDER DATE	TE ORDER NUMBER		
08/03/2022	2022 S104677892		
ETNA SUPPLY - GRAND LE	PAGE NO.		
10801 GRAND RIVER HWY. GRAND LEDGE, MI 48837 Phone 517 622 8696 Fax 517 622 8334	1 of 1		

SHIP TO:

CITY OF MUSKEGON 1350 EAST KEATING PUBLIC SERVICE BUILDING MUSKEGON, MI 49442-6106

CUSTOMER NUMBER	CUSTOME	ER PO NUMBER	JOB NAME / RELEASE NUMBER SALESPERSON		LESPERSON	
21506	OLTH	OFF PROJECT	Kev		vin Dieleman	
WRITER		SHIP VIA	TERMS	SHIP DATE		FREIGHT ALLOWED
Dalton Potge	eter	DIRECT	NET 25TH	08/15/2022		No
ORDER QTY		DESCRIPTION	N	UNIT	PRICE	EXT PRICE
4440ft 180ft	DELIVERY DELIVERY CONTACT CONTACT ADD'L INS ⁻ 12" DI PIPE WALL THIC SEPERATE 8" DI PIPE (THICKNESS SEPERATE 6" DI PIPE (CL52 C/L S.J. (.37 KNESS) GASKETS TY LY CL52 C/L S.J. (.33 WAI S) GASKETS TYPED LY CL52 C/L S.J.(.31 WAL S) GASKETS TYPED	/PED _L		61.000/ft 37.000/ft 26.000/ft	85400.00 164280.00 4680.00
I Acknowledge this C	Order			Subto	tal	254360.00
*** Signatura:	***			S&H	Charges	0.00
Signature:			-	Tax		0.00
*** Date:				Pymt	& Disc	0.00
ed By: DPOTGETE on 8/29/2022 1				Amou	int Due	254360.00



ETNA SUPPLY - GRAND LEDGE 10801 GRAND RIVER HWY. GRAND LEDGE, MI 48837 Phone 517 622 8696 Fax 517 622 8334

SOLD TO:

CITY OF MUSKEGON 1350 EAST KEATING PUBLIC SERVICE BUILDING MUSKEGON, MI 49442-6106

Acknowledgement

ORDER DATE	ORDER NUMBER		
08/15/2022 S104677892			
ETNA SUPPLY - GRAND LE	PAGE NO.		
10801 GRAND RIVER HWY. GRAND LEDGE, MI 48837 Phone 517 622 8696 Fax 517 622 8334	1 of 1		

SHIP TO:

CITY OF MUSKEGON 1350 EAST KEATING PUBLIC SERVICE BUILDING MUSKEGON, MI 49442-6106

CUSTOMER NUMBER	CUSTOM	ER PO NUMBER	JOB NAME / RELEASE NUMBER SALESPERSON		LESPERSON	
21506	OLTH	OFF PROJECT	Kevi		vin Dieleman	
WRITER		SHIP VIA	TERMS	RMS SHIP DATE		FREIGHT ALLOWED
Dalton Potg	eter	OT OUR TRUCK	NET 25TH	08/23/2022		No
ORDER QTY		DESCRIPTIO	N	UNIT	PRICE	EXT PRICE
15ea 4ea	DELIVERY DELIVERY CONTACT ADD'L INS 12 AMARILL 8 AMARILL 6 AMARILL	SHIPPING INSTRU DATE:NEXT RUN TIME:B/4 3PM NAME:MIKE #:231-578-6495 TR: LO FAST-GRIP GASKE O FAST-GRIP GASKE O FAST-GRIP GASKE	ET T	20	0.000/ea 0.000/ea 0.000/ea	3900.00 3000.00 600.00
I Acknowledge this Order				Subto	otal Charges	7500.00 0.00
Signature:			-	Зап Тах	Charges	0.00
*** Date:			Γ	Pymt	& Disc	0.00
ed By: DPOTGETE on 8/29/2022 -				Amou	int Due	7500.00



