

INVITATION TO BID

ITB # 4373

Devonshire, Belmont, Londonderry
Water Main Replacement Project



Proposal Due Date: Tuesday, April 21, 2015
On Or Before 11:00 A.M. (Local Time)

Public Services Area/Project Management Services Unit

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

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ADVERTISEMENT FOR THE
DEVONSHIRE, BELMONT, LONDONDERRY WATER MAIN REPLACEMENT
PROJECT

CITY OF ANN ARBOR

ITB # 4373

Sealed Bids will be received by the City of Ann Arbor Customer Service Desk, First (1st) Floor, Guy Larcom City Hall, on or before Tuesday, April 21, 2015 by 11:00 am for construction of the Devonshire, Belmont, Londonderry Water Main Replacement Project. Bids will be publicly opened and read aloud at this time.

Work to be done includes the replacement of the water main within Devonshire Street between Londonderry and Belmont, with in Londonderry Street between Devonshire Street and Belmont and with in Belmont Street between Londonderry and Devonshire, replacement of some storm sewer structures, some aggregate base, and related work.

A pre-bid conference will be held Tuesday, April 7, 2015 at 10:00 am in the 2nd Floor Council Chambers in City Hall located at 301 E. Huron St., Ann Arbor, Michigan 48104. Attendance is highly recommended. Bid documents, specifications, plans and addendum shall be downloaded by vendors at either of the following web sites, Michigan Inter-governmental Trade Network (MITN) www.mitn.info or City of Ann Arbor web site www.A2gov.org. It is the bidder's responsibility to verify they have obtained all information before submitting a bid.

Each Bid shall be accompanied by a certified check, or Bid Bond by a recognized surety, in the amount of 5% of the total of the bid price. A Bid, once submitted, becomes the property of the City. In the sole discretion of the City, the City reserves the right to allow a bidder to reclaim submitted documents provided the documents are requested and retrieved no later than 48 hours prior to the scheduled bid opening.

The successful Bidder will be required to furnish satisfactory performance and labor and material bonds in the amount of 100% of the bid price and satisfactory insurance coverage.

Precondition for entering into a contract with the City of Ann Arbor: (i) compliance with Chapter 112 of Title IX of the Code of the City of Ann Arbor. (ii) compliance with applicable prevailing wage and living wage requirements of Chapter 23 of Title I of the Code of the City of Ann Arbor. Further information is outlined in the contract documents.

After the time of opening, no Bid may be withdrawn for a period of 90 days. The City reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

Any further information may be obtained from the Ann Arbor Procurement Office,
(734) 794- 6000 Ext. 45206, CITY OF ANN ARBOR, MICHIGAN

NOTICE OF PRE-BID CONFERENCE

A pre-bid conference for this project will be held on Tuesday, April 7, 2015 at 10:00 am in the 2nd floor Council Chambers, City Hall, located at, 301 E. Huron Street, Ann Arbor, Michigan 48104.

Attendance at this conference is optional, but highly recommended. Administrative and technical questions regarding this project will be answered at this time. The pre-bid meeting is for information only. Any answers furnished will not be official until verified in writing by the Financial Service Area, Procurement Unit. Answers that change or substantially clarify the bid will be affirmed in an addendum.

INSTRUCTIONS TO BIDDERS

General

Work to be done under this Contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents. All work to be done under this Contract is located in or near the City of Ann Arbor.

The City shall make available to all prospective Bidders, prior to receipt of the Bids, access to the area in which the work is to be performed. Advance notice should be given to the Administering Service Area/Unit in cases where access to the site must be arranged by the City.

Any Bid which does not conform fully to these instructions may be rejected.

Preparation of Bids

Bids should be prepared providing a straight-forward, concise description of the Bidder's ability to meet the requirements of the ITB. Bids shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed and dated in ink by the person signing the Bid.

Bids must be submitted on the "Bid Forms" provided with each blank properly filled in. If forms are not fully completed it may disqualify the bid.

Each person signing the Bid certifies that he/she is the person in the Bidder's firm/organization responsible for the decision as to the fees being offered in the Bid and has not and will not participated in any action contrary to the terms of this provision.

Questions or Clarification on ITB Specifications

All questions regarding this ITB shall be submitted via email. Emailed questions and inquires will be accepted from any and all prospective Bidders in accordance with the terms and conditions of the ITB.

All questions shall be due on or before Thursday, April 16, 2015 by 10 am and should be addressed as follows:

Specification/Scope of Work questions emailed to awarrow@a2gov.org

Bid Process and HR Compliance questions emailed to mberryman@a2gov.org

Addenda

If it becomes necessary to revise any part of the ITB, notice of the Addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or City of Ann Arbor web site www.A2gov.org for all parties to download.

Each Bidder must in its Bid, to avoid any miscommunications, acknowledge all addenda which it has received, but the failure of a Bidder to receive, or acknowledge receipt of; any addenda shall not relieve the Bidder of the responsibility for complying with the terms thereof.

The City will not be bound by oral responses to inquiries or written responses other than written addenda.

Bid Submission

All Bids are due and must be delivered to the City of Ann Arbor Procurement Unit on or before Tuesday, April 21, 2015 by 11:00 am. Bids submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each Bidder must submit one (1) original Bid and one (1) Bid copy in a sealed envelope clearly marked: **ITB 4373 – Devonshire, Belmont, Londonderry Water Main Replacement Project.**

Bids must be addressed and delivered to:

City of Ann Arbor
1st Floor Customer Service Department,
301 East Huron Street
P.O. Box 8647
Ann Arbor, MI 48107

All Bids received on or before the Due Date will be publicly opened and recorded immediately. No immediate decisions are rendered.

Hand delivered bids will be date/time stamped/signed at the address above in order to be considered. Normal business hours are 8:00 a.m. to 4:00 p.m. Monday through Friday. The City will not be liable to any Bidder for any unforeseen circumstances, delivery or postal delays. Postmarking to the Due Date will not substitute for receipt of the Bid. Each Bidder is responsible for submission of their Bid.

Additional time will not be granted to a single Bidder; however, additional time may be granted to all Bidders when the City determines that circumstances warrant it.

Award

The City intends to award a Contract(s) to the lowest responsible Bidder(s). On multi-divisional contracts, separate divisions may be awarded to separate Bidders. The City may also utilize alternatives offered in the Bid Forms, if any, to determine the lowest responsible Bidder on each division, and award multiple divisions to a single Bidder, so that the lowest total cost is achieved for the City. For unit price bids, the contract will be awarded based upon the unit prices and the lump sum prices stated by the bidder for the work items specified in the bid documents, with consideration given to any alternates selected by the City. If the City determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the City, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.

The acceptability of major subcontractors will be considered in determining if a Bidder is responsible. In comparing Bids, the City will give consideration to alternate Bids for items listed in the bid forms.

Official Documents

The City of Ann Arbor shall accept no alternates to the bid documents made by the Bidder unless those alternatives are set forth in the "Alternate" section of Bid form.

The City of Ann Arbor officially distributes bid documents from the Procurement Unit or through the Michigan Intergovernmental Trade Network (MITN). Copies of the bid

documents obtained from any other source are not Official copies. Addenda and other bid information will only be posted to these official distribution sites. If you obtained City of Ann Arbor Bid documents from other sources, it is recommended that you register on www.MITN.info and obtain an official Bid.

Bid Security

Each bid must be accompanied by a certified check, or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of 90 days, as specified in the Advertisement.

Contract Time

Time is of the essence in the performance of the work under this Contract. The available time for work under this Contract is indicated on page C-1, Article III of the Contract. If these time requirements cannot be met, the Bidder must stipulate on Bid Form Section 3 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

Liquidated Damages

A liquidated damages clause, as given on page C-2, Article III of the Contract, provides that the Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Human Rights Information

All contractors proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in the General Conditions section herein shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance (see Appendix A) at all work locations where its employees provide services under a contract with the City.

Wage Requirements

Section 4, beginning at page GC-2, outlines the requirements for payment of prevailing wages or of a “living wage” to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and provide documentary proof of compliance when requested. See also Appendix A for City’s Living Wage Declaration.

Major Subcontractors

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over \$50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor and the approximate dollar value of each subcontract.

Debarment

Submission of a Bid in response to this ITB is certification that the Bidder is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

Disclosures

After bids are opened, all information in a bidder’s bid is subjected to disclosure under the provisions of Michigan Public Act No. 442 of 1976, as amended (MCL 15.231 et seq.), known as the “Freedom of Information Act.” The Freedom of Information Act also provides for the complete disclosure of contracts and attachments thereto except where specifically exempted.

Bid Protest

All Bid protests must be in writing and filed with the Purchasing Agent within five (5) business days of the award action. The bidder must clearly state the reasons for the protest. If a bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the bidder to the Purchasing Agent. The Purchasing Agent will provide the bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee whose decision shall be final.

Reservation of Rights

The City of Ann Arbor reserves the right to accept any bid or alternative bid proposed in whole or in part, to reject any or all bids or alternatives bids in whole or in part and to waive irregularity and/or informalities in any bid and to make the award in any manner deemed in the best interest of the City.

INVITATION TO BID

City of Ann Arbor
Guy C. Larcom Municipal Building
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including Advertisement, Human Rights Division Contract Compliance Forms, Notice of Pre-Bid Conference, Instructions to Bidders, Bid, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this Bid is one part.

In accordance with these bid documents, and Addenda numbered _____, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:319 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.

If this Bid is accepted by the City and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Bid shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Bid, or if this Bid is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS _____ DAY OF _____, 2015.

Bidders Name _____

Official Address _____

Authorized Signature of Bidder _____

Telephone Number _____

(Print Name of Signer Above) _____

LEGAL STATUS OF BIDDER

(The Bidder shall fill out the appropriate form and strike out the other two.)

Bidder declares that it is:

* A corporation organized and doing business under the laws of the state of _____, for whom _____, bearing the office title of _____, whose signature is affixed to this Bid, is authorized to execute contracts.

* A partnership, list all members and the street and mailing address of each:

Also identify the County and State where partnership papers are filed:

County of _____, State of _____

* An individual, whose signature with address, is affixed to this Bid: _____
(initial here)

BID FORM

Section 1–Schedule of Prices

Project: Devonshire, Belmont, Londonderry Water Main Replacement Project
 File #: 2014-033 Bid #: 4373

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
130	Protective Fencing	LF	1,200	\$ _____	\$ _____
135	Tree Removal, 8" and larger	Each	11	\$ _____	\$ _____
140	Exploratory Excavations (0-10 foot deep)	Each	4	\$ _____	\$ _____
201	General Conditions, Modified, Max. \$50,000	LS	1	\$ _____	\$ _____
202	Digital Audio Visual Coverage	LS	1	\$ _____	\$ _____
203	Minor Traffic Devices, Modified, Max \$20,000	LS	1	\$ _____	\$ _____
204	Clean-Up & Restoration, Special	LS	1	\$ _____	\$ _____
205	No Parking Signs	Each	62	\$ _____	\$ _____
211	Remove and Replace 4 inch or 6 inch Sanitary Sewer Lead	LF	100	\$ _____	\$ _____
220	Water Main Pipe Abandonment	LS	1	\$ _____	\$ _____
221	Fire Hydrant Assembly Abandonment	Each	4	\$ _____	\$ _____
222	Temporary 4 inch or 6 inch Water Main Line Stop	Each	6	\$ _____	\$ _____
223	Temporary 8 inch Water Main Line Stop	Each	2	\$ _____	\$ _____
225	6 Inch Wrapped Underdrain	LF	3,000	\$ _____	\$ _____
227	Subgrade Undercutting - Type II	CY	100	\$ _____	\$ _____
230	Sewer Bulkhead, 4-inch through 18-inch Diameter	Each	1	\$ _____	\$ _____
240	Temporary HMA Pavement	Ton	25	\$ _____	\$ _____
252	Aggregate Base Course, 21AA - C.I.P.	CY	1,300	\$ _____	\$ _____
TOTAL THIS PAGE				\$ _____	
(Also to be entered on page BF-4)					

BID FORM

Section 1—Schedule of Prices

Project: Devonshire, Belmont, Londonderry Water Main Replacement Project
 File #: 2014-033 Bid #: 4373

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
260	Remove HMA Pavement	SY	28	\$ _____	\$ _____
261	Remove Concrete Curb or Curb and Gutter - Any Type	LF	3,200	\$ _____	\$ _____
262	Remove Concrete Sidewalk and Drive - Any Thickness	SF	1,300	\$ _____	\$ _____
272	Plastic Drum - Lighted, Furnished and Operated	Each	185	\$ _____	\$ _____
273	Type III Lighted Barricade, Furnished and Operated	Each	6	\$ _____	\$ _____
274	Temporary Type B Signs	SF	169	\$ _____	\$ _____
305	8 inch SDR 35 PVC Trench Detail V	LF	198	\$ _____	\$ _____
306	8 inch SDR 35 PVC Trench Detail VI	LF	10	\$ _____	\$ _____
307	8 inch SDR 35 PVC Trench Detail IA	LF	14	\$ _____	\$ _____
320	12 inch Class IV RCP, Trench Detail IA	LF	120	\$ _____	\$ _____
335	8 inch x 6 inch SDR 35 PVC Wye	Each	3	\$ _____	\$ _____
353	6 inch SDR 35 PVC Service Lead	LF	30	\$ _____	\$ _____
360	Type I Manhole 0-10 feet Deep, 4 foot dia.	Each	2	\$ _____	\$ _____
361	Type I Manhole Additional Depth, 4 foot dia.	VF	3	\$ _____	\$ _____
367	Single Inlet	Each	19	\$ _____	\$ _____
385	Sewer Pipe Abandonment	LF	222	\$ _____	\$ _____
386	Sewer Structure Abandonment	Each	1	\$ _____	\$ _____
391	Pipe Undercut & Refill (6AA)	CY	200	\$ _____	\$ _____

TOTAL THIS PAGE

(Also to be entered on page BF-4)

\$ _____

BID FORM

Section 1–Schedule of Prices

Project: Devonshire, Belmont, Londonderry Water Main Replacement Project
 File #: 2014-033 Bid #: 4373

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
401	8 inch, Class 50 DIP w/polywrap, TD-IA	LF	116	\$ _____	\$ _____
402	8 inch, Class 50 DIP w/polywrap, TD-IB	LF	2,725	\$ _____	\$ _____
403	8 inch, Class 50 DIP w/polywrap, TD-IC	LF	675	\$ _____	\$ _____
404	6 inch, Class 50 DIP w/polywrap, TD-IC	LF	91	\$ _____	\$ _____
415	8" 90° Bend	Each	2	\$ _____	\$ _____
416	8" 22-1/2° Bend	Each	2	\$ _____	\$ _____
417	8" 11-1/4° Bend	Each	3	\$ _____	\$ _____
419	8" 45° Bend	Each	17	\$ _____	\$ _____
420	8" x 6" Reducer	Each	9	\$ _____	\$ _____
432	8" x 8" x 6" Tee	Each	1	\$ _____	\$ _____
432	8" x 8" x 8" Tee	Each	10	\$ _____	\$ _____
440	Fire Hydrant Assembly	Each	5	\$ _____	\$ _____
443	8" Gate Valve-in Box	Each	7	\$ _____	\$ _____
448	6" Gate Valve-in Well	Each	1	\$ _____	\$ _____
449	8" Gate Valve-in Well	Each	2	\$ _____	\$ _____
460	Excavate and Backfill for Water Services and Leads	LF	803	\$ _____	\$ _____
481	Gate Valve-in-Box Abandonment	Each	3	\$ _____	\$ _____
482	Gate Valve-in-Well Abandonment	Each	5	\$ _____	\$ _____
TOTAL THIS PAGE				\$ _____	
(Also to be entered on page BF-4)					

BID FORM

Section 1–Schedule of Prices

Project: Devonshire, Belmont, Londonderry Water Main Replacement Project
File #: 2014-033 Bid #: 4373

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
560	Lowering Existing Structure (Trench Influence)	Each	8	\$ _____	\$ _____
563	Structure Covers	LBS	3,200	\$ _____	\$ _____
703	Inlet Filter	Each	36	\$ _____	\$ _____
TOTAL THIS PAGE				\$ _____	
TOTAL FROM PAGE BF-1:				\$ _____	
TOTAL FROM PAGE BF-2:				\$ _____	
TOTAL FROM PAGE BF-3:				\$ _____	
TOTAL BASE BID:				\$ _____	

BID FORM

Section 2 - Material and Equipment Alternates

The Base Bid price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the Contractor wishes to quote alternate items for consideration by the City, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

<u>Item Number</u> <u>Amount</u>	<u>Description</u>	<u>Add/Deduct</u>
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If the Bidder does not suggest any material or equipment alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any material or equipment alternate under the contract.

Signature of Authorized Representative of Bidder

BID FORM

Section 3 - Time Alternate

If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-1, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

If the Bidder does not suggest any time alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any time alternate under the contract.

Signature of Authorized Representative of Bidder

BID FORM

Section 4 - Subcontractors

For purposes of this contract, a Subcontractor is anyone (other than the Contractor) who performs work (other than or in addition to the furnishing of materials, plans or equipment) at or about the construction site, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any individual who furnishes merely the individual's own personal labor or services.

For the work outlined in these documents the Bidder expects to engage the following major subcontractors to perform the work identified.

<u>Subcontractor (Name and Address)</u>	<u>Work</u>	<u>Amount</u>
---	-------------	---------------

If the Bidder does not expect to engage any major subcontractor, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT expect to engage any major subcontractor to perform work under the contract.