Quotation

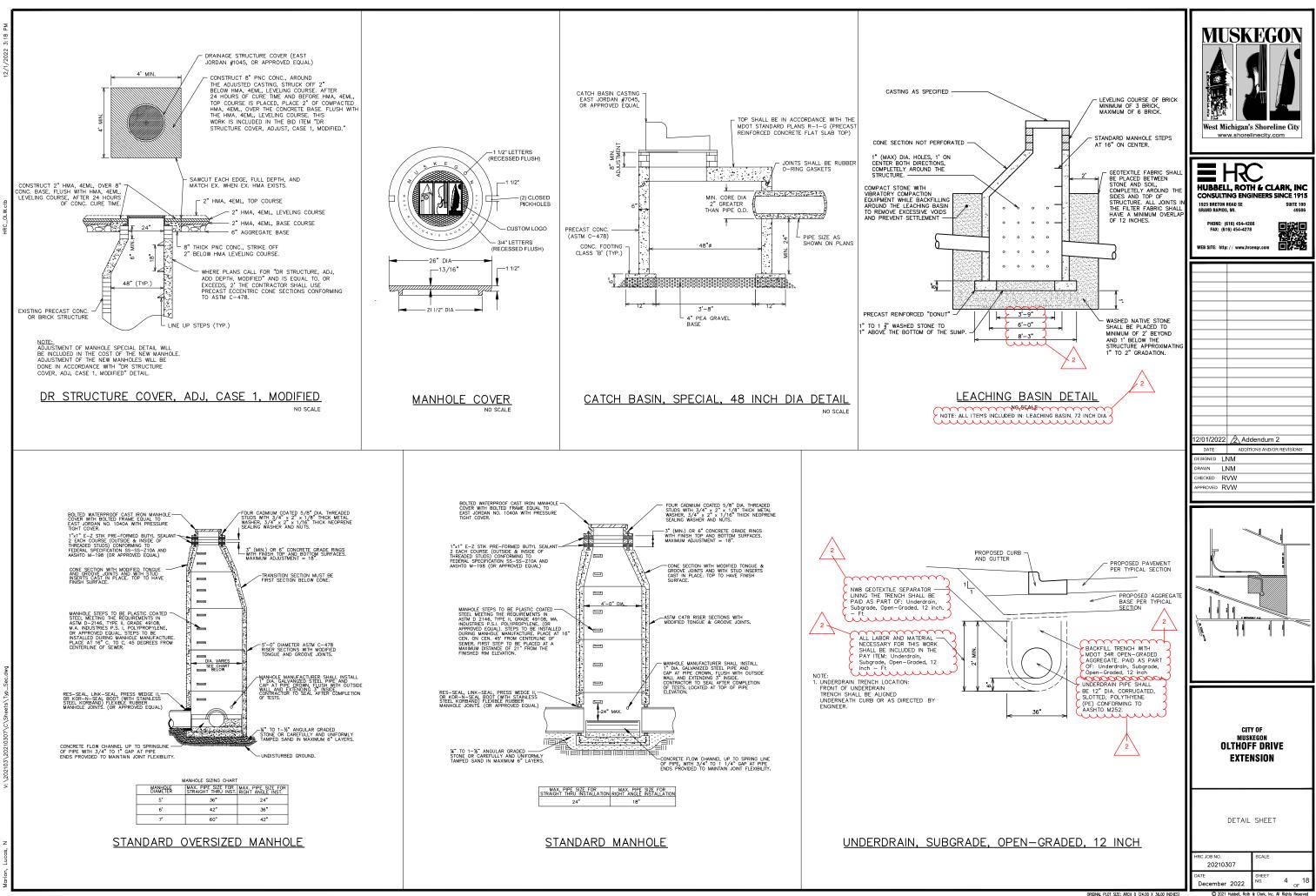
<u>ejco.com</u> 800 626 4653

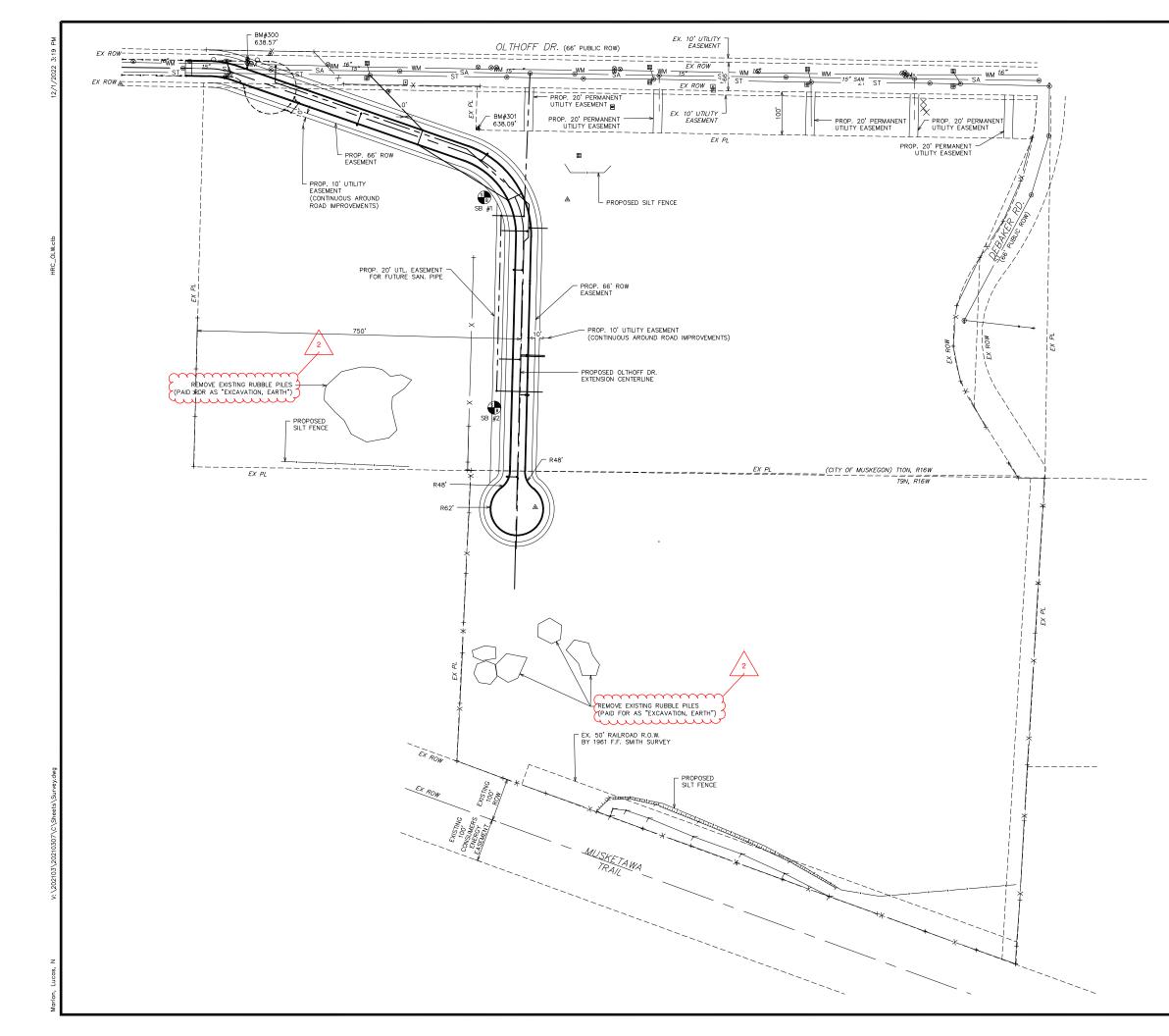
Account Name	City of Muskegon	Quote Number	00544522
Ship to	1350 East Keating Ave, Muskegon, MI, US, 49442	Quote Name	Hydrant Order 10-7-22
Bill to	Attention Accounts Payable 1350 East Keating Ave, Muskegon, MI, US,	Created Date	10/7/2022
	49442	Expiration Date	11/6/2022
Full Name		Prepared by	Mike Vander Molen
Business Phone		Email	mike.vandermolen@ejco.com
Email		Phone	616-538-2040
Business Fax		Fax	616-538-4990
Close Date	10/7/2022	I	

Quantity	Product N°	Description	Notes	Line Charge	Sales Price (USD)	Total Price (USD)
4	55928D	5BR250 Hydrant 6' MJ 2AD 1" Sq 2-13 2 1/2" Muskegon 1-355 5" Storz Red OL	4 MONTH LEAD TIME		3389.88	13559.52