Signature of Authorized Representative of Bidder

CONTRACT

THIS AGREEMENT is made on the ____ day of _____, 2015, between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 E. Huron Street, Ann Arbor, Michigan 48104 (“City”) and _____ (“Contractor”) _____

Based upon the mutual promises below, the Contractor and the City agree as follows:

ARTICLE I - Scope of Work

The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the project titled “Springwater Subdivision Improvements Project – Phase I” in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, which are incorporated as part of this Contract:

Human Rights Division Contract Compliance Forms	General Conditions
Living Wage Declaration of Compliance Forms (if applicable)	Standard Specifications Detailed Specifications
Bid Forms	Plans
Contract and Exhibits	Addenda
Bonds	

ARTICLE II - Definitions

Administering Service Area/Unit means Project Management Services Unit

Supervising Professional means Project Management Services Unit Manager acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Project means Devonshire, Belmont, Londonderry Water Main Replacement Project, ITB - 4373

ARTICLE III - Time of Completion

- (A) The work to be completed under this Contract shall begin immediately on the date specified in the Notice to Proceed issued by the City.
- (B) The entire work for this Contract shall be completed within scheduling requirements as specified in the Detailed Specifications.
- (C) Failure to complete all the work within the time specified above, including any extension granted in writing by the Supervising Professional, shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount specified in Detailed Specification for Project Schedule and Payment shown on Page DS-1. If any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

As an independent requirement, where the Detailed Specifications identify certain portions of the work to be completed within a shorter period of time and

the Contractor fails to complete each portion within the shorter period specified for each portion, including any extension granted in writing by the Project Supervisor, the City is entitled to deduct from the monies due the Contractor, as liquidated damages and not as a penalty, the amount identified in the Detailed Specifications for each portion of the work not timely completed for each calendar day of delay in completion of each portion of the work.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Liquidated damages under this section are in addition to any liquidated damages due under Section 5 of the General Conditions.

ARTICLE IV - The Contract Sum

(A) The City shall pay to the Contractor for the performance of the Contract, the unit prices as given in the Bid Forms for the estimated total of:

_____ Dollars (\$_____)

(B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the contract documents.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted without the written consent of the City.

ARTICLE VI - Choice of Law

This Contract shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this agreement, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract. The parties stipulate that the venue referenced in this Contract is for convenience and waive any claim of non-convenience.

Whenever possible, each provision of the contract will be interpreted in a manner as to be effective and valid under applicable law. The prohibition or invalidity, under applicable law, of any provision will not invalidate the remainder of the contract.

ARTICLE VII - Relationship of the Parties

The parties of the Contract agree that it is not a contract of employment but is a contract to accomplish a specific result. Contractor is an independent contractor performing services for the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not become, overdue or in default to the City for any contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this agreement.

ARTICLE VIII - Notice

All notices given under this contract shall be in writing, and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the contract documents or other address the Contractor may specify in writing.

ARTICLE IX - Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold harmless the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this contract, by the Contractor or anyone acting on the Contractor's behalf under this contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations or agreements whether written or oral. Neither party has relied on any prior representations in entering into this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

FOR the Contractor

By _____

Its: _____

FOR THE CITY OF ANN ARBOR

By _____

Christopher Taylor, Mayor

By _____

Jacqueline Beaudry, City Clerk

Approved as to substance

By _____

Steve Powers, City Administrator

By _____

Craig Hupy

Public Services Area Administrator

Approved as to form and content

Stephen K. Postema, City Attorney

PERFORMANCE BOND

- (1) _____ of _____ (referred to as "Principal"), and _____, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for \$ _____, the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written contract with the City dated July 21, 2014, for: the Devonshire, Belmont, Londonderry Water Main Replacement Project, File #2014-033, Bid #4373 and this bond is given for that contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.
- (3) Whenever the Principal is declared by the City to be in default under the contract, the Surety may promptly remedy the default or shall promptly:
- (a) complete the contract in accordance with its terms and conditions; or
 - (b) obtain a bid or bids for submission to the City for completing the contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, arrange for a contract between such bidder and the City, and make available, as work progresses, sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in paragraph 1.
- (4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the contract.
- (5) Surety agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder, or the specifications accompanying it shall in any way affect its obligations on this bond, and waives notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work, or to the specifications.

SIGNED AND SEALED this _____ day of _____, 2015.

(Name of Surety Company)

By _____
(Signature)

Its _____
(Title of Office)

(Name of Principal)

By _____
(Signature)

Its _____
(Title of Office)

Approved as to form:

Stephen K. Postema, City Attorney

Name and address of agent:

LABOR AND MATERIAL BOND

(1) _____ of _____, (referred to as "Principal"), and

, a corporation duly authorized to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of

\$ _____, for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.

(2) The Principal has entered a written contract with the City, dated _____, 2015, for Devonshire, Belmont, Londonderry Water Main Replacement Project, File #2014-033, Bid #4373; and this bond is given for that contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;

(3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required under the contract, the Surety shall pay those claimants.

(4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no obligation if the Principal promptly and fully pays the claimants.

SIGNED AND SEALED this _____ day of _____, 2015.

(Name of Surety Company)

By _____
(Signature)

Its _____
(Title of Office)

(Name of Principal)

By _____
(Signature)

Its _____
(Title of Office)

Approved as to form:

Name and address of agent:

Stephen K. Postema, City Attorney

GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

The contract documents shall be signed in 2 copies by the City and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Bid.

Section 2 - Order of Completion

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

Section 3 - Familiarity with Work

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the City upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

Section 4 - Wage Requirements

Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section."

Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

Further, to the extent that any employees of the Contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with Section 1:319 of Chapter 14 of Title I of the Code of the City of Ann Arbor, the Contractor agrees to conform to Chapter 23 of Title I of the Code of the City of Ann Arbor, as amended, which in part states:

1:814. Applicability.

- (1) This Chapter shall apply to any person that is a contractor/vendor or grantee as defined in Section 1:813 that employs or contracts with five (5) or more individuals; provided, however, that this Chapter shall not apply to a non-profit contractor/vendor or non-profit grantee unless it employs or contracts with ten (10) or more individuals.
- (2) This Chapter shall apply to any grant, contract, or subcontract or other form of financial assistance awarded to or entered into with a contractor/vendor or grantee after the effective date of this Chapter and to the extension or renewal after the effective date of this Chapter of any grant, contract, or subcontract or other form of financial assistance with a contractor/vendor or grantee.

1:815. Living Wages Required.

- (1) Every contractor/vendor or grantee, as defined in Section 1:813, shall pay its covered employees a living wage as established in this Section.
 - (a) For a covered employer that provides employee health care to its employees, the living wage shall be \$9.42 an hour, or the adjusted amount hereafter established under Section 1:815(3).
 - (b) For a covered employer that does not provide health care to its employees, the living wage shall be \$10.91 an hour, or the adjusted amount hereafter established under Section 1:815(3).
- (2) In order to qualify to pay the living wage rate for covered employers providing employee health care under subsection 1:815(1)(a), a covered employer shall furnish proof of said health care coverage and payment therefor to the City Administrator or his/her designee.
- (3) The amount of the living wage established in this Section shall be adjusted upward no later than April 30, 2002, and every year thereafter by a percentage equal to the percentage increase, if any, in the federal poverty guidelines as published by the United States Department of Health and Human Services for the years 2001 and 2002. Subsequent annual adjustments shall be based upon the percentage increase, if any, in the United States Department of Health and Human Services poverty guidelines when comparing the prior calendar year's poverty guidelines to the present calendar year's guidelines. The applicable percentage amount will be converted to an amount in cents by multiplying the existing wage under Section 1.815(1)(b) by said percentage, rounding upward to the next cent, and adding this amount of cents to the existing living wage

levels established under Sections 1:815(1)(a) and 1:815(1)(b). Prior to April 1 of each calendar year, the City will notify any covered employer of this adjustment by posting a written notice in a prominent place in City Hall, and, in the case of a covered employer that has provided an address of record to the City, by a written letter to each such covered employer.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision covering subcontractor's employees who perform work on this contract.

Section 5 - Non-Discrimination

The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of Section 209 of the Elliot-Larsen Civil Rights Act (MCL 37.2209). The Contractor further agrees to the nondiscrimination provisions of Chapter 112 of the Ann Arbor City Code and to take affirmative action to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment. The Contractor agrees to comply with the provisions of Section 9:161 of Chapter 112 of the Ann Arbor City Code and in particular the following excerpts:

9:161 NONDISCRIMINATION BY CITY CONTRACTORS

- (1) All contractors proposing to do business with the City of Ann Arbor shall satisfy the nondiscrimination administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All contractors shall receive approval from the Director prior to entering into a contract with the City, unless specifically exempted by administrative policy. All City contractors shall take affirmative action to insure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon race, national origin or sex.
- (2) Each prospective contractor shall submit to the City data showing current total employment by occupational category, sex and minority group. If, after verifying this data, the Director concludes that it indicates total minority and female employment commensurate with their availability within the contractor's labor recruitment area, i.e., the area from which the contractor can reasonably be expected to recruit, said contractor shall be accepted by the Director as having fulfilled affirmative action requirements for a period of one year at which time the Director shall conduct another review. Other contractors shall develop an affirmative action program in conjunction with the Director. Said program shall include specific goals and timetables for the hiring and promotion of minorities and females. Said goals shall reflect the availability of minorities and females within the contractor's labor recruitment area. In the case of construction contractors, the Director shall use for employment verification the labor recruitment area of the Ann Arbor-Ypsilanti standard metropolitan statistical area. Construction contractors determined to be in compliance shall be accepted by the Director as having fulfilled affirmative action requirements for a period of six (6) months at which time the Director shall conduct another review.
- (3) In hiring for construction projects, contractors shall make good faith efforts to employ local persons, so as to enhance the local economy.
- (4) All contracts shall include provisions through which the contractor agrees, in addition to any other applicable Federal or State labor laws:
 - (a) To set goals, in conference with the Human Resources Director, for each job category or division of the work force used in the completion of the City work;
 - (b) To provide periodic reports concerning the progress the contractor has made in meeting

the affirmative action goals it has agreed to;

- (c) To permit the Director access to all books, records and accounts pertaining to its employment practices for the purpose of determining compliance with the affirmative action requirements.
- (5) The Director shall monitor the compliance of each contractor with the nondiscrimination provisions of each contract. The Director shall develop procedures and regulations consistent with the administrative policy adopted by the City Administrator for notice and enforcement of non-compliance. Such procedures and regulations shall include a provision for the posting of contractors not in compliance.
- (6) All City contracts shall provide further that breach of the obligation not to discriminate shall be a material breach of the contract for which the City shall be entitled, at its option, to do any or all of the following:
 - (a) To cancel, terminate, or suspend the contract in whole or part and/or refuse to make any required periodic payments under the contract;
 - (b) Declare the contractor ineligible for the award of any future contracts with the City for a specified length of time;
 - (c) To recover liquidated damages of a specified sum, said sum to be that percentage of the labor expenditure for the time period involved which would have accrued to minority group members had the affirmative action not been breached;
 - (d) Impose for each day of non-compliance, liquidated damages of a specified sum, based upon the following schedule:

<u>Contract Amount</u>	Assessed Damages Per Day of <u>Non-Compliance</u>
\$ 10,000 - 24,999	\$ 25.00
25,000 - 99,999	50.00
100,000 - 199,999	100.00
200,000 - 499,999	150.00
500,000 - 1,499,999	200.00
1,500,000 - 2,999,999	250.00
3,000,000 - 4,999,999	300.00
5,000,000 - and above	500.00

- (e) In addition the contractor shall be liable for any costs or expenses incurred by the City of Ann Arbor in obtaining from other sources the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under this contract.

Section 6 - Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

Section 7 - Qualifications for Employment

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.

Section 8 - Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the City harmless from loss on account of infringement except that the City shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the City has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

Section 9 - Permits and Regulations

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The City shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

Section 10 - Protection of the Public and of Work and Property

The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private

property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to its work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or employees of the City. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

Section 11 - Inspection of Work

The City shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

Section 12 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

Section 13 - Changes in the Work

The City may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

Section 14 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

- (1) When work under an extra work order is added to the work under this Contract;
- (2) When the work is suspended as provided in Section 20;
- (3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;
- (4) Delays in the progress of the work caused by any act or neglect of the City or of its employees or by other Contractors employed by the City;
- (5) Delay due to an act of Government;
- (6) Delay by the Supervising Professional in the furnishing of plans and necessary information;
- (7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section 13. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

- (1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;
- (2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
- (3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;
- (4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
- (5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the City will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The City will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2.

Section 17 - Deductions for Uncorrected Work

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

Section 18 - Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the City and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the City may remove them and, if the removed material has value, may store the material at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the City may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the City the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the

decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

Section 19 - Acceptance and Final Payment

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the City under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the City:

- (1) The consent of the surety to payment of the final estimate;
- (2) The Contractor's Affidavit in the form required by Section 44.

In case the Affidavit or consent is not furnished, the City may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.

The making and acceptance of the final payment shall constitute a waiver of all claims by the City except those arising from:

- (1) unsettled liens;
- (2) faulty work appearing within 12 months after final payment;
- (3) hidden defects in meeting the requirements of the plans and specifications;
- (4) manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

Section 20 - Suspension of Work

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the City does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

Section 21 - Delays and The City's Right to Terminate Contract

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the City may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the City may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any excess cost to the City. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the City, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The City may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the City for any excess cost incurred. The expense incurred by the City, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

Section 22 - Contractor's Right to Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the City, terminate this Contract and recover from the City payment for all acceptable work executed plus reasonable profit.

Section 23 - City's Right To Do Work

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the City, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

Section 24 - Removal of Equipment and Supplies

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the City, shall promptly remove any part or all of its equipment and supplies from the property of the City, failing which the City shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the City and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the City upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

Section 25 - Responsibility for Work and Warranties

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the City for damages to materials and equipment from any cause except negligence or willful act of the City. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days.

The Contractor shall assign all manufacturer or material supplier warranties to the City prior to final payment. The assignment shall not relieve the Contractor of its obligations under this paragraph to correct defects.

Section 26 - Partial Completion and Acceptance

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the City, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the City may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the

Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

Section 27 - Payments Withheld Prior to Final Acceptance of Work

The City may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the City from loss on account of:

- (1) Defective work not remedied;
- (2) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
- (3) Failure of the Contractor to make payments properly to subcontractors or for material or labor;
- (4) Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the City which will protect the City in the amount withheld, payment shall be made for amounts withheld under this section.

Section 28 - Contractor's Insurance

A. The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself from all claims for bodily injuries, death or property damage which may arise under this Contract; whether the acts were made by the Contractor or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:

1. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident

Bodily Injury by Disease - \$500,000 each employee

Bodily Injury by Disease - \$500,000 each policy limit

2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further, the following minimum limits of liability are required:

\$1,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.

\$2,000,000 Per Job General Aggregate

\$1,000,000 Personal and Advertising Injury

\$2,000,000 Products and Completed Operations Aggregate

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.
 4. Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.
- B. Insurance required under Section A.2 and A.3 of this Contract shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.
- C. In the case of all Contracts involving on-site work, the Contractor shall provide to the City before the commencement of any work under this Contract documentation demonstrating it has obtained the above mentioned policies. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies to the Administering Service Area/Unit at least ten days prior to the expiration date.
- D. Any Insurance provider of Contractor shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the City.

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

- (1) A Performance Bond to the City of Ann Arbor for the amount of the bid(s) accepted;
- (2) A Labor and Material Bond to the City of Ann Arbor for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the City in a manner and by a Surety Company satisfactory to the City Attorney.

Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the City or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

Section 31 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

Section 32 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the City.

Section 33 - Rights of Various Interests

Whenever work being done by the City's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

Section 34 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the City. The approval will not be given until the Contractor submits to the City a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the City may require.

The Contractor shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

Section 35 - Supervising Professional's Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

Section 36 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the City or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

Section 37 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the City unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

Section 38 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the City, any additional land and access that may be required for temporary construction facilities or for storage of materials.

Section 39 - Cleaning Up

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the City's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

Section 40 - Salvage

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain City property and shall be transported or

stored at a location as the Supervising Professional may direct.

Section 41 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written City approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The City may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

Section 42 - Sales Taxes

Under State law the City is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in City projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period _____, 20___, to _____, 20___, performed any work, furnished any materials, sustained any loss, damage or delay, or otherwise done anything in addition to the regular items (or executed change orders) set forth in the Contract titled Devonshire, Belmont, Londonderry Water Main Replacement Project, for which I shall ask, demand, sue for, or claim compensation or extension of time from the City, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement attached regarding a request for additional compensation or extension of time.

Contractor _____ Date _____

By _____
(Signature)

Its _____
(Title of Office)

Past due invoices, if any, are listed below.

CONTRACTOR'S AFFIDAVIT

The undersigned Contractor, _____, represents that on _____, 20_____, it was awarded a contract by the City of Ann Arbor, Michigan to under the terms and conditions of a Contract titled Devonshire, Belmont, Londonderry Water Main Replacement Project.

The Contractor represents that all work has now been accomplished and the Contract is complete.

The Contractor warrants and certifies that all of its indebtedness arising by reason of the Contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the project, as well as all other claims arising from the performance of the Contract, have been fully paid or satisfactorily settled. The Contractor agrees that, if any claim should hereafter arise, it shall assume responsibility for it immediately upon request to do so by the City of Ann Arbor.

The Contractor, for valuable consideration received, does further waive, release and relinquish any and all claims or right of lien which the Contractor now has or may acquire upon the subject premises for labor and material used in the project owned by the City of Ann Arbor.

This affidavit is freely and voluntarily given with full knowledge of the facts.

Contractor

By

(Signature)

Its

(Title of Office)

Subscribed and sworn to before me, on this _____ day of _____, 20_____
_____, _____ County, Michigan

Notary Public

My commission expires on:

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Advertisement. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications included in these contract documents.

A copy of the Public Services Department Standard Specifications may be purchased from the Engineering Division, (Fourth Floor, City Hall, Ann Arbor, Michigan), for \$35.00 per copy. In addition, a copy of these Standard Specifications is available for public viewing at the Engineering Division office, for review Monday through Friday between the hours of 8:30 a.m. and 4:00 p.m.

Copies of the Standard Specifications can also be downloaded from the web link:

http://www.a2gov.org/government/publicservices/project_management/privatedev/pages/standardspecificationsbook.aspx.

DETAILED SPECIFICATION FOR PROJECT SCHEDULE

Examination of Plans, Specifications, and Work Site: Bidders shall carefully examine the Bid Form, plans, specifications and the work site until the Bidder is satisfied as to all local conditions affecting the contract and the detailed requirements of construction. The submission of the bid shall be considered prima facie evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and all requirements of the contract.

The entire work under this Contract shall be completed in accordance with, and subject to, the scheduling requirements as outlined below, and all other requirements of the Contract Documents.

1. By no later than **June 10, 2015** the Contractor shall submit a detailed schedule of work for the Engineer's review and approval. The proposed schedule must fully comply with the scheduling requirements contained in this Detailed Specification. The Contractor shall update the approved work schedule each week and present it to the Engineer at the weekly progress meeting.
2. The Contractor will receive two (2) copies of the Contract, for his/her execution, on or before **June 2, 2015**. The Contractor shall properly execute both copies of the Contract and return them, with the required Bonds and Insurance Certificate, to the City by **June 12, 2015**.
3. Contractor may begin construction on or before **June 15, 2015** and only after receiving the copy of executed contract documents and the Notice to Proceed from the City. Appropriate time extensions shall be granted if the Notice to Proceed is delayed due to the circumstances controlled by the City.
4. By **August 15, 2015** or within **sixty (60)** calendar days from the date of Notice to Proceed for the work, the Contractor must install the new water main; all of the required service leads to the water main and complete all the remaining work under this Contract. Failure to complete all work as specified herein within the times specified herein, including time extensions granted thereto as determined by the Engineer, shall entitle the City to deduct from the payments due the Contractor, **\$500.00** in "Liquidated Damages", and not as a penalty, for each and every calendar day beyond the allowed number of calendar days to complete the above specified work.

The Contractor may propose to adjust the limits or sequencing of construction in order to complete the work more efficiently. Changes to the recommended construction sequence must be approved in writing by the Engineer prior to construction and must assure all required coordination with other projects and time lines.

This project will require additional coordination with DTE Michcon, who is expected to be on site replacing their existing gas main and renewing services. The sequence of construction may be altered to work around the gas main installation and renewal of gas services. Please see Appendix C for DTE plans for the proposed new gas mains.

This project will require additional coordination with the City of Ann Arbor 2015 Street Resurfacing Contract. The final street restoration including placement of the concrete curb and gutter, concrete sidewalk, drive approaches, bituminous pavement and turf restoration will be performed under separate contract.

Time is of the essence in the performance of the work of this contract. The Contractor is expected to mobilize sufficient personnel and equipment, and work throughout all authorized hours in order to complete the project by the final completion date. Costs for the Contractor to organize, coordinate, and schedule all of the work of the project, will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions, Modified, Max. \$_____."

Liquidated Damages will be assessed until the required work is completed in the current construction season. If, with the Engineer's approval, work is extended beyond seasonal limitations, the assessment of Liquidated Damages will be discontinued until the work is resumed in the following construction season.

PHASING SEQUENCE

In order to allow sufficient time to complete the road construction phase of the project, any water main installation not begun by **August 1, 2015** may, at the sole discretion of the Engineer, be postponed until the following construction season, or eliminated from this Contract entirely. If any portion of the project is postponed or eliminated, the Contractor must still complete all work on the remaining portion of the project within the current construction season. The Contractor will not be entitled to receive any additional compensation for the elimination or postponement of work from the enactment of this contract clause.

MEASUREMENT AND PAYMENT

If the construction contract is not completed within the estimated **sixty (60)** consecutive calendar days, and any extensions of time granted thereto, at the sole discretion of the City of Ann Arbor, this Contract may be terminated with no additional compensation due to the Contractor, and the Contractor may be forbidden to bid on future City of Ann Arbor projects for a period of at least three (3) years. If the Engineer elects to terminate the Contract, contract items paid for on a Lump Sum basis shall be paid up to a maximum percentage equal to the percentage of the contract work that has been completed.

Costs for the Contractor to organize, coordinate, and schedule all of the work of the project, will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions, Modified, Max.\$_____." If the City elects to terminate this Construction Contract due to non-performance, contract items paid for on a Lump Sum basis will be pro-rated based on percentage equal to the percentage of the contract work completed.

DETAILED SPECIFICATION FOR MAINTENANCE OF TRAFFIC

DESCRIPTION

Traffic shall be maintained in accordance with the City of Ann Arbor Public Services Department Standard Specifications except as specified in Sections 104.11, 812, and 922 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, the Michigan Manual of Uniform Traffic Control Devices, Latest Revised Edition (MMUTCD) and as amended herein.

The Contractor shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights within the project and around the perimeter of the project for the safety and protection of local traffic. This includes, but is not limited to, advance, regulatory, and warning signs; barricades and channeling devices at intersecting streets on which traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets; changeable message signs; lighted arrow boards, and moving traffic control devices for construction operations. Payment shall be paid for as "Minor Traffic Devices".

MATERIALS

The materials and equipment shall meet the requirements specified in the corresponding sections of the MDOT 2012 Standard Specifications for Construction and MMUTCD.

Maintenance of Local Traffic

Unless otherwise indicated on the plans, all side roads shall not be closed to through traffic except during construction operations of short duration and only upon written approval of the Engineer.

Local access shall be maintained at all times for emergency vehicles, refuse pick-up, mail delivery and ingress/egress to private properties.

Contractor must accommodate the safe access to the residential buildings and businesses located within construction area.

A lane-closure permit shall be obtained by the Contractor from the Project Management Unit, at least 48 hours in advance of any proposed lane or street closing.

The hours of work on all Local streets are 7:00 a.m. to 8:00 p.m., Monday through Saturday, or as specified on the lane-closure permit. No equipment will be allowed in the street before or after these hours. Local streets may only be closed to through traffic (local access only) with written authorization of the Engineer. Work must be completed each day such that all streets are re-opened to through traffic by 8:00 p.m. unless otherwise specified, directed, or authorized in writing by the Engineer. All major changes in traffic control shall be made either between 9:30 a.m. and 3:30 p.m., or between 7:00 p.m. and 6:30 a.m. in order to minimize interference with rush-hour traffic. All traffic controls must be in-place and ready for traffic each day by 6:30 a.m. and 3:30 p.m.

Driveways shall not be blocked for extended periods of time unless arrangements can be made with the affected property owner(s). When it becomes necessary to temporarily block driveways, the Contractor shall notify the affected property owners in advance to coordinate the work and allow sufficient time for vehicles to vacate from properties. It may be necessary to allow for vehicles to temporarily park in the roadway at locations that do not interfere with the Contractor's work. During these periods the owners of the respective vehicles must be available to, with proper notice, move their vehicles if it becomes necessary to accommodate the work.

The Contractor shall maintain pedestrian traffic at all times covered under the pay item "Minor Traffic Devices, Modified". For maintaining normal pedestrian traffic while performing sidewalk and driveway repair, Type I barricades shall be placed by the Contractor, as directed by the Engineer. "Sidewalk Closed" and/or "Cross Here" signs shall be placed, by the Contractor, when directed by the Engineer.

During the construction of the water main and storm sewer, parking of residences in the construction area will not be allowed. Temporary "No Parking" signs will be supplied by the City. Any vehicle parked in the construction zone shall be ticketed and towed at the owner's expense.

At times when it becomes necessary to temporarily obstruct local traffic during the performance of the work, the Contractor shall provide traffic regulation in conformance with Chapter 6E of the MMUTCD. A minimum of two traffic regulators are required. The cost of traffic regulation shall be included in the contract pay item "Minor Traffic Devices"

The Contractor shall use quantities of dust palliative, maintenance aggregate, and cold patching mixture for use as temporary base, surfacing, and dust control at utility crossings, side roads and driveways (wherever required to maintain traffic), and where directed by the Engineer to maintain local access. The cost for the use of dust palliative, maintenance aggregate and HMA wedging mixture, as required and directed by the Engineer for maintenance of traffic and local access, shall be included in contract pay item "Item No 201, General Conditions, Modified, Max. \$ _____" and it will not be paid for separately.

Maintain access to all mailboxes for users and the U.S. Postal Service at all times. Mailboxes and newspaper boxes that are in the right of way where construction is to be performed shall be removed and reset immediately in a temporary location near the construction area that is approved by the Engineer. The Contractor may propose the temporary relocation of mail boxes, subject to the approval of the Engineer. In either case, the temporary relocation of mail boxes will not be paid for separately. There are 16 mailboxes located within the project grading limits that may need to be temporarily relocated and then re-established in their permanent locations. Upon completion of the construction, all mailboxes and newspaper boxes, including their supports, shall be repositioned in their permanent locations, outside of sand filters, as approved by the Engineer. This work shall be included in the contract unit price for the contract pay item "Item No 201, General Conditions, Modified, Max. \$ _____" and it will not be paid for separately.

The Contractor shall perform the work of this Contract while maintaining traffic in accordance with the Contract Documents as specified herein.

The City will not allow any shut down of existing water mains without prior written approval of construction methods and timing of shut down, by the City of Ann Arbor and the Engineer. All water main valves are to be operated by City of Ann Arbor personnel.

Contractor is allowed to develop alternative phasing plans, but must be approved by Engineer prior to the start of construction.

All traffic control measures shall remain in place per approved plans and specifications until final street restoration work is completed by City of Ann Arbor 2015 Street Resurfacing Contract. Contractor shall be responsible for maintaining the traffic control measures until the City Contractor for 2015 Street Resurfacing Contract mobilizes to the site. The City will notify Contractor of the completion of the final street restoration work and the Contractor will be required to remove all traffic control measures at this time. The timeframe between completion of the utility work and completion of the final street restoration is not expected to exceed 90 calendar days. This work shall be included in the bid price for the contract pay item "Item No. 203, Minor Traffic Devices, Modified, Max. _____."

**DETAILED SPECIFICATION
FOR
ITEM #201 – GENERAL CONDITIONS, MODIFIED, MAX. \$50,000**

DESCRIPTION

This item shall include all work described and required by the Plans and Specifications for which no item of work is listed in the Bid Form, including but not limited to:

- Scheduling and organization of all work, subcontractors, suppliers, testing, inspection, surveying, and staking
- Coordination of, and cooperation with, other contractors, agencies, departments, and utilities
- Protection and maintenance of Utilities
- Placing, maintaining, and removing all soil erosion and sedimentation controls (as specified or as shown on project plans)
- Maintaining drainage
- Maintaining driveway drive openings, sidewalks, bike paths, mail deliveries, and solid waste/recycle pick-ups. This includes the placement and maintenance of gravel in driveway openings as directed by the Engineer
- Storing all materials and equipment off lawn areas
- Temporary relocation and final replacement/re-setting of mailboxes
- Site clean-up
- Coordination efforts to furnish various HMA mixtures as directed by the Engineer
- Coordination efforts to furnish and operate various-size vehicles/equipment as directed by the Engineer
- Furnishing and operating vacuum-type street cleaning equipment a minimum of once per week or more frequently as directed by the Engineer
- Furnishing and operating vacuum-type utility structure cleaning equipment
- Furnishing and operating both vibratory plate and pneumatic-type (“pogo-stick”) compactors
- Furnishing and operating a backhoe during all work activities
- Furnishing and operating a jackhammer and air compressor during all work activities
- Noise and dust control
- Mobilization(s) and demobilization(s)
- Furnishing submittals and certifications for materials and supplies
- Disposing of excavated materials and debris
- Removal of shrubs, brush, and trees less than 8” diameter as directed by Engineer
- Trimming of trees to accommodate intersection sight distance as shown on plans and directed by Engineer.
- Fencing to protect excavation over 1’ in depth during non-work hours and trees as shown on plans or as directed by the Engineer. The fencing must be a minimum of 36” high, be constructed of orange HDPE material, and reasonably secured to prevent access.
- All miscellaneous and incidental items such as overhead, insurance, and permits.
- Meeting all requirements relating to Debarment Certification, Davis Bacon Act, and Disadvantaged Business Enterprise, and providing the necessary documentation.

MEASUREMENT AND PAYMENT

This item of work will be paid for on a pro rata basis at the time of each progress payment. Measurement will be based on the ratio between work completed during the payment period and the total contract amount. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 Lump Sum, minus any deductions incurred for inadequate performance as described herein. This amount will not be increased for any reason, including extensions of time, extras, and/or additional work.

The completed work as measured for this item of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

PAY ITEM

General Conditions, Modified, Max. \$50,000

PAY UNIT

Lump Sum

The unit price for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #202 – DIGITAL AUDIO VISUAL COVERAGE**

DESCRIPTION

This work shall include digital audiovisual record of the physical, structural, and aesthetic conditions of the construction site and adjacent areas as provided herein. This work will be performed for the entire project limits for Phase 2014 prior to the start of construction.

The audio-visual record shall be:

1. Of professional quality, providing a clear and accurate audio and visual record of existing conditions.
2. Prepared within the four (4) week period immediately prior to the start of construction
3. Furnished to the Engineer a minimum of one (1) week prior to bringing any materials or equipment within the areas described in this Detailed Specification.
4. Carried-out under the supervision of the Engineer.

The Contractor shall furnish one (1) copy of the completed audiovisual record to the Engineer. An index of the footage shall be included, including the street and house number, which will enable any particular area of the project to be easily found. This includes indexing the files according to street. The Contractor shall retain a second copy of the audiovisual record for his/her own use.

Any portion of the record determined by the Engineer to be unacceptable for the documentation of existing conditions shall be recorded again at the Contractor's sole expense prior to mobilizing onto the site.

PRODUCTION

The audio-visual record shall be completed in accordance with the following minimum requirements:

1. DVD Format, No Editing – The audio-visual record shall be done in color using equipment that allows audio and visual information to be recorded. Editing of the digital record, other to provide stationing and annotation on address, shall not be allowed and the speed and electronics of the videotaping equipment and DVD shall be equal to the 1080p video-recording standard.
2. Perspective / Speed / Pan / Zoom – To ensure proper perspective, the distance from the ground to the camera lens shall not be less than 5 feet and the recording must proceed in the general direction of travel at a speed not to exceed 48 feet per minute. Pan and zoom rates shall be controlled sufficiently so that playback will ensure quality of the object viewed.
3. Display – The recording equipment shall have transparent time, date stamp and digital annotation capabilities. The final copies of the tape shall continuously and simultaneously display the time (hours:minutes:seconds) and the date (month/date/year) in the upper left-hand corner of the frame. Accurate project stationing, where applicable, shall be included in the lower half of the frame in standard format (i.e. 1+00). Below the stationing periodic information is to be shown, including project name, name of area shown, street address, direction of travel, viewing direction, etc.

If in the event, the stationing has not been established on-site, refer to the plans and approximate the proposed stationing.

4. Audio Commentary / Visual Features – Locations relative to project limits and landmarks must be identified by both audio and video means at intervals no less frequent than 100 feet along the recording route. Additional audio commentary shall be provided as necessary during recording to describe streets, buildings, landmarks, and other details, which will enhance the record of existing conditions.

5. Visibility / Ground Cover – The recording shall be performed during a time of day when good visibility is available. Recording shall not be performed during periods of precipitation or when snow, leaves, or other natural debris obstruct the area being recorded. The Contractor shall notify the Engineer in writing in the event that the weather or snow cover is anticipated to cause a delay in recording the audio-visual record.

COVERAGE

The audio-visual record coverage shall include the following:

1. General Criteria – This general criteria shall apply to all recording and shall include all areas where construction activities will take place or where construction vehicles or equipment will be operated or parked and or where materials will be stored. The recording shall extend an additional 50 feet outside of all areas of construction. The recording shall include all significant, existing man-made and natural features including driveways, sidewalks, utility covers, utility markers, utility poles, other utility features, traffic signal structures and features, public signs, private signs, fences, landscaping, trees, shrubs, other vegetation, and other similar or significant features.
2. Other Areas – The Contractor shall record at his sole expense other areas where, in his/her opinion, the establishment of a record of existing conditions is warranted. The Contractor shall notify the Engineer in writing of such areas.
3. Street List – This item shall include the recording of all of the streets as listed in the Detailed Specification for Progress Schedule and Construction Limits.

The Engineer may direct the recording of other minor areas not specified herein at the Contractor’s sole expense.

AUDIOVISUAL RECORDING SERVICES

The following companies are known to be capable of providing the audio-visual recording services required by this Detailed Specification and shall be utilized, unless the Contractor receives prior written approval from the Engineer to utilize another company of comparable or superior qualifications.

- Construction Video Media
- Midwest Company
- Topo Video, Inc.
- Video Media Corp

MEASUREMENT AND PAYMENT

The completed work as measured for these items of work will be paid for at the Contract Unit Prices for the following Contract (Pay) Items:

PAY ITEM

Digital Audio Visual Coverage

PAY UNIT

Lump Sum

Audiovisual Record Coverage shall include all labor, equipment, and materials required to perform the recording and to provide the finished audio-visual record to the Engineer. The unit price includes recording the entire project limits, for each and every street, as described above.