Subtotal	13559.52 USD
Grand Total	13559.52 USD

Notes and Comments





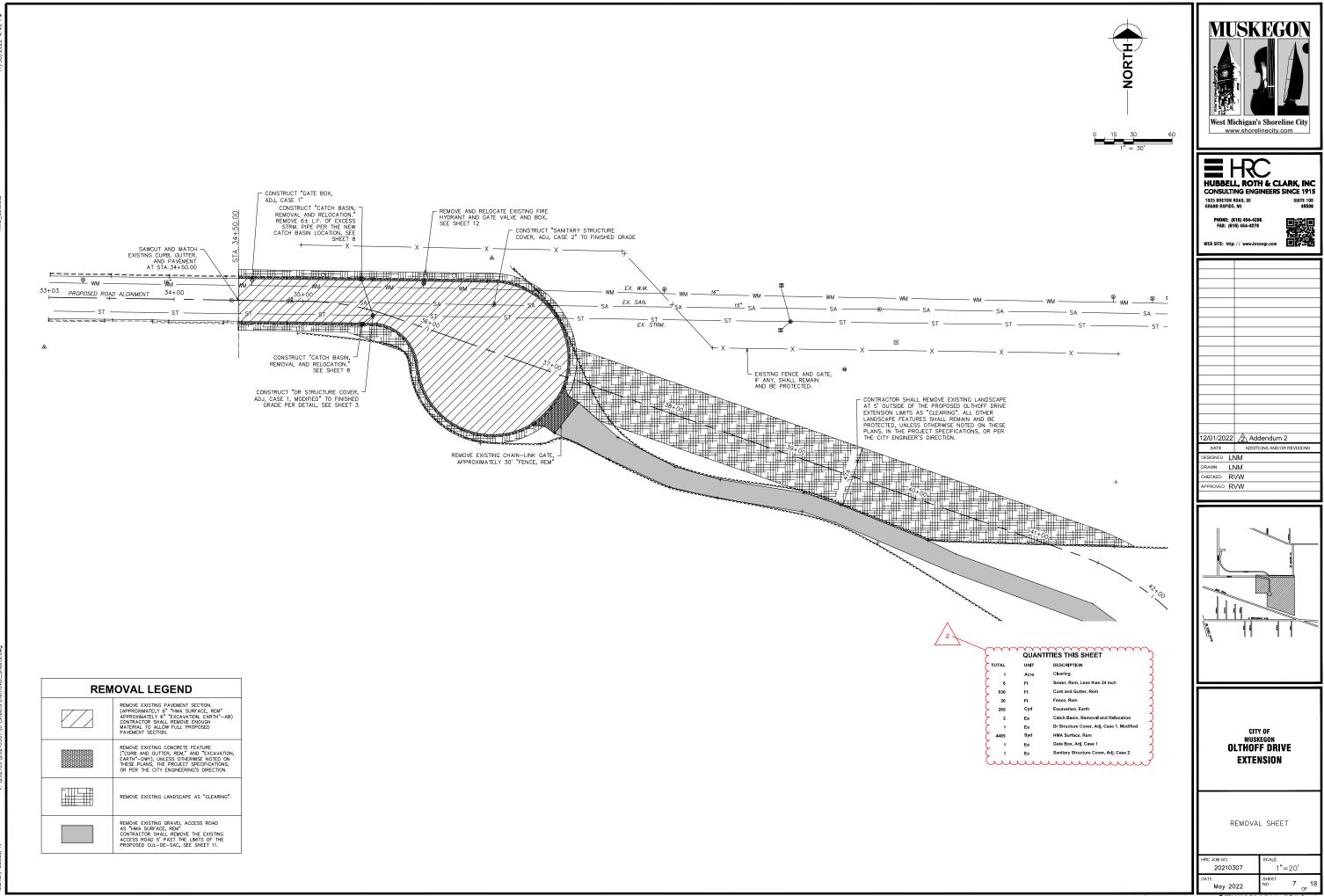


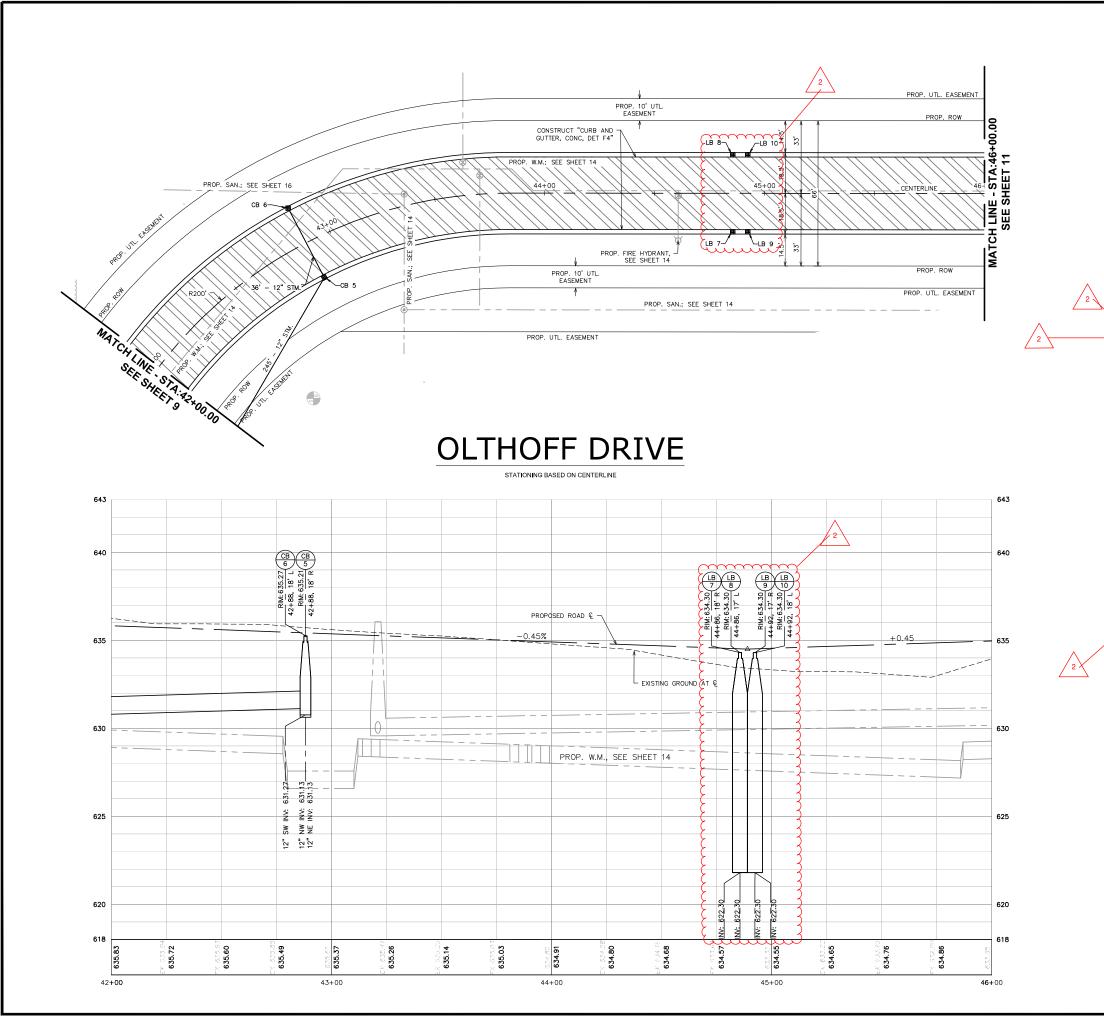
QUANTITIES THIS SHEET

TOTAL	UNIT	DESCRIPTION
1	LSUM	Mobilization, Max
4060	Cyd	Excavation, Earth
1421	Ft	Erosion Control, Silt Fence

MUSKEGON						
HUBBELL, ROTH & CLARK, INC CONSULTING ENGINEERS SINCE 1915 1925 BRETON ROAD, SE GRAND RARHDS, NI Segoer PHORE: (616) 454-4228 FAX: (616) 454-4278 FAX: (616) 454-4278 WEB SITE: http:// www.hrcengr.com						
	Jendum 2 ONS AND/OR REVISIONS					
CITY OF MUSKEGON OLTHOFF DRIVE EXTENSION						
PROPOSED	SITE PLAN					
HRC JOB NO. 20210307 DATE	SCALE 1"=100' SHEET NO. 6 18					

© 2021 Hubbell, Roth & Clark, Inc. All Rights Reserved

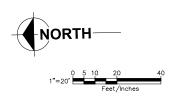




HRC_OLW.ctb

v: \202103\20210307\C\Sheets\Plan_Sheets.

on, Lucas, N



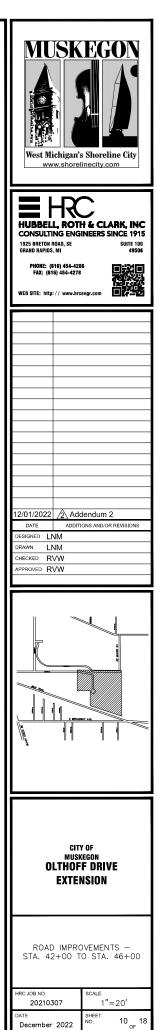
	QL	JANTITIES THIS SHEET
TOTAL	UNIT	DESCRIPTION
103	Cyd	Embankment, CIP
8	Sta	Machine Grading
1914	Syd	Aggregate Base, 6 inch
78	Ft	Sewer, CI IV, 12 inch, Tr Det A
36	Ft	Sewer, CI IV, 12 inch, Tr Det B
114	Ft	Video Taping Sewer and Culv Pipe
2	Ea	Catch Basin, Special, 48 inch dia
6	Ea	Dr Structure Cover, Type K, Modified
A		Leaching Basin, 72 inch dia
226	Ft	Underdrain, Subgrade, Open-Graded, 12 inch
509	Ton	HMA, 4EML
801	Ft	Curb and Gutter, Conc, Det F4