**DETAILED SPECIFICATION
FOR
ITEM #203 - MINOR TRAFFIC DEVICES, MODIFIED, MAX. \$20,000**

DESCRIPTION

The work of Temporary Traffic Devices shall consist of protecting and maintaining vehicular and pedestrian traffic as shown on the plans, in the Maintenance of Traffic specification, and as directed by the Engineer, in accordance with Sections 103.05, 103.06, and 812 of the 2012 MDOT Standard Specifications for Construction; Part 6 of the Michigan Manual of Uniform Traffic Control Devices, Latest Revised Edition (MMUTCD); and the City Standard Specifications, except as modified herein. These devices include, but not limited to, advance, regulatory, and warning signs; barricades and channeling devices at intersecting streets on which traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets; changeable message signs; lighted arrow boards; sign/signal covers and pavement marking cover tape for construction operations.

The work of Minor Traffic Devices shall include, but not be limited to:

- The furnishing and operating of miscellaneous signs, warning devices, flag-persons, and cones;
- The operation of additional signs furnished by the City;
- Furnishing and installing meter bags;
- Coordinating with the City to have meter heads removed and reinstalled;
- Maintaining pedestrian traffic;
- Temporarily covering traffic controls;
- Temporarily covering existing signs as directed;
- Any and all other miscellaneous and/or incidental items which are necessary to properly perform the work.

The Contractor shall maintain vehicular and pedestrian traffic during the work by the use of flag-persons, channelizing devices, and signs as necessary, as directed by the Engineer, and in accordance with MMUTCD. Typical applications for maintaining pedestrian traffic in accordance with the MMUTCD are included in this detailed specification.

All traffic control measures shall remain in place per approved plans and specifications until final street restoration work is completed by City of Ann Arbor 2015 Street Resurfacing Contract. Contractor shall be responsible for maintaining the traffic control measures until the City Contractor for 2015 Street Resurfacing Contract mobilizes to the site. The City will notify Contractor of the completion of the final street restoration work and the Contractor will be required to remove all traffic control measures at this time. The timeframe between completion of the utility work and completion of the final street restoration is not expected to exceed 90 calendar days.

MATERIALS, EQUIPMENT, AND CONSTRUCTION METHODS

General

Materials and equipment shall meet the requirements specified in the above-designated sections of the MDOT Standard Specifications.

All temporary traffic/pedestrian control devices furnished by the Contractor shall remain the property of the Contractor. The City shall not be responsible for stolen or damaged signs, barricades, barricade lights or other traffic maintenance items. The Contractor shall replace missing traffic control devices immediately, at no additional cost to the City.

All existing signs, and signs erected by the City of Ann Arbor on this project shall be preserved, protected, and maintained by the Contractor. Existing City owned signs which are damaged by the Contractor during the work will be repaired by the City at the Contractor's expense.

The Contractor shall temporarily cover conflicting traffic and/or parking signs when directed by the Engineer.

When traffic control devices have been damaged by, or due to, the negligence of the Contractor, his subcontractors or material suppliers, the traffic control devices shall be replaced at the Contractor's expense.

Lighted Plastic Drums; Barricades; Temporary Signs; Portable Changeable Message Signs; Lighted Arrow Boards; Pavement Marking Cover Tape; Temporary Pavement Markings

The Contractor shall furnish and operate these items as directed by the Engineer.

Traffic control devices meeting current MDOT and MMUTCD specifications shall be used on this project.

Lighted plastic drums shall be sufficiently ballasted to minimize tipping.

Type I and III barricades shall have standard orange-and-white stripes on both sides of the barricade.

Sufficient signs shall be provided by the Contractor to ensure the safety of the workers and the general public in accordance with the current MMUTCD.

"Road Work Ahead" warning signs shall be placed, as indicated on the Plans, or as directed by the Engineer, prior to the start of work, regardless of the nature, magnitude or duration of the work.

Removable black pavement marking cover tape shall be used to cover conflicting pavement markings as directed by the Engineer.

Temporary pavement markings may be used within transition areas as directed by the Engineer and shall be removable.

MEASUREMENT AND PAYMENT

This item of work will be paid for on a pro rata basis at the time of each progress payment. Measurement will be based on the ratio between work completed during the payment period and the total contract amount. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 Lump Sum.

The completed work as measured for this item of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

PAY ITEM

Minor Traffic Devices, Modified, Max \$20,000

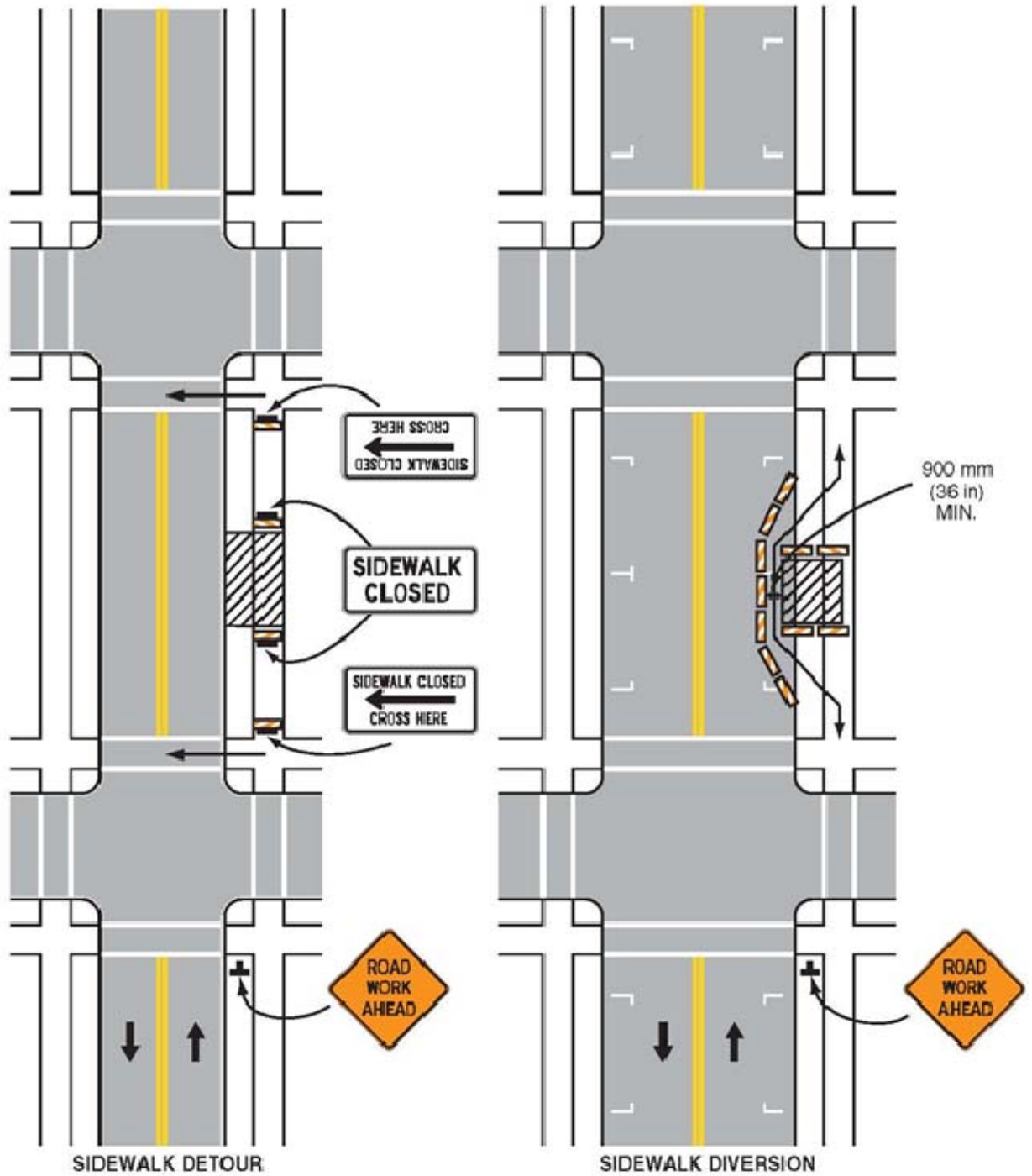
PAY UNIT

Lump Sum

The unit price for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.



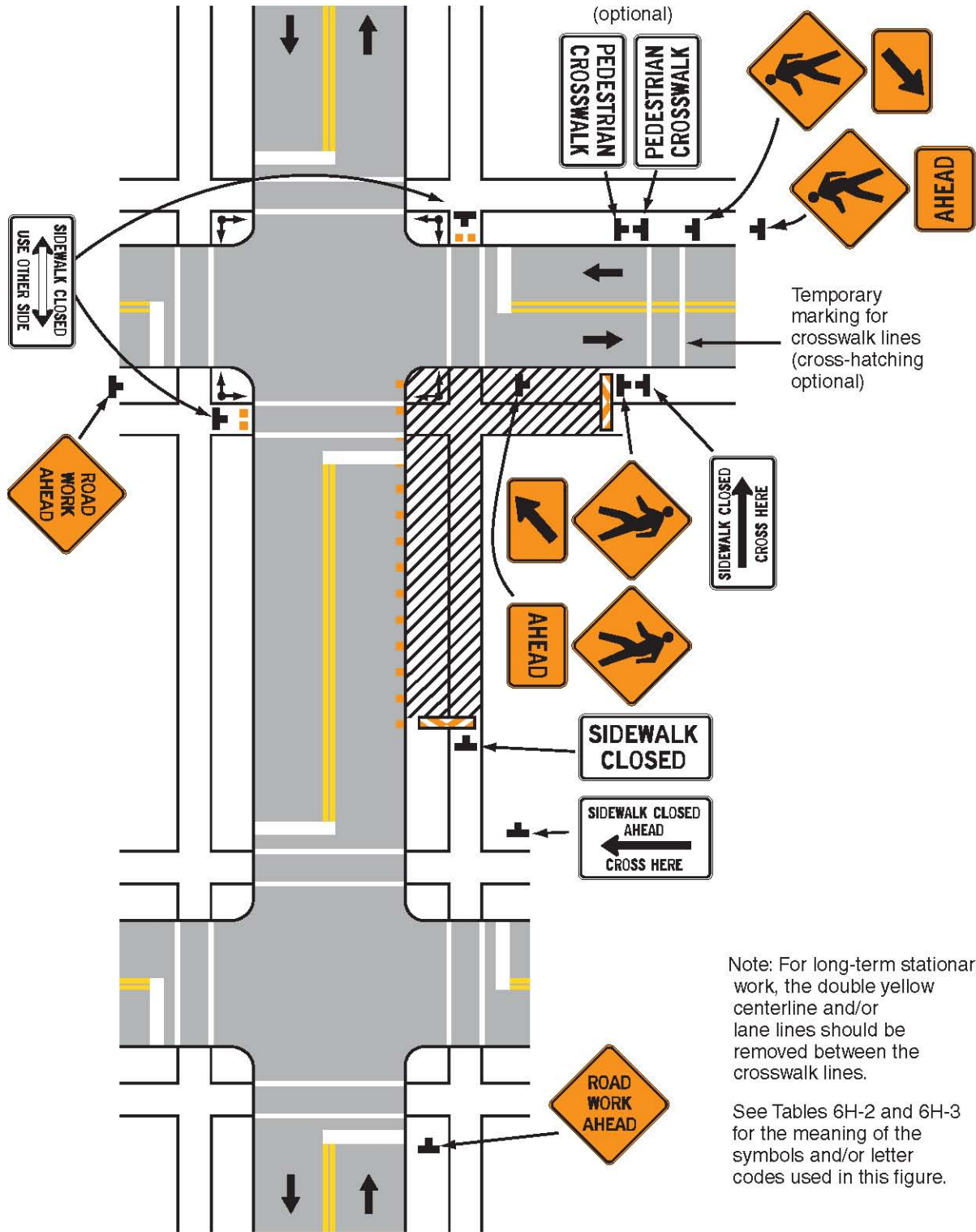
Figure 6H-28. Sidewalk Detour or Diversion (MI) (TA-28)



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Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.
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Figure 6H-29. Cross walk Closures and Pedestrian Detours (MI) (TA-29)

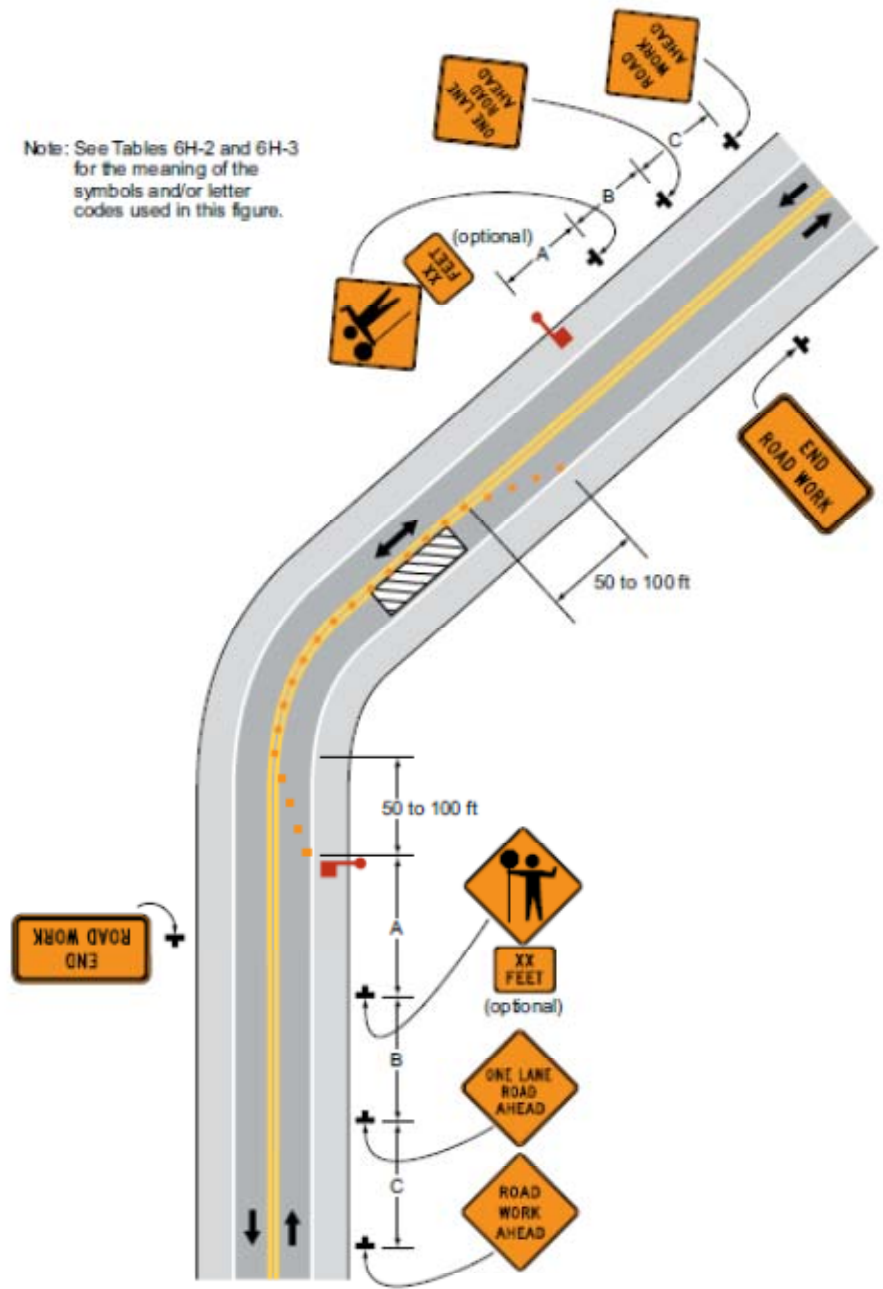


Note: For long-term stationary work, the double yellow centerline and/or lane lines should be removed between the crosswalk lines.

See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

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Figure 6H-10. Lane Closure on a Two-Lane Road Using Traffic Regulators (TA-10)



Typical Application 10

**DETAILED SPECIFICATION
FOR
ITEM #204 – CLEAN-UP AND RESTORATION, SPECIAL**

DESCRIPTION

This item of work shall conform to Division IX, Section II, Clean-Up & Restoration of the Public Services Area Standard Specifications, except as specified herein.

This project will require additional coordination with the City of Ann Arbor 2015 Street Resurfacing Contract. The final street restoration including placement of the concrete curb and gutter, concrete sidewalk, drive approaches, bituminous pavement and turf restoration will be performed under separate contract.

All traffic control measures shall remain in place per approved plans and specifications until final street restoration work is completed by City of Ann Arbor 2015 Street Resurfacing Contract. Contractor shall be responsible for maintaining the traffic control measures until the City Contractor for 2015 Street Resurfacing Contract mobilizes to the site. The City will notify Contractor of the completion of the final street restoration work and the Contractor will be required to remove all traffic control measures at this time. The timeframe between completion of the utility work and completion of the final street restoration is not expected to exceed 90 calendar days. This work shall be included in the bid price for the contract pay item "Item No. 203, Minor Traffic Devices, Modified, Max. \$_____."

This work shall include the removal of all surplus materials from the site including; but not limited to; tools, dirt, rubbish, construction debris, and excess excavated material.

MEASUREMENT AND PAYMENT

Measurement and payment for this item of work shall conform to Division IX, Section 2, Clean-Up & Restoration of the Public Services Area Standard Specifications except as modified herein.

This item of work will be paid for on a pro rata basis at the time of each progress payment. Measurement will be based on the ratio between work completed during the payment period and the total contract amount. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 Lump Sum.

The completed work as measured for this item of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

<u>Pay Item</u>	<u>Pay Unit</u>
Clean-Up & Restoration, Special	Lump Sum

**DETAILED SPECIFICATION
FOR
ITEM #205 – “NO PARKING” SIGNS**

DESCRIPTION

This work shall consist of installing, maintaining and removing of "No Parking" signs and posts, as outlined herein and as referenced on the plans. "No Parking" signs shall be installed in accordance with the Public Services Department Standard Specifications and the most recent version of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

MATERIAL

All materials for this work shall conform to the requirements of the Public Services Department Standard Specifications.

CONSTRUCTION METHODS

Prior to the commencement of any construction activity, the Contractor will be required to place "No Parking" signs where directed by the Engineer. The Contractor shall obtain a permit for "Permission to Prohibit On-Street Parking" from the City of Ann Arbor Project Management Unit. This permit shall be obtained a minimum of 48 hours prior to the posting of "No Parking" signs.

The City will furnish "No Parking" signs to the Contractor at no cost. The Contractor shall furnish the signposts and shall securely bolt the signs to the signposts as directed by the Engineer. The Contractor shall install the signposts at least two feet deep into the ground, and there shall be a minimum 6-foot and maximum 7-foot clearance maintained between the bottom of the sign and the ground. The signs are to be placed at 150-foot intervals (or as necessary) to eliminate parking in the construction area.

The installation of "No Parking" signs shall be in accordance with the permit. "No Parking" signs shall be installed by the Contractor, as directed by the Engineer, at least 24 hours prior to the proposed start-of-work/enforcement date. "No Parking" signs shall be returned to the City at the completion of the work. The cost of unreturned signs will be backcharged to the Contractor. "No Parking" signs shall be covered by the Contractor, thereby allowing on-street parking, until between 24 and 36 hours prior to the start of the work. "No Parking" signs shall be covered by the Contractor whenever there is no work being performed for a period of time longer than 72 hours.

MEASUREMENT AND PAYMENT

The unit price for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

"No Parking" signs will be measured as the maximum number installed on each street at any one time. The unit price includes the removal and return of "No Parking" signs to the City upon completion of the project. The Contractor shall be backcharged for the replacement costs for damaged or unreturned signs.

PAY ITEM

“No Parking” Signs

PAY UNIT

Each

**DETAILED SPECIFICATION
FOR**

ITEM 211 - REMOVE AND REPLACE 4 INCH OR 6 INCH SANITARY SEWER LEAD

DESCRIPTION

This work shall consist of removing and replacing existing sanitary lead pipe in new utility trenches as directed by engineer when conflicts with new utilities are identified or when the condition of the existing pipe prevents proper utility protection. Work includes cutting lead, carefully removing, replacing with SDR 35 PVC pipe and fittings along with Fernco connections. All materials need to accomplish this work is included in this pay item. All work shall be done in accordance with the City of Ann Arbor Public Services Department Standard Specifications, and as directed by the Engineer.

CONSTRUCTION METHODS

The Construction Methods shall meet all requirements of the City of Ann Arbor Standard Specifications.

Sewer leads are private and no official City records are kept. Approximate locations of leads have been placed on plans per survey data when available. Contractor to carefully excavate leads, not dig through lead but to saw cut out of way. Lead to be kept clean, have positive fall, and replaced as soon as possible. Contractor to coordinate with homeowner as needed to complete work. Trench must be carefully backfilled to prevent damage. Prior to placement of HMA contractor will have entire lead televised to verify condition of repaired sections and to verify sufficient slope has been provided. Any defects in the repaired sections shall be exposed and repaired at contractor's expense.

MEASUREMENT AND PAYMENT

The unit price for the pay item includes all labor, material and equipment costs associated with the complete installation of the sewer lead, as specified herein, including but not limited to, excavation MDOT CL II backfill, compaction.

Payment shall include all labor, equipment, and materials necessary to remove and store the existing sewer lead as directed by the Engineer.

The unit prices for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

PAY ITEM

Remove and Replace 4 inch or 6 inch Sanitary Sewer Lead

PAY UNIT

Linear Foot

**DETAILED SPECIFICATION
FOR
ITEM #220 – WATER MAIN PIPE ABANDONMENT, MODIFIED
ITEM #221 – FIRE HYDRANT ASSEMBLY ABANDONMENT**

DESCRIPTION

This work shall include abandoning existing water mains, valves, valve wells, valve boxes, and fire hydrant assemblies of various sizes as required by the Plans. All work shall be done in accordance with the City of Ann Arbor Public Services Department Standard Specifications, and as directed by the Engineer.

MATERIALS

All materials shall meet the requirements specified in Division 7 and 9 of the MDOT 2003 Standard Specifications for Construction as follows:

Mortar Type II Section 702

MDOT Class II Sand Section 902

Masonry Units Section 913

Push-on joint plugs, caps, air relief assemblies (for grouting purposes), and thrust blocks shall conform to the City of Ann Arbor Standard Specifications.

METHODS OF CONSTRUCTION

The Construction Methods shall meet all requirements of the City of Ann Arbor Standard Specifications.

In locations as shown on the Plans or where abandoned water main, valves or valve wells are within 2.5 feet of the proposed subgrade, the pipe, valves or valve wells shall be removed completely. The resulting hole or trench shall be backfilled with Class II Sand, in maximum lifts of 12 inches, and be compacted to 95% of its maximum unit weight, if located within the influence paved surfaces or structures. Otherwise, backfill shall be Engineer approved native material, compacted to 90% of its maximum unit weight, in lifts of 12 inches or less, unless otherwise noted on the plans. Caps or plugs shall be installed in accordance with plans or as specified by Engineer.

For all water mains to be abandoned that are greater than 10 inches in diameter, the Contractor shall drain water from abandoned pipe to an adjacent storm sewer, fill the abandoned pipe with 400 psi (minimum) concrete grout, and backfill and compaction of the trench at all access points.

Abandoned (salvaged) valve operating nuts, fire hydrant assemblies and structure covers shall be delivered to the City of Ann Arbor Field Services Unit located at the W.R. Wheeler Service Center at 4251 Stone School Road, Ann Arbor, MI 48108 within two days of their removal. Valve boxes should be disposed of at the contractor's sole expense.

MEASUREMENT AND PAYMENT

The unit price for the pay "Water Main Pipe Abandonment, Modified" shall be paid for on a lump sum (LS) basis and includes all labor, material and equipment costs necessary to abandon or remove the pipe including, but not limited to, excavation, cutting of pipe, push-on joint plugs, caps and thrust blocks, brick and mortar bulkheads, grouting, the furnishing, placement, and compaction of approved granular backfill material, as required, and the removal and proper disposal off-site of excess materials. In addition, this pay item includes the removal and salvage of valves, valve boxes, and manhole rings and covers, the removal of the top 4 feet of valve wells, and breaking out the valve well base.

The unit price for the pay item "Fire Hydrant Assembly Abandonment," includes all labor, material and equipment costs associated with the complete removal of the existing fire hydrant assembly, as specified herein, including but not limited to, excavation MDOT CL II Backfill and compaction; pipe cutting; thrust block removal; pipe plug; thrust block; salvaging of fire hydrant, valve and valve box and delivery

of fire hydrant, valve and valve box to the City of Ann Arbor Field Services Unit located at the W.R. Wheeler Service Center at 4251 Stone School Road, Ann Arbor, MI 48108.

PAY ITEM

Water Main Pipe Abandonment, Modified

Fire Hydrant Assembly Abandonment

PAY UNIT

Lump Sum

Each

The Item of work "Water Main Pipe Abandonment, Modified" will be paid for on a pro rata basis at the time of each progress payment. Measurement will be based on the ratio between work completed during the payment period and the total contract amount. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 Lump Sum, minus any deductions incurred for inadequate performance as described herein. This amount will not be increased for any reason, including extensions of time, extras, and/or additional work.

**DETAILED SPECIFICATION
FOR
ITEM #222 – TEMPORARY 4 INCH OR 6 INCH WATER MAIN LINE STOP
ITEM #223 – TEMPORARY 8 INCH WATER MAIN LINE STOP**

DESCRIPTION

All water main work shall be performed in accordance with the current City of Ann Arbor Public Services Area Standard Specifications and as detailed herein.

The Contractor shall furnish all materials, labor and equipment to properly install and set water main line stops into the existing water main(s) at the locations as shown on the plans or as directed by the Engineer.

If the existing mains, upstream and downstream of the proposed new water mains cannot be shut down or taken out of service, locations of proposed line stops will be identified by the Engineer. To ensure that the entire operation shall be accomplished without interruption of service or flow, the installation shall be accomplished by Contractor personnel skilled and experienced in the procedures specific to line stops of the required size(s).

The work shall include, but not be limited to; pavement saw-cutting; excavation and disposal of excavated material; the furnishing, installation, and removal of sheeting and/or shoring where needed; the furnishing, placement and compaction of approved bedding and backfill materials; furnishing and placing suitable, clean, gravel to create a stable working surface at the bottom of the excavation; de-watering; pipe cleaning, measuring, and performing all advance work necessary to prepare for the performance of the line stop; nighttime lighting as required; the removal of all materials and equipment associated with the work when no longer needed; and, any other items needed to complete the work as detailed on the plans and as specified herein.

MATERIALS

Bedding and backfill for areas contained within a segment of water main designated as Trench Detail I (under roadbed), Modified, shall be Granular Material, Class II, meeting the requirements of Section 902. For work within a segment of water main designated as Trench Detail V (outside of the 1:1 influence line of roadbed or curb and gutter), Modified, Granular Material, Class II and Engineer approved native material, placed in accordance with the trench details, shall be used.

The Contractor shall submit to the Engineer two (2) sets of drawings, furnished by manufacturers, fully and distinctly illustrated and describing the Line Stop fittings proposed to be furnished. Work shall not commence until such time as the drawings have been reviewed and accepted by the Engineer.

Line Stop Fittings shall be full encirclement, pressure retention type split tee. It shall consist of two steel weldments; an upper line stop flange saddle plate and a lower saddle plate. These two saddle plates shall be contiguous.

Line Stop Flange: The outlet of each fitting shall be machined from a 150 lb. forged steel flange (ASTM A181 or A105) or from pressure vessel quality steel plate (ASTM A285, Grade C); flat faced and drilled per ANSI B16.5). Suitable independently operated locking devices shall be provided in the periphery of the flange to secure the completion plug.

Line stop Nozzle: The nozzle, which lies between the saddle and the flange shall be fabricated from steel pipe (ASTM A234). After welding and stress relief, the nozzle shall be accurately bored as follows to accommodate the Line stop plugging head:

- a) Machine an internal circular shoulder to seal against the circumferential gasket carried on the plugging head.

Completion Plug: The completion plug shall be machined from a stress relieved carbon steel weldment. It shall contain two (2) circumferential grooves: one to receive the locking devices from the Line stop flange, and the second to contain a compressible "O" ring to seal pressure tight against the bore of the flange.

Blind Flange: Each Line stop fitting shall be closed with a blind flange. Facing and drilling of the blind flange shall be compatible with that of the Line stop flange. Minimum blind flange thickness shall be that of AWWA Spec. 207, Class D.

Saddle Alignment Marking: Each saddle-half shall be matched and marked with serial numbers, to insure proper alignment in the field.

Fasteners: All bolts, studs, and nuts used on Line stop, drain/equalization fittings, blind flange, and other elements that shall remain upon completion of the work shall be stainless steel and meet the requirements of ASTM F 593.

General: Manufacturer will exercise extreme care to insure that weldments are of adequate strength, properly shaped, securely reinforced, and free from distortion that could stress the ductile iron main during installation, pressure tapping, or Line stopping operations. All steel shall meet the requirements of ASTM A36, as a minimum. All weldments shall be braced and stress relieved.

Gaskets: Shall be molded from elastomer compounds that resist compression setting and are compatible with water in the 32 to 140 deg. F temperature range.

Upper Line stop Flange Saddle: Shall consist of a saddle plate, a Line stop flange, and a Line Stop nozzle. The interior of the saddle plate, adjacent to and concentric with the O.D. of the nozzle, shall be grooved to retain a gasket which shall seal the saddle plate to the exterior of the ductile iron main. This gasket shall constitute the only seal between the main and the fitting. The flange saddle shall also meet the following requirements:

- a) Saddle plate shall be of a minimum of 0.375" in thickness. It shall be shaped to be concentric to the outside of the ductile iron main. The smallest I.D. of the saddle and its interior rings shall exceed the O.D. of the main by a minimum of 0.250" to allow for ovality of the main;
- b) Line stop nozzle of 0.375" min. wall thickness shall be securely welded to the saddle plate;
- c) The Line Stop flange shall be securely welded to the nozzle. After welding, the assembly shall be braced, stress relieved, and bored to receive the completion plug and the circumferential gasket of the Line Stop machine plugging head; and,
- d) Bolt, nut of stud, nut, and washer assemblies shall be furnished to draw the upper and lower saddles together for sealing. Bolting brackets shall be gusseted.

Lower Saddle Plate: Saddle plate shall be of a minimum 0.375" thickness and shall be shaped to be concentric to the outside brackets shall match upper half.

EQUIPMENT

The equipment shall consist of a cylindrical plugging head that contains a flat, expandable elastomer sealing element. The plugging head shall be advanced into and retracted from the main by means of a linear actuator. When retracted, the plugging head and carrier are housed in an adapter, bolted pressure tight between the tapping valve and the actuator.

Sealing Element: The element shall be monolithically molded from a suitable polyurethane compound. The element shall be flat in a plane perpendicular to the flow in the main. Minimum thickness of the

element shall be 4". The bottom of the element shall be semi-circular to conform to the bore of the main.

Drilling equipment: Shall be in good working condition, equipped with power drive to insure smooth cutting, and to minimize shock and vibration. Cutting equipment shall be carbide tipped and capable of being replaced without removal from the jobsite.

Plugging Head: The diameter of the cylindrical plugging head shall be slightly smaller than the bore of the Line Stop nozzle. The plugging head shall have a suitable circumferential gasket to seal against the shoulder in the Line stop nozzle. This gasket shall also seal against the sealing element to prevent bypass flow around the Line stop.

Deposits in Bore of Main: The semi-cylindrical bottom of the plugging head shall be designed to break and dislodge tuberculation and other deposits in the bore of the main which might interfere with a satisfactory Line stop.

CONSTRUCTION METHODS

Installation of proposed line stops mains will require work in close proximity to existing utilities. This must be taken into consideration when the contractor determines the required trench safety requirements. All excavation shall conform to MIOSHA Standards; the Contractor is solely responsible for determining all excavation and trench safety requirements.

If necessary, The City will reduce the pressure to 100 psig or less for the duration of the installations. The entire operation of installing the line stop shall be accomplished without reduction of water pressure in the main(s) below 100 psig. It shall be the responsibility of the Contractor to verify pressure prior to commencing the installation.

Preliminary Field Inspection of Water Main:

Dimensional, specification, and other data regarding the existing mains have been taken from existing records. This information may be inaccurate, out of date, and/or inadequate. The data have not been verified by field inspections. Further, the water main consists of ductile iron pipe which may contain dimensional and structural flaws. In addition, the Contractor shall anticipate that exterior main conditions, bells, service connections, or presence of adjoining utilities may require relocation of proposed line stop. Prior to proceeding with the installation of any line stop, it is necessary to know the exact main outside diameter of the water main, if it has any ovality, and the internal diameter of the pipe before line stop fittings and plugging head sealing elements can be manufactured and/or ordered.

Prior to ordering material, Contractor shall excavate at each proposed location and carefully measure the outside diameter of the water main with calipers along at least four (4) locations to determine ovality and the critical outside diameter of the water main. The Contractor shall determine main wall thickness, uniformity, and structural integrity by means of ultrasonic testing. Data shall be taken to determine extent of internal deposits, tuberculation, etc..

If the Engineer determines that Contractor's data are not adequate, the Engineer may direct Contractor to make one or more pressure taps on main to obtain test pipe coupons for the Engineer's evaluation. The minimum size of the test coupon shall be 5" diameter, drilled through a nominal 6" valve. Pressure tapping saddles and other materials used for inspection taps shall conform to the requirements of this Special Provision. The Contractor shall anticipate that heavy interior corrosion and/or tuberculation exists within the water main.

If, in Engineer's opinion, the proposed location is unsatisfactory based on measurements of the

existing pipe at the locations of the proposed line stops, the Engineer will direct excavation at another site. Excavating, de-watering, inspections, backfill, and restoration will be paid for separately in accordance with the applicable contract unit prices or Section 109.05.C and 109.05.D whichever the Engineer deems most appropriate.

Because of possible internal corrosion and deposits in existing water mains, a "bottle-tight" shut down may not occur. A satisfactory shutdown which allows the work to be accomplished (i.e. valve replacement, water main tie-in, etc.) using drainage pumps to de-water excavations, with workmen wearing boots and raingear, if necessary, must be obtained. The Contractor will not be allowed to proceed with further work until an acceptable shutdown is achieved. The Contractor shall be aware that this may require the halting of work and re-scheduling of all work operations.

Contractor shall power wire brush and grind the exterior of the water main to remove any debris, corrosion deposits, or other surface irregularities that might interfere with proper seating and sealing of each line stop fitting against each main. Any structural defects in the water main, service connections, appurtenances, adjacent utilities, etc., that could interfere with the line stop installation shall be immediately reported to Engineer.

All line stop fittings and appurtenances shall be cleaned and disinfected in accordance with the current City of Ann Arbor Public Services Area Standard Specifications prior to bolting any of the line stop fittings in place or commencing any pipe cutting.

Contractor shall fit upper and lower saddle plate assemblies to main, thoroughly checking for proper fit to main. Under no circumstances shall Contractor attempt to force, reshape, or bend saddle plates by excessive tightening of saddle studs while the line stop fitting is assembled around the main. Any required retrofitting shall be accomplished with the fitting removed from the main. Any damage to fitting, accessories, or main shall be repaired at Contractor's expense to the satisfaction of Engineer.

Upper and Lower saddle halves shall be drawn together by bolt assemblies and the Saddle plates shall be bolted together in the horizontal position.

All line stop work shall be performed in accordance with the equipment manufacturers approved work procedures and installation guidelines.

Final closure of the water main shall be accomplished by insertion of a manufacturer-approved completion plug. The Contractor shall test the completion plug sealing through the use of a bleed off assembly in the machine housing.

The Contractor shall remove the temporary valve and the installation of a blind flange shall be completed.

The Contractor shall place polyethylene encasement meeting the requirements of the City of Ann Arbor Standard Specifications for Construction around the upper and lower saddle halves, the blind flange, and to a point at least 1 foot on either side of the saddle halves. All polyethylene encasement shall be securely taped to the water main such that water entry is minimized to the greatest extent possible.

MEASUREMENT AND PAYMENT

The unit prices for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

PAY ITEM

PAY UNIT

Temporary 4 inch or 6 inch Water Main Line Stop

Each

Temporary 8 inch Water Main Line Stop

Each

**DETAILED SPECIFICATION
FOR
ITEM #225 – 6 INCH WRAPPED UNDERDRAIN**

DESCRIPTION

This work shall consist of furnishing and installing 6 inch diameter geotextile-wrapped, perforated or slotted underdrain pipe, using MDOT 2NS, as directed by the Engineer, for all backfill material.

MATERIALS

The materials shall meet the requirements referenced in Section 404 of the 2012 edition of the MDOT Standard Specifications, except as specified herein.

The Geotextile Filter Fabric for encasing the underdrain pipe shall be an approved material such as nylon, polypropylene, fiberglass, or polyester, and shall be either woven, heat bonded, knitted, or of continuous fibers. The geotextile shall completely cover and be secured to the pipe. In an un-stretched condition, knitted polyester fabrics shall weigh at least 3.0 ounces per square yard, and all other geotextiles shall weigh at least 3.5 ounces per square yard. The fabric shall be strong and tough and have a porosity such that the fabric will retain soil particles larger than 0.106 mm (no. 140 sieve) and shall pass aggregate particles finer than 0.025 mm. Geotextiles shall be stored and handled carefully and in accordance with the both the manufacturer's recommendations and the Engineer's direction, and shall not be exposed to heat or direct sunlight. Torn or punctured geotextiles shall not be used.

CONSTRUCTION METHODS

Geotextile wrapped underdrain shall be installed as shown on the Plans or as directed by the Engineer and in accordance with Section 404 of the 2012 edition of the MDOT Standard Specifications, except as specified herein.

The installation of underdrain shall precede all other construction activities including but not limited to pavement milling, pavement pulverization, pavement removal, pavement patching, and curb repair.

The Contractor shall excavate, cut, remove stumps, remove brush, remove pavement, grade, and trim as needed and as directed, and shall import, furnish, fill, place, grade, and compact MDOT 2NS fine aggregate to construct underdrain as specified on the Plans, or as directed by the Engineer.

The trench shall be constructed to have a minimum width of 18-inches, and shall be typically excavated to the depth specified in the Plans or directed by the Engineer.

The underdrain shall be installed at the line, grade, and depth specified on the Plans or as directed by the Engineer. The minimum percent grade shall be 0.5%, and the minimum cover from top-of-pipe to finished top-of-curb grade shall be 4-feet. The Contractor shall maintain line and grade by means of a laser. The Engineer will not provide line, grade or staking.

Upgrade ends of the pipe shall be closed with suitable plugs to prevent entrance of trench backfill material. All couplings, tees, plugs, and other fittings shall be manufactured and installed so as to prevent any infiltration of trench backfill material.

The Contractor shall tap at least one end of the underdrain into a storm sewer structure, as directed by the Engineer.

During the construction of underdrain runs, the Engineer may direct the Contractor to terminate or modify underdrain construction due to conflicts with buried obstructions or if the minimum 4-foot cover cannot be maintained. There will be no adjustment to the Contract Unit Price due to changes in quantity.

The first lift (bedding) of backfill shall be MDOT 2NS material to a maximum thickness of 3-inches. Subsequent lifts shall be MDOT 2NS material to a maximum thickness of 12 inches.

Removed or excavated materials which are not incorporated into the work shall become the property of the Contractor and shall be immediately removed and properly disposed of off-site. Removed or

excavated materials may not be stockpiled overnight on, or adjacent to, the site.

All structures, inlets and manholes shall be maintained free of accumulations of silt, debris, and other foreign matter throughout construction, until the time of final acceptance.

MEASUREMENT AND PAYMENT

Connecting (tapping) underdrain(s) into drainage structure(s) will not be paid for separately, but shall be included in the bid price for this item of work.

Underdrain will be measured in-place by length in linear foot.

The completed work as measured for this item of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

PAY ITEM

6 Inch Wrapped Underdrain

PAY UNIT

Linear Foot

The unit price for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #227 - SUBGRADE UNDERCUTTING - TYPE II**

DESCRIPTION

This work includes removal of unsuitable granular base, subbase or clay material(s) to depths as specified by the Engineer.

CONSTRUCTION METHOD

After the pavement has been removed, and/or after rough/finish grading, and/or at the time of proofrolling, the Engineer may inspect the grade to determine the need for, and the limits of, undercuts. After undercut areas are excavated to the depths as directed by the Engineer, the areas shall be trimmed, shaped, evenly graded and recompact to not less than 95% of the soils maximum unit weight as determined by the AASHTO T-180 test. The Contractor shall properly dispose of all excess materials.

Subgrade Undercutting - Type II shall be backfilled with Class II Sand or other material(s), as directed by the Engineer. The backfill material shall be compacted to not less than 98% of its maximum unit weight as determined by the AASHTO T-180 test. The fill material(s) for Subgrade Undercutting Type II shall be paid at the Contract unit price for the corresponding items of work as used which is Sand Subbase Course, Class II - C.I.P.

The Contractor shall remove, salvage, deliver to any location within the City limits, and neatly stack/stockpile all bricks, if present, as directed by the Engineer.

The Contractor shall remove, add to, re-shape, re-grade, and re-compact the existing roadbed materials, and shall construct the roadway to the cross-section(s) as indicated on the Plans, as detailed in the Specifications, and as directed by the Engineer. The Contractor shall use blade graders, maintainers, vibratory rollers, and/or other equipment as necessary, and as directed by the Engineer, for this work. Use of each specific piece of equipment is subject to the approval of the Engineer.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The Contractor shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

MEASUREMENT AND PAYMENT

These items of work shall be measured for payment by calculating the volume of the undercut excavation prior to the placement of backfill.

The completed work as measured for these items of work will be paid for at the Contract Unit Prices for the following Contract (Pay) Items:

PAY ITEM

Subgrade Undercutting - Type II

PAY UNIT

Cubic Yard

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #230 - SEWER BULKHEAD, 4-INCH THROUGH 18-INCH DIAMETER**

DESCRIPTION AND MATERIALS

This work shall consist of constructing 12-inch Sewer, Trench Detail I, Modified storm sewers, and constructing sewer bulkheads, including the removal of existing storm sewers, as specified herein, as shown on the Plans, and as directed by the Engineer.

Materials shall meet the requirements of the City of Ann Arbor Standard Specifications. The sewer pipe may be either C-76 CL.IV R.C.P. or HDPE as specified in Division III.2B of the City Standard Specifications.

CONSTRUCTION METHODS

The Contractor shall install 12-inch Storm Sewer, and Sewer Bulkheads, as shown on the Plans, as detailed in the City Standard Specifications, and as directed by the Engineer.

The Contractor shall remove and properly dispose of all excavated materials, removed storm sewer and debris, and shall make connections between new and existing pipe and/or structures by means of appropriate "Fernco" type joint fasteners/couplings (or other methods approved by the Engineer), and bulkhead or abandon existing pipe and structures, all as directed by the Engineer.

The Contractor shall maintain line and grade of the sewer by means of a laser. The Engineer will establish line and grade for the sewer construction and will provide cut sheets for the Contractor's use.

All sewer removals shown on the Plans shall be included in the item of work "12-Inch Sewer, Trench Detail I, Modified".

In areas where the road is to be reconstructed, the Contractor may elect to perform sewer work prior to the removal of pavement and subgrade preparation. In such cases, the work associated with pavement removal, excavation, backfill, and the temporary patching of the trench as necessary for traffic maintenance, will not be paid for separately, but shall be included in these items of work. The Contractor shall place and compact Class II sand backfill in the trench up to the elevation where the prepared base or subbase is to begin, or as directed by the Engineer.

MEASUREMENT AND PAYMENT

Furnishing and placing flowable fill as backfill for these items will not be paid separately, but shall be included in the bid prices for these items of work.

The completed work as measured for these items of work will be paid for at the Contract Unit Price for the following Contract (Pay) Items:

PAY ITEM

PAY UNIT

Sewer Bulkhead, 4-Inch Through 18-Inch Diameter

Each

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #240 – TEMPORARY HMA PAVMENT**

DESCRIPTION

This work shall consist of patching existing HMA and concrete pavements as specified in Division 5 of the 2012 edition of the MDOT Standard Specifications, current supplemental MDOT specifications, and the City of Ann Arbor Standard Specifications, except as modified herein, and as directed by the Engineer.

MATERIALS

The HMA mixtures to be used for this work shall be MDOT No. 11A, 36A, 13A, 2C, 3C, or 4C, as directed by the Engineer.

Asphalt Binders shall be grade PG 52-28, PG 58-22, PG 58-28, or PG 64-22, as directed by the Engineer, and shall meet the requirements specified in Section 904 of the 2012 edition of the MDOT Standard Specifications, and any current supplemental MDOT specifications.

The Aggregate Wear Index (AWI) number for this project is 260. This AWI number applies to all aggregates used in all top course mixtures. Blending aggregates to achieve this AWI requirement is permitted in accordance with current MDOT Standards, and Supplemental Specifications.

CONSTRUCTION METHODS

All areas excavated on any given day shall be patched, compacted and opened to traffic, that same day.

The Contractor shall provide a 10-foot long straight-edge during all paving operations.

The aggregate base and/or subgrade of all patch areas which are, or become, damp or wet, shall be dried by aerating, or by other methods approved by the Engineer.

The aggregate base and/or subgrade of each patch shall be evenly graded and trimmed, and shall be compacted by the use of a vibratory plate compactor or other approved method(s) to not less than 98% of its maximum unit weight.

Prior to placing HMA patching material, all patch areas shall be cleaned with compressed air, and/or vacuum type street cleaning equipment (Vac-all), to remove dirt and loose material. Compressed air shall be from a source which provides a minimum of 90 psi and 150 cubic feet per minute of air at the nozzle.

All asphalt and concrete surfaces within all patch areas shall be covered with MDOT SS-1h bond coat, applied at a rate of 0.05 gallons/square yard. The bond coat shall be applied with a power distributor hand sprayer.

The Contractor shall use an asphalt paver or spreader box to place HMA mixtures. The Contractor shall not use a grader, front-end loader or any similar device to place HMA mixtures. For small areas, where approved by the Engineer, the Contractor may place the material by hand directly into patch areas. The Contractor shall not place HMA materials on adjacent pavement surfaces.

HMA mixtures shall be placed in lifts not exceeding 3-inches (approximately 3½-inch loose). Each layer of HMA mixture shall be compacted to between 92 to 96 percent (or as determined acceptable by the

engineer) of the theoretical maximum density, as listed on the approved Job Mix Formula.

HMA mixtures shall be compacted by the use of an approved vibratory roller. At small patches, an approved vibratory plate compactor shall be used.

Spot Wedging, Spot Leveling, and Finish Patching shall be performed in accordance with this Detailed Specification and as directed by the Engineer, using the HMA mixture(s) directed by the Engineer.

The completed work of patching, spot wedging, spot leveling and finished patching shall provide a smooth riding surface, to the satisfaction of the Engineer.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The Contractor shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

MEASUREMENT AND PAYMENT

Measurement shall be by the ton, in place. Unused HMA material shall be returned to the plant and re-weighed, and a corrected weight slip shall be provided to the Engineer. Weight slips shall include the type of mixtures (codes are not acceptable), as well as the truck number, gross weight, tare weight and net weight.

Price adjustments shall be enforced as described at Section 4.00.19 MDOT Standard Specifications (1990 edition), and will be based on testing reports provided by the City's testing representatives.

The completed work as measured for these items of work will be paid for at the Contract Unit Prices for the following Contract (Pay) Items:

<u>PAY ITEM</u>	<u>PAY UNIT</u>
Temporary HMA Pavement	Ton

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #252 - AGGREGATE BASE COURSE, 21AA - C.I.P.**

DESCRIPTION

This work shall consist of constructing an aggregate subbase or base course on an existing aggregate surface, or on a prepared subgrade in accordance with Sections 301, 302 and 307 of the 2012 edition of the MDOT Standard Specifications for Construction, except as specified herein.

MATERIAL

The materials used for this work shall be MDOT 21AA and Class II granular material meeting the requirements of the City of Ann Arbor Standard Specifications.

CONSTRUCTION METHOD

Sand or aggregate courses shall not be placed if, in the opinion of the Engineer, there are any indications that they may become frozen before their specified densities are obtained.

Sand or aggregate courses shall not be placed on a frozen base, subbase or subgrade.

The Contractor shall not use rubber-tired equipment on the grade, when its use causes, or may cause, in the opinion of the Engineer, damage to the grade. The Contractor shall conduct his/her operation(s), and provide all necessary equipment, to insure the satisfactory completion of the work without damaging the grade. This includes the transporting, stockpiling, rehandling, and movement of materials over additional distances, in lieu of driving on an unprotected, or partially unprotected, grade.

The Contractor is solely responsible for the maintenance and protection of the grade. Further, any damage to the grade which, in the opinion of the Engineer, is caused as a result of the Contractor's operation(s), or his/her subcontractors' or suppliers' operation(s), shall be repaired by the Contractor at the Contractor's expense. This includes any additional earthwork and/or maintenance materials as directed by the Engineer, for the purposes of the Contractor's maintenance and protection of the grade.

The Contractor shall shape the base, subbase and subgrade to the elevations, crowns, and grades as specified on the Plans and as directed by the Engineer. This may include regrading the subbase to provide different crown grades than those existing prior to the construction.

The Contractor shall remove, add to, re-shape, re-grade, and re-compact the existing roadbed materials, and shall construct the roadway to the cross-section(s) as indicated on the Plans, as detailed in the Specifications, and as directed by the Engineer. The Contractor shall use blade graders, maintainers, vibratory rollers, and/or other equipment as necessary, and as directed by the Engineer, for this work. Use of each specific piece of equipment is subject to the approval of the Engineer.

The Contractor shall maintain the base, subbase and subgrade in a smooth, well drained condition at all times.

Sand and aggregate courses shall be placed in uniform layers such that when compacted, they have the thicknesses shown on the Plans, or as directed by the Engineer. The loose measure of any layer shall not be more than 9-inches or less than 4-inches.

Sand subbase and aggregate base courses shall be compacted to not less than 98% of their respective maximum unit weights, as determined by the AASHTO T-180 test.

All granular materials shall be deposited from trucks or through a spreader in a manner that will minimize segregation of material.

Manholes, valve boxes, inlet structures and curbs shall be protected from damage. Manholes & inlet structures shall be continuously cleaned of construction debris and properly covered at all times during the construction. Upon completion of each day's work, manholes, water valve boxes, inlets and catch basins shall be thoroughly cleaned of all extraneous material.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The Contractor shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

MEASUREMENT AND PAYMENT

Where granular materials are used as base, as subbase, or as fill for excavations in Machine Grading areas, items of work "Aggregate Base Course, 21AA -C.I.P." and "Sand Subbase Course, CL II - C.I.P." shall be measured and paid accordingly.

Where granular materials are used as fill for undercuts at locations other than Machine Grading areas, item of work "21AA Limestone - C.I.P.", "Aggregate Base Course, 21AA -C.I.P." and/or "Sand Subbase Course, CL II - C.I.P." shall be measured and paid accordingly.

The completed work as measured for these items of work will be paid for at the Contract Unit Prices for the following Contract (Pay) Items:

PAY ITEM

Aggregate Base Course, 21AA - C.I.P.

PAY UNIT

Cubic Yard

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #260 - REMOVE HMA PAVEMENT**

DESCRIPTION

This work shall consist of removing HMA surface/base as described in the City of Ann Arbor Standard Specifications, except as modified herein, and as directed by the Engineer.

CONSTRUCTION METHOD

The Contractor shall remove HMA surfaces, HMA bases, and brick bases of any thickness from any aggregate and/or concrete base course, without the removal of the aggregate or concrete base, all as shown on the Plans, as marked in the field, and as directed by the Engineer.

The Contractor shall remove, salvage, deliver to any location within the City limits or City-owned property, and neatly stack/stockpile all bricks, if present, as directed by the Engineer.

The Contractor shall remove and properly dispose of all excavated material and debris, including all asphalt and concrete. The Contractor shall not stockpile excavated material overnight on, or adjacent to, the site.

In areas where HMA pavement removal is to be performed adjacent to existing HMA pavement that is to remain, the pavement shall be saw cut prior to removal. Backhoe teeth, jackhammers equipped with spike points, milling machines, and backhoe mounted wheel cutters shall not be used.

Damage to adjacent pavement, pavement base, subbase, curb, gutter, sidewalk, utility structures, or other site features, due to removal operations shall be repaired by the Contractor, at the Contractor's expense, as directed by the Engineer.

The Contractor shall construct butt-joints, and trim butt-joints just prior to HMA paving as shown on the Plans, and as directed by the Engineer.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The Contractor shall not be entitled to any additional compensation for the use of alternate equipment, or work task deferral.

MEASUREMENT AND PAYMENT

The areas to be removed shall be marked and measured prior to the removal of any material. Measurement shall take place with both the Engineer and the Contractor (or their agents) present. Both parties shall come to an agreement regarding removal quantities prior to the actual removal of HMA pavement.

The completed work as measured for these items of work will be paid at the Contract Unit Prices for the following Contract (Pay) Item:

<u>PAY ITEM</u>	<u>PAY UNIT</u>
Remove HMA Pavement	Square Yard

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #261 - REMOVE CONCRETE CURB OR CURB & GUTTER - ANY TYPE
ITEM #262 - REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS**

DESCRIPTION

This work shall consist of removing concrete curb, gutter, curb and gutter, integral curb, sidewalk, sidewalk ramps, drive openings, and drives as shown on the Plans, as detailed in the Specifications, and as directed by the Engineer, in accordance with Section 204 of the 2012 edition of the MDOT Standard Specifications for Construction, except as specified herein, and as directed by the Engineer.

CONSTRUCTION METHOD

The Contractor shall remove concrete curb, gutter, curb & gutter, integral curb, sidewalk, sidewalk ramps, drive openings, and drives, all regardless of the type and thickness, and all as shown on the Plans, as detailed in the Specifications, and as directed by the Engineer.

Prior to the start of removals, the Engineer and Contractor together shall field measure all removals.

The Contractor shall perform full-depth saw cutting at removal limits, including those necessary to construct 2-foot wide City of Ann Arbor Type M drive openings, and including those necessary to provide for the partial removal of existing drive approaches as shown on the Plans, as directed by the Engineer, and as marked for removal. The Contractor shall cut steel reinforcement bars as directed by the Engineer at all areas of removal.

The Contractor shall remove, salvage, deliver to any location within the City limits, and neatly stack/stockpile all bricks, if present, as directed by the Engineer.

The Contractor shall excavate, cut, remove stumps, remove brush, grade, and trim as needed and as directed, and shall import, furnish, fill, place, grade, and compact granular material as needed to: construct new concrete items; to repair or replace existing concrete items; to relocate existing concrete items to their new specified/directed elevations/locations, including all necessary grading at elevation changes of curb and gutter, sidewalks and ramps; and at locations where existing concrete items are to be removed and turf is to be established in its place.

The Contractor shall coordinate with the City Forester prior to the removal of any tree roots.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The Contractor shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

The Contractor shall re-shape, re-grade, and re-compact the existing roadbed materials to the cross-section(s) as indicated on the Plans, as detailed in the Specifications, and as directed by the Engineer. The Contractor shall use blade graders, maintainers, vibratory rollers, and/or other equipment as necessary, and as directed by the Engineer. The use of each specific piece of equipment is subject to the approval of the Engineer.

The Engineer may direct aggregate base materials to be either removed from or added to the job-site, to properly complete the work. Where the Engineer directs the addition of such materials, they shall be paid for as either the Item of Work: "21AA Limestone - C.I.P.", "Aggregate Base Course, 21AA - C.I.P." or "Sand Subbase Course, CL II - C.I.P.". Where the Engineer directs such materials to be removed, they will not be paid for separately, but shall be included in the appropriate concrete removal item.

Where existing concrete curb & gutter is to be replaced on a street with a concrete (or brick) base, the Engineer may direct the Contractor to remove a 1-to-2-foot wide, full-depth section of pavement and pavement base from immediately in front of the curb & gutter. As part of this pavement/base removal, the Contractor shall perform additional (double) full-depth saw-cutting along the entire removal limits,

and shall take sufficient care so as not to damage and/or disturb any adjacent pavement, pavement base, and/or any other site feature, all as directed by the Engineer. The removals shall be to a sufficient width and depth to allow for the placement and removal of the curb & gutter formwork. After the removal of the formwork, the Contractor shall replace the concrete base to its original thickness and elevation(s).

Excavated/removal areas shall be adequately protected with barricades or fencing at all times.

Removed or excavated materials which are not incorporated into the work shall become the property of the Contractor and shall be immediately removed and properly disposed of off-site. Removed or excavated materials may not be stockpiled overnight on, or adjacent to, the site.

Subbase or subgrade removed without authorization by the Engineer shall be replaced and compacted by the Contractor at the Contractor's expense, with materials specified by the Engineer.

The Contractor shall restore all disturbed areas to better than or equal to their original condition. This includes the placement and compaction of 2.5 inches of topsoil, followed by placement of grass seed, followed by the placement of 0.5 inches of topsoil at all turf restoration locations, and at locations where concrete items are removed and turf is to be established. All restoration work and materials shall be in accordance with the City Standard Specifications. Restoration work must be performed within one week of the placement of the wearing course for each street.

MEASUREMENT AND PAYMENT

Sidewalk ramp removal shall be measured and paid for as "Remove Concrete Sidewalk and Driveways - Any Thickness".

Payment for saw cutting to create or modify Type M openings, and to allow for the partial removal of existing drives shall be included in the price of the item of work, "Remove Concrete Sidewalk & Driveways - Any Thickness", and will not be paid for separately.

All sawcutting required for removals shall be included in the appropriate item of work, and will not be paid for separately.

Restoration work, including backfilling, compacting, HMA patching adjacent to concrete items, topsoiling and seeding will not be paid for separately, but shall be included in the appropriate associated items of work.

Concrete removal items shall be field measured and paid for at the Contract Unit Prices for their respective Contract (Pay) Items as follows:

PAY ITEM

Remove Concrete Curb or Curb and Gutter - Any Type
Remove Concrete Sidewalk and Drive - Any Thickness

PAY UNIT

Linear Foot
Square Foot

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM #272 – PLASTIC DRUM - LIGHTED – FURNISH & OPERATE
ITEM #273 – BARRICADE TYPE III - LIGHTED - FURNISH AND OPERATE
ITEM #274 – TEMPORARY SIGN - TYPE B**

DESCRIPTION

This work shall consist of protecting and maintaining vehicular and pedestrian traffic, in accordance with Sections 103.05, 103.06, and 812, of the 2012 MDOT Standard Specifications for Construction; Part 6 of the Michigan Manual of Uniform Traffic Control Devices, Latest Revised Edition (MMUTCD); and the City Standard Specifications, except as modified herein.

MATERIALS, EQUIPMENT, AND CONSTRUCTION METHODS

Materials and equipment shall meet the requirements specified in the above-designated sections of the 2012 MDOT Standard Specifications.

The Contractor shall maintain two-way traffic on major streets, access for local traffic on local streets, and keep all intersections open to traffic at all times, unless specifically authorized in writing by the Engineer.

Parking violation citations issued to the Contractor, subcontractor and material suppliers, including their employees, shall be enforced under appropriate City Code.

The Contractor shall replace missing or damaged traffic control devices, as directed by the Engineer. When traffic control devices have been damaged by, or due to, the negligence of the Contractor, his subcontractors or material suppliers, the traffic control devices shall be replaced at the Contractor's expense.

Lighted Plastic Drums; III Barricades; and B Temporary Signs

The Contractor shall furnish and operate these items as directed by the Engineer.

Type III Barricades shall have standard orange-and-white stripes on both sides of the barricade.

Sufficient signs shall be provided by the Contractor to insure the safety of the workers and the general public in accordance with the current MMUTCD.

"Construction Ahead" warning signs shall be placed, as indicated on the Plans, or as directed by the Engineer, prior to the start of work, regardless of the nature, magnitude or duration of the work.

MEASUREMENT AND PAYMENT

All temporary traffic/pedestrian control devices furnished by the Contractor shall remain the property of the Contractor. The City shall not be responsible for stolen or damaged signs, barricades, barricade lights or other traffic maintenance items. The Contractor shall replace missing traffic control devices immediately, at no additional cost to the City.

Costs for transporting barricades and other traffic control devices shall be included in the bid prices for the individual items of work.

Barricade Type III - Lighted - Furnish and Operate

Payment for furnishing and operating lighted Type III barricades shall be for the maximum quantity in-place at any one time during the work of the entire project (all streets).

Temporary Sign - Type B

Payment for Type B signs shall be for the maximum quantity used on each street.

Plastic Drum - Lighted – Furnish and Operate

There will be a one-time payment for each street for the maximum number of lighted drums in-place (operated) at any one time, as directed by the Engineer.

The completed work as measured for these items of work will be paid for at the Contract Unit Price for the following Contract (Pay) Items:

PAY ITEM

Plastic Drum - Lighted - Furnish & Operate
Barricade Type III - Lighted - Furnish and Operate
Temporary Sign, Type B

PAY UNIT

Each
Each
Square Foot

DETAILED SPECIFICATION FOR COORDINATION AND COOPERATION WITH OTHERS AND WORK BY OTHERS

The Contractor is reminded as to the requirements of article 104.07 of the 2012 edition of the MDOT Standard Specifications, "Cooperation by the Contractor."

The Contractor shall directly coordinate his/her work with individual City Departments/Divisions/Units.

The Contractor is hereby notified that the City of Ann Arbor Field Services Unit may be installing traffic control conduits, traffic signal sensors, and the like, at various locations.

No additional compensation will be paid to the Contractor, and no adjustments to contract unit prices will be made, due to delays and/or the failure of others in the performance of their work, nor for delays due to the encountering of existing utilities that are, or are not, shown on the Plans.

The following Utility Owners may have overhead and/or underground facilities located within the Right-of-Way:

- The City of Ann Arbor
- DTE - MichCon (Michigan Consolidated Gas Company)
- DTE - Edison (Detroit Edison Company)
- SBC - (Ameritech)
- Comcast
- MCI Communications
- Sprint Communications
- The University of Michigan

On all projects:

"3 Working Days before you Dig - Call MISS DIG - Toll Free" Phone No. 1-800-482-7171.

The Owners of public or private utilities which will not interfere with the completed project and which do not present a hazard to the public or an extraordinary hazard to the Contractor's operations will not be required to move their facilities on or from the street right-of-way.

Stoppages created solely by the operations of the utility companies which delay utility revisions on any portion of this project may be considered as a basis of claim for an extension of time for project completion.

Costs for this work will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions."

**DETAILED SPECIFICATION
FOR
SOIL EROSION CONTROL**

The Contractor shall furnish, place, maintain and remove soil erosion and sedimentation control measures, including but not limited to, silt fence and fabric filters at all drainage structures, all in accordance with all applicable City (and other governmental agencies) codes and standards, as directed by the Engineer, as detailed in the Standard Specifications, and as shown on the Plans.

DESCRIPTION

This work consists of installing and maintaining inlet filters in accordance with Section 208 of the 2012 Michigan Department of Transportation Standard Specifications for Construction and as shown on the plans. Filters shall be installed in existing and proposed inlets in order to minimize the erosion of soil and the sedimentation of water courses. The related work includes the installation, maintenance and removal of the filter cloth, cleaning as required during the performance of the project work, removing and disposing of accumulated sediment, and replacement of filters if required by the Engineer so as to provide a properly working inlet filter and a well-drained site.

MATERIALS

The inlet filters shall be in accordance with the REGULAR FLOW SILTSACK® manufactured by ACF Environmental (800) 448-3636; FLEXSTORM® Style FX manufactured by Advanced Drainage Systems, Inc. (800) 821-6710; CATCH-ALL® manufactured by Price & Company (866) 960-4300, or Engineer approved equal.

METHODS OF CONSTRUCTION

The Contractor shall install, maintain, clean, and re-install and/or replace inlet filters in accordance with the manufacturer's specifications and as directed by the Engineer. The Contractor shall dispose of debris off-site.

Costs for this work will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions."

**DETAILED SPECIFICATION
FOR
VACUUM TYPE STREET AND
UTILITY STRUCTURE CLEANING EQUIPMENT**

The Contractor shall furnish and operate throughout the construction period, vacuum type street cleaning and utility structure cleaning equipment (Vac-All, Vactor, etc.) approved by the Engineer, as and when directed by the Engineer for dust control, for dirt/debris control, and for street cleaning immediately prior to, and for street and utility structure cleaning after any and all paving. The cleaning equipment shall be of sufficient power to remove dust, dirt, and debris from the pavement and from utility structures in and adjacent to the construction area.

Costs for this work will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions."

**DETAILED SPECIFICATION
FOR
MATERIALS AND SUPPLIES CERTIFICATIONS**

The following materials and supplies shall be certified by the manufacturer or supplier as having been tested for compliance with the Specifications:

- HMA materials
- Hot-poured Joint Sealants
- Cements, coatings, admixtures and curing materials
- Sands and Aggregates
- Steel and Fabricated metal
- Portland Cement Concrete Mixtures
- Reinforcing Steel for Concrete
- Reinforcing Fibers for Concrete
- Pre-cast Concrete products
- Sanitary Sewer Pipe
- Storm Sewer Pipe
- Water Main Pipe
- High Density Polyethylene Pipe
- Edge Drain and Underdrain Pipe
- Geotextile Filter Fabric and Stabilization Fabric/Grids

The Contractor shall submit all certifications to the Engineer for review and approval a minimum of three business days prior to any scheduled delivery, installation, and/or construction of same.

Costs for this work will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions."

**DETAILED SPECIFICATION
FOR
CONTRACT DRAWINGS/PLANS**

Bidders shall carefully check and review all Drawings, plans, and specifications, and advise the Engineer of any errors or omissions discovered. The Drawings/Plans may be supplemented by such additional Drawings/Plans and sketches as may be necessary or desirable as the work progresses. The Contractor shall perform all work shown on any additional or supplemental Drawings/Plans issued by the Engineer.

Bidders shall carefully examine the Bid Form, preliminary layouts, specifications, and the work sites until the Bidder is satisfied as to all local conditions affecting the contract and the detailed requirements of construction. The submission of the bid shall be considered prima facie evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and all requirements of the contract.

**DETAILED SPECIFICATION
FOR EXISTING
SOIL BORING AND PAVEMENT SECTION DATA**

Data pertaining to existing soil borings and pavement sections which may be included in these Contract Documents are provided to help the Engineer and Contractor determine the soil conditions existing within the construction area. The City in no way guarantees existing conditions to be the same as shown in the data. The Contractor is solely responsible for any and all conclusions he/she may draw from the data.

**DETAILED SPECIFICATION
FOR
WORKING IN THE RAIN OR IN THE DARK**

Working in the Rain

The Contractor shall not work in the rain unless authorized in writing by the Engineer.

The Engineer may delay or stop the work due to threatening weather conditions.

The Contractor shall not be compensated for unused materials or downtime due to rain, or the threat of rain.

The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the rain.

Working in the Dark

The Contractor shall not work in the dark except as approved by the Engineer.

The Engineer may stop the work, or may require the Contractor to defer certain work to another day, if, in the Engineer's opinion, the work cannot be completed within the remaining daylight hours, or if inadequate daylight is present to either properly perform or inspect the work.

The Contractor will not be compensated for unused materials or downtime, when delays or work stoppages are directed by the Engineer for darkness and/or inadequate remaining daylight reasons.

The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the dark.

**DETAILED SPECIFICATION
FOR
QUANTITIES AND UNIT PRICES**

Quantities as given are approximate and are estimated for bidding purposes. Quantities are not guaranteed and may vary by any amount. While it is the City's intent to complete the project substantially as drawn and specified herein, quantities may be changed or reduced to zero for cost savings or other reasons. **The City reserves the right to change the quantities, delete streets, or add streets, and no adjustment in unit price will be made for any change in any quantity.**

**DETAILED SPECIFICATION
FOR
WATER MAIN INSTALLATION AND TESTING**

DESCRIPTION

This Detailed Specification is intended to supplement the current City of Ann Arbor Standard Specifications for Construction with regard to water main installation and hydrologic and bacteriologic testing. It is also intended to establish minimum requirements for the work that the Contractor is responsible to follow.

CONSTRUCTION METHODS

During the delivery, handling, installation, and testing of the water main, the Contractor shall comply with the following requirements:

1. Keep all pipes clean and neatly stacked a minimum of six-inches off of the ground at all times. Ends of pipe shall be covered to prevent entry of dust, dirt, small animals, and any other objectionable matter at all times. During installation of the water main and all appurtenances no dirt, soil, or non-potable water shall be allowed to enter the pipe. If dirt, soil, or non-potable water does enter the pipe, the Contractor shall completely remove it prior to installing the next segment of pipe. Segments of pipe that have visible signs of contamination including, but not limited to; soil, dirt, mud, oil, grease, solvents, animal droppings, etc. shall have all visible traces of the offending substance completely removed by the Contractor in a manner acceptable to the Engineer. Sections of pipe or fittings that have been marked by the Engineer for cleaning shall not be approved for installation until such time as the Engineer has again approved them for use on the project. Acceptable methods of cleaning include flushing and/or power washing, compressed air, or other methods that the Engineer may approve. Approval by the Engineer of a cleaning method shall not be construed by the Contractor to include acceptance of the water main for the purposes of placing it into service. Water main pipe and fittings that have been placed shall remain covered on the advancing end until the next segment of pipe is connected. The Contractor may uncover no more than three segments of pipe in advance of placement. Water main pipe and fittings that have been laid out further in advance of the installation operation must remain covered.
2. Gasket lubricant shall only be applied immediately before connection to the next segment of pipe. Pipe with lubricant applied shall not come in contact with the ground. If the lubricated portion of the pipe end contacts the ground, it shall be thoroughly cleaned to the satisfaction of the Engineer, prior to its installation.
3. All water mains shall be swabbed in accordance with the requirements of Section 3H, Flushing and Swabbing, of the current edition of the City of Ann Arbor Public Services Department Standards. During swabbing of the water main, the swab shall be flushed through the pipe in accordance with the manufacturer's recommendations and in a manner that is acceptable to the Engineer. The Contractor shall submit the product data of the swab from the manufacturer, for review and approval by the Engineer, at or before the pre-construction meeting.
4. Swabbing of the water main shall be followed immediately by flushing of the pipe so that any disturbed particles are washed out before they can resettle. The pipe shall be flushed in accordance with Section 3H, Flushing and Swabbing, of the current edition of the City of Ann Arbor Public Services Department Standard Specifications. The pipe shall be flushed until the water runs clear for a minimum of fifteen minutes or until two full pipe volumes have been flushed (whichever is longer.) Flushing from the existing water main that is to be replaced shall not be allowed.
5. During the chlorination process, the proper level of chlorination must be achieved throughout the entire length pipe. Chlorine levels shall be checked at intermediate locations as directed by the Engineer and the Contractor shall add chlorine until such time as the required levels are achieved

at all points. The “plug method” of chlorinating the pipe shall not be allowed. The Contractor shall chlorinate the proposed water main to a minimum residual concentration of 100 parts per million with commercial liquid chlorine solution. The chlorine concentrate shall be a minimum of 10% chlorine (sodium hypochlorite) by volume. Solid chlorine “pellets” or powder shall not be allowed. Any chlorine containing compound used on the project shall be approved by the Engineer. The minimum recommended dosage of chlorine (sodium hypochlorite) is as follows (based on 10% available chlorine):

Recommended Minimum Chlorine Dosage to Disinfect 100 L.F. of Pipe

<u>Pipe Diameter</u>	<u>10% Chlorine Solution (gallons)</u>
6	0.306
8	0.544
10	0.852
12	1.226
16	2.180
20	3.406
24	4.904

6. Bacteriological testing shall be performed by the City with the Contractor present. The Engineer shall determine the number, location, and type of testing points for each section of water main being tested. Bacteriological samples shall only be drawn from copper or brass sampling points. The use of galvanized steel blow-offs or sampling points are strictly prohibited. Obtaining bacteriological samples from fire hydrants will not be allowed.
7. If a new water main fails two consecutive sets of bacteriological tests, the Engineer may require the Contractor to re-swab the water main in accordance with Section 3H, Flushing and Swabbing, as described above. Additional flushing, prior to subsequent bacteriological sampling will also be required. The required additional swabbing and flushing of the water main by the Contractor shall be performed at no additional cost to the City of Ann Arbor.

MEASUREMENT AND PAYMENT

Payment for all labor, materials, and equipment that is required to comply with this Detailed Specification shall be considered as part of the unit price as bid for each respective water main pipe and fitting and will not be paid for separately.

Payment for all water main pipes shall be as follows:

The Contractor shall be paid for 50% of the water main pipe installed upon satisfactory completion of the installation and backfilling of the water main pipe. The remaining 50% shall be paid upon successful completion of all required bacteriological testing, the water main has been placed into service, and all water service leads have been connected and are in service.

**DETAILED SPECIFICATION
FOR
ASPHALTIC SEAL COATINGS
DUCTILE IRON PIPE FITTINGS**

DESCRIPTION

The Contractor may not operate City water main valves. For valve operation, contact the City of Ann Arbor Public Services Area. It is recommended that the Contractor request that the existing valves, which will need to be operated in order to perform the water main work, are checked in advance of the work to ensure that they operate properly.

Several items of work on this project require coordination with the City of Ann Arbor Public Services Area (The City). The Contractor shall notify the City three (3) full working days in advance of any items requiring coordination with the City.

The Contractor shall complete the water main work in a manner which minimizes the disruption of water service. Water quality issues arise and treatment costs increase when the well field system is taken off line. No shut downs at the well field shall occur on Saturdays or Sundays. Shut downs shall not be for longer than 8.0 hours for any given shutdown event. Liquidated damages as detailed and described on page C-2 of these documents shall apply to any shut downs that occur on Saturday or Sunday or for a period of time longer than 8.0 hours in any given 24 hour period.

The Contractor shall be responsible for coordination with the City of Ann Arbor Public Services Area for the installation of 1-inch corporations in the gate wells to be used for testing and filling of new main. The Contractor shall pay the City of Ann Arbor's Field Operations Unit all costs associated with installing the corporations.

The Contractor must have all materials, fittings, pumps and other miscellaneous equipment, and personnel on site before the City of Ann Arbor Public Services Area personnel will prepare and shutdown an existing main.

The Contractor shall dig-up and expose utility crossings 60-feet in advance of laying any water main pipe in their vicinity. This will allow the Engineer to adjust the grade of the water main, if possible, to avoid the existing utilities. The costs of the advance excavations, and related costs, shall be included in the respective items of work listed in the Bid Form. Some dig-ups may need to occur out of Phase.

All ductile iron pipe and fittings shall have an asphaltic seal coat on their cement-mortar linings. The coatings shall meet the requirements of ANSI/NSF Standard 61, Drinking Water System Components - Health Effects, and be approved for contact with drinking water.

MEASUREMENT AND PAYMENT

Asphaltic seal coat for ductile iron pipe and fittings shall not be measured or paid for separately. This work shall include all labor, materials and equipment costs necessary to provide asphaltic seal coat of ductile iron pipe and fittings. Payment for this work shall be considered as part of the unit price for each respective ductile iron pipe and fitting unit price.

DETAILED SPECIFICATION FOR CONCRETE DURABILITY

DESCRIPTION

The Contractor shall furnish a Portland cement concrete mixture for this project that has been tested under this specification and shown to be resistant to excessive expansion caused by alkali-silica reactivity (ASR) and provides adequate air entrainment for freeze thaw durability. The Contractor shall construct the project with practices outlined in this specification.

MATERIALS

The materials provided for use on this project shall conform to the following requirements:

Portland cement	ASTM C 150
Fine Aggregate	ASTM C 33*
Coarse Aggregate	ASTM C 33*
Fly Ash, Class F	ASTM C 618
Slag Cement, Grade 100, 120	ASTM C 989
Silica Fume	ASTM C 1240
Blended Cements	ASTM C-595
Air Entraining Admixtures	ASTM C-260
Chemical Admixtures	ASTM C-494
White Membrane Cure	ASTM C-309 Type 2

* Fine and coarse aggregates shall consist of natural aggregates as defined in the 2012 MDOT Standard Specifications Section 902.

The Contractor shall provide documentation that all materials to be incorporated into proposed mixed designs meet the requirements of this section.

Alkali-Silica Reactivity

The Contractor shall supply to the Engineer preliminary concrete mix designs including a list and location of all suppliers of concrete materials. The Contractor shall evaluate the mixtures for the potential for excessive expansion caused by ASR and provide documentation to the Engineer. The Contractor's evaluation shall include a review of any previous testing of the material sources intended to be used for both the fine and coarse aggregates for the concrete mixtures. The previous testing may be from other projects or records provided by the material suppliers.

Aggregates shall be tested under ASTM C-1260. If the expansion of the mortar bars is less than 0.10%, at 14 days, the aggregates shall be considered innocuous and there are no restrictions for ASR mitigation required with this material.

Previous aggregate test data may be used. If no previous test data is available, for the concrete mix, that shows that it is resistant to ASR, a concrete mixture that will mitigate the potential for ASR must be designed using either method 1 or 2 as described below.

Method 1. Substitution of a portion of the cement with Class F Fly Ash, Slag Cement Grade 100 or 120 or a ternary mix (blended cement) containing a blend of Portland cement and slag cement, or Class F fly ash, or silica fume.

The maximum substitution of cement with the fly ash permitted shall be 25% by weight of total cementitious material (cement plus fly ash). Additional requirements for the Fly Ash, Class F are that the Calcium Oxide (CaO) percent shall be less than 10 % and the available alkalis shall not exceed a maximum of 1.5%. A copy of the most recent mill test report shall be submitted to verify. Note: a Class C fly ash with a minimum total oxides ($\text{SiO}_2 + \text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3$) of 66% and a minimum SiO_2 of 38% may be used in lieu of Type F fly ash.

The maximum substitution of cement with the Slag Cement permitted shall be 40% by weight of total cementitious material (cement plus Slag Cement). The minimum replacement rate with Slag Cement shall be 25%.

For a ternary blend the total replacement of supplementary cementitious materials is 40% with a blend consisting of a maximum of 15% type F fly ash, and/or 8% silica fume and/or slag cement.

For method 1, the effectiveness of the proposed mix combination to resist the potential for excessive expansion caused by ASR shall be demonstrated using current or historic data. To demonstrate the effectiveness of the proposed mix the Contractor shall construct and test mortar bars per ASTM C1567 (14 day test) using both the fine and coarse aggregate along with the proposed cementitious material for the concrete mixture. If a mortar bar constructed of these materials produces an expansion of less than 0.10%, concrete mixture will be considered to be resistant to excessive expansion due to ASR.

If a mortar bar constructed produces an expansion of 0.10% or greater, concrete mixtures containing these materials shall not be considered resistant to the potential for excessive expansion due to ASR and shall be rejected. Additional testing, including alternate proportions or different materials will be required.

Method 2. Use low alkali cement and maintain the total alkali content from the cementitious at no more than 3.0 lbs/cyd ($\text{Na}_2\text{O}_{\text{eq}}$). The total alkali contribution is calculated by the quantity contained in the Portland cement only.

Requirements for Low Alkali Cement are that the alkali content does not exceed 0.60% expressed as Na_2O equivalent. Equivalent sodium oxide is calculated as: (percent Na_2O + 0.658 x percent K_2O).

For either method 1 or 2, if the Contractor intends to change any component material supplied after the mix design has been approved all concrete work will be suspended with no cost to the project or extensions of time, unless approved, until evaluation of the new mixtures and testing of the new materials demonstrates that it is resistant to excessive expansion due to ASR.

The Engineer and Contractor shall monitor the concrete that is delivered to the project site so as to insure that the approved mix design is being followed. The supplier shall include on the delivery ticket for each batch of concrete delivered to the job, the identification and proportions of each material batched.

When concrete is placed during cold weather, defined for the purposes of this Detailed Specification to be, air temperatures below 40° F, the use of accelerators, heated aggregates, silica fume and/or additional forms of cold weather protection will be required. Cold weather will not eliminate the requirement for furnishing and placing a concrete mix that is considered resistant to ASR attack.

Prior to cool weather placement, defined for the purposes of this detailed specification to be, air temperatures between 40° and 60° F, the set time of the proposed mix shall be verified under anticipated field conditions. This information shall be used when scheduling pours and saw crews.

Air Entrainment

Air entrainment shall be accomplished by addition of an approved air entraining agent. Air content as determined by ASTM C 231 or ASTM C 173, shall be determined on each day of production as early and as frequently as necessary until the air content is consistently acceptable. If during the period of time while adjustments are being made to the concrete to create a mixture that is consistently acceptable, concrete is produced that does not meet the requirements of this Detailed Specification, the Engineer may reject the material and direct it to be removed from the jobsite. Any rejected material shall be removed from the jobsite at the Contractor's sole expense. Quality Control testing performed by the Contractor to ensure compliance with the project specifications shall be performed on the grade ahead of the placement operation.

Paver placement: During production, the plastic concrete material shall be tested for acceptance at a point ahead of the paver. The air content of the concrete mixture that the Contractor shall provide

shall be known as the Acceptance Air Content (AAC). The Contractor shall also provide additional entrained air in the concrete mixture to account for the air loss which occurs in the concrete mixture experienced during transportation, consolidation and placement of the concrete. The “air loss” shall be added to the air content of the concrete mixture as established on the approved concrete mix design. The AAC for the project will be 6.0% plus an amount equal to the air loss.

For up to the first four loads, the air content measured on-site prior to placement shall be at least 8.0% and no more than 12.0%. To establish the initial AAC on the first day of paving, the air content of the first load shall be tested at the plant. After initial testing at the plant the Contractor shall provide at least two sample sets to determine the actual air loss during placement. A sample set shall consist of two samples of concrete from the same batch, one taken at the point of discharge and the other from the in-place concrete behind the paver. The air loss from the two sample sets shall be averaged and added to 6.0% to establish the AAC (rounded to the next higher 0.5%). After the testing and adjustment procedure(s) have been completed, the project acceptance air tests shall be taken prior to placement. The Contractor shall provide concrete to the jobsite that has an air content of plus 2.0%, or minus 1.0%, of the AAC.

After the AAC has been established, it shall be verified and/or adjusted through daily checks of the air loss through the paver. The Contractor shall check the air loss through the paver a minimum of two times a day. A Revised AAC shall be required to be established by the Contractor if the average air loss from two consecutive tests deviates by more than 0.5% from the current accepted air loss. The testing operations performed by the Contractor to establish a revised AAC shall be performed to the satisfaction of the Engineer. The Contractor shall be solely responsible for any delays and/or costs that occur to the project while establishing revised AACs.

Hand placed concrete: The air content for non-slip-form paving shall be 7.0% plus 1.5%, or minus 1.0%, at the point of placement.

CONSTRUCTION METHODS

Aggregate Control

Gradation control – The supplier shall provide a detailed stockpile management plan, describing their process control procedure for shipping, handling, and stockpiling of each aggregate including workforce training.

Moisture control – All aggregate materials must be conditioned to a moisture content of not less than saturated surface dry (SSD) prior to batching. A watering process using an effective sprinkler system designed and operated by the Contractor shall be required on all coarse aggregate material stockpiles.

The Contractor shall provide verification that these processes have been performed by the supplier. The Engineer reserves the right to independently verify that the supplier has complied with these standards.

Mixing

Central mix plants - The total volume of the batch shall not exceed the designated size of the mixer or the rated capacity as shown on the manufacturer's rating plate.

Drum Mix Plants: After all solid materials are assembled in the mixer drum; the mixing time shall be a minimum of 60 seconds and a maximum of 5 minutes. The mixing time may be decreased if the ASTM C-94 11.3.3 mixer efficiency tests show that the concrete mixing is satisfactory. The Engineer may require an increase in the minimum mix time if the mixer efficiency test determines that the concrete is not being mixed satisfactorily. The minimum mixing time shall start after the mixer is fully charged. Mixers shall be operated at the speed recommended by the manufacturer as mixing speed. The mixer shall be charged so that a uniform blend of materials reached the mixer throughout the charging cycle. Any additional slump water required shall be added to the mixing chamber by the end of the first 25% of the specified mixing time. Mixers shall not be used if the drum is not clean or if the mixing blades are damaged or

badly worn

Ribbon mixers: After all solid materials are assembled in the mixer; the mixing time shall be a minimum of 30 seconds and a maximum of 2.5 minutes. The mixing time may be decreased if the ASTM C-94 11.3.3 mixer efficiency tests show that the concrete mixing is satisfactory. The Engineer may require an increase in the minimum mix time if the mixer efficiency test determines that the concrete is not being mixed satisfactorily. The minimum mixing time shall be indicated by an accurate timing device which is automatically started when the mixer is fully charged. Mixers shall be operated at the speed recommended by the manufacturer as mixing speed. The mixer shall be charged so that a uniform blend of materials reached the mixer throughout the charging cycle. After any additional slump water is added to the mixing chamber the mixing shall continue for a minimum of 10 seconds. Mixers shall not be used if the mixer is not clean or if the mixing blades are damaged or badly worn.

Truck Mixers -The capacities and mixing capabilities shall be as defined in ASTM C 94, and each unit shall have an attached plate containing the information described therein. The plate may be issued by the Truck Mixer Manufacturer. The mixer capacity shall not be exceeded, and the mixing speeds shall be within the designated limits. Truck mixers shall be equipped with a reliable reset revolution counter. If truck mixers are used for mixing while in transit, the revolution counter shall register the number of revolutions at mixing speed.

An authorized representative of the concrete producer shall certify that the interior of the mixer drum is clean and reasonably free of hardened concrete, that the fins or paddles are not broken or worn excessively, that the other parts are in proper working order, and that the unit has been checked by the representative within the previous 30 calendar day period to substantiate this certification. The current, signed certification shall be with the unit at all times.

The required mixing shall be between 70 and 90 revolutions. The mixing shall be at the rate designated by the manufacturer and shall produce uniform, thoroughly mixed concrete.

The Engineer may inspect mixer units at any time to assure compliance with certification requirements, and removal of inspection ports may be required. Should the Engineer question the quality of mixing, the Engineer may check the slump variation within the batch. Should the slump variation between two samples taken, one after approximately 20% discharge and one after approximately 90% discharge of the batch, show a variation greater than 3/4 inch (20 mm) or 25% of the average of the two, whichever is greater, the Engineer may require the mixing to be increased, the batch size reduced, the charging procedure be modified or the unit removed from the work.

The practice of adding water on the site shall be discouraged. After the slump of the concrete in the first round of trucks has been adjusted on-site, the amount of water added at the plant shall be adjusted accordingly for that day's work. All additions of water on site shall be approved by the Engineer.

Curing

Apply liquid curing compound in a fine atomized spray to form a continuous, uniform film on the horizontal surface, vertical edges, curbs and back of curbs immediately after the surface moisture has disappeared, but no later than 30 minutes after concrete placement. With approval of the Engineer, the timing of cure application may be adjusted due to varying weather conditions and concrete mix properties.

The cure system shall be on site and tested prior to concrete placement.

Apply a curing compound at a rate of application not less than 2 gallons per 25 square yards. The Contractor shall keep the material thoroughly mixed per the Manufacturer's recommendations. The curing compound shall not be diluted.

The finished product shall appear as a uniformly painted solid white surface. Areas exhibiting a blotchy or spotty appearance shall be recoated immediately.

COMPLIANCE WITH STANDARDS

The Engineer will review and approve all material test reports and mix designs supplied by the Contractor before any placement of concrete. The Engineer will visually inspect the placed concrete and review the concrete test reports prior to final acceptance