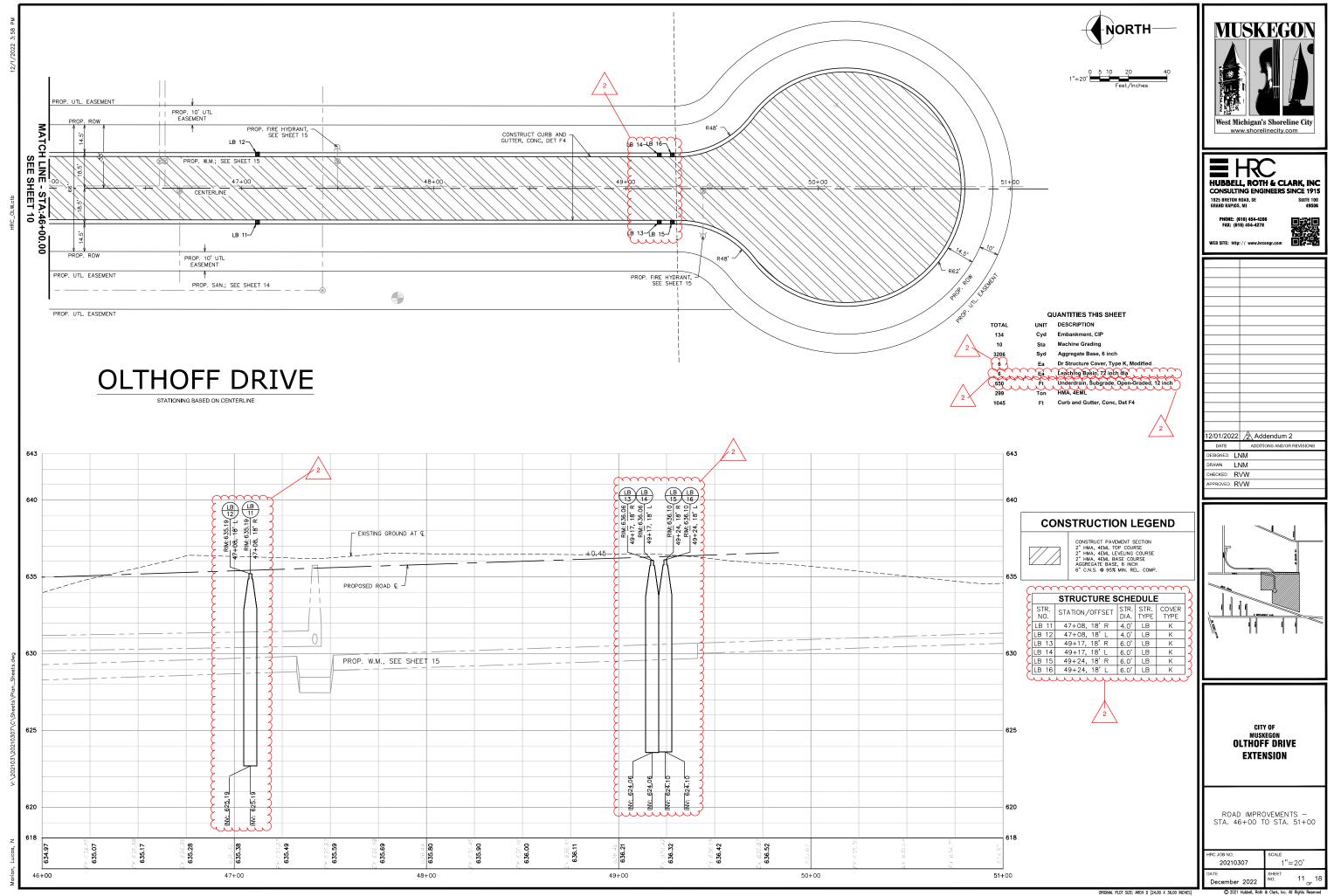
CONSTRUCTION LEGEND

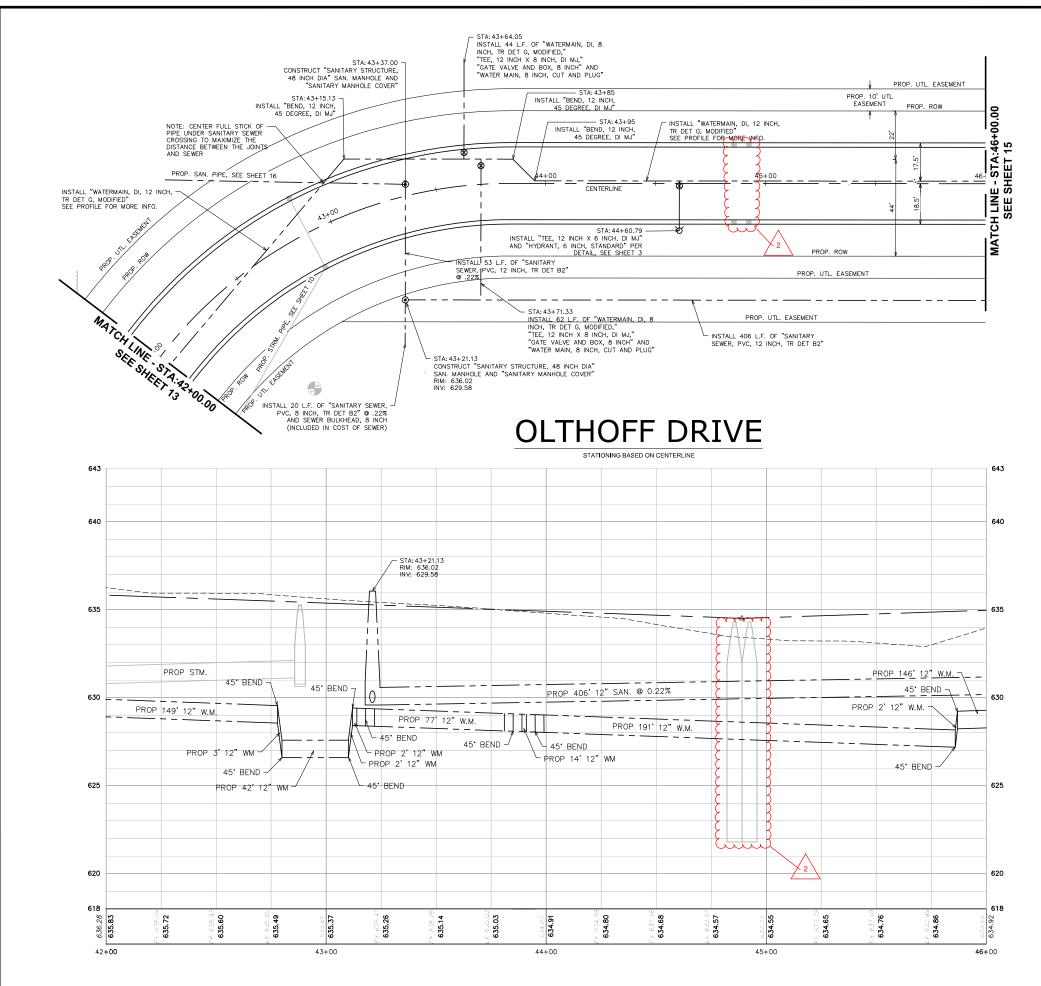
CONSTRUCT PAVEMENT SECTION 2" HMA, 4EML TOP COURSE 2" HMA, 4EML LEVELINC COURSE 2" HMA, 4EML BASE COURSE AGGREGATE BASE, 6 INCH 6" C.N.S. @ 95% MIN. REL. COMP.

STRUCTURE SCHEDULE

-	STR. NO.	STATION/OFFSET	STR. DIA.	STR. TYPE	COVER TYPE	X	
-	CB 5	42+88, 18' R	4.0'	СВ	к	ĸ	
•	CB 6	42+88, 18'L	4.0'	CB	к	1	
•	LB 7	44+86, 18'R	6.0'	LB	к	5	
1	LB 8	44+86, 18'L	6.0'	LB	к	2	
2	LB 9	44+92, 18' R	6.0'	LB	К	ιJ	
,	LB 10	44+92, 18'L	6.0'	LB	к	ı٦	
U	1 1 1		1.1				



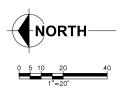




HRC_OLW.ctb

V:\202103\20210307\C\Sheets\Utility_Sheets

ion, Lucas, N



	QUANTITIES THIS SHEET
UNIT	DESCRIPTION
Ft	Video Taping Sewer and Culv Pipe
Ea	Sanitary Manhole Cover
Ea	Gate Valve and Box, 8 inch
Ea	Water Main, 8 inch, Cut and Plug
Ft	Water Main, DI, 12 inch, Tr Det G
Ft	Water Main, DI, 8 inch, Tr Det G
Ea	Bend, 12 inch, 45 Degree, DI MJ
Ea	Hydrant, 6 inch, Standard
Ea	Tee, 12 inch X 6 inch, DI MJ
Ea	Tee, 12 inch X 8 inch, DI MJ
Ft	Sanitary Sewer, PVC, 8 inch, Tr Det B2
Ft	Sanitary Sewer, PVC, 12 inch, Tr Det B2
Ea	Sanitary Structure, 48 inch dia

TOTAL

337

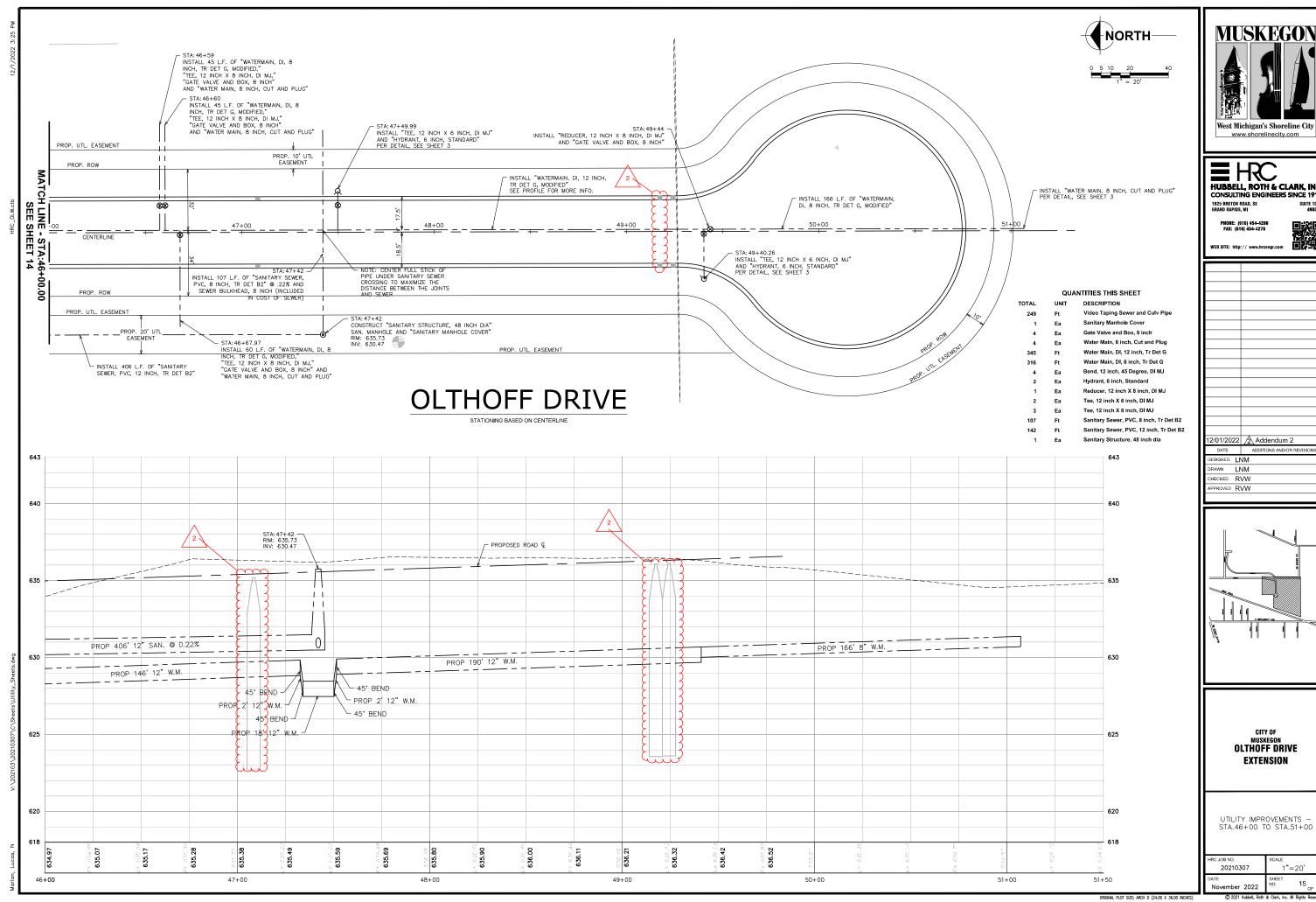
2

317

2

MUSKEGONImage: State of the state of					
HUBBELL, ROTH & CLARK, INC CONSULTING ENGINEERS SINCE 1915 1925 BETOR ROAD, SE 06AAD RAPIDS, MI 9459 BETOR 104 FAX: (616) 454-4276 FAX: (616) 454-4276					
12/01/2022 Addendum 2 DATE ADDITIONS AND/OR REVISIONS DESIGNED LNM DRAWN LNM CHECKED RVW APPROVED RVW					
CITY OF MUSKEGON OLTHOFF DRIVE EXTENSION					
UTILITY IMPROVEMENTS – STA.42+00 TO STA.46+00 HRC JOB NO. 20210307 1"=20' DATE November 2022 SHEET No. 14 _{OF} 18					

2021 Hubbell, Roth & Clark, Inc. All Rights Reserved



West Michigan's Shoreline City www.shorelinecity.com
HUBBELL, ROTH & CLARK, INC CONSULTING ENGINEERS SINCE 1915 1925 BRETOR RDAD, SE BY BARD BAPIDS, MI BARD BAPIDS, MI STATE (S16) 454-4228 FAX: (S16) 454-4278 WEB SITE: http://www.hrcengr.com
12/01/2022 Addendum 2 DATE ADDITIONS AND/OR REVISIONS DESIGNED LNM
DRAWN LNM CHECKED RVW APPROVED RVW
CITY OF MUSKEGON OLTHOFF DRIVE EXTENSION
UTILITY IMPROVEMENTS – STA.46+00 TO STA.51+00 hrc.job no. scale

15 _ 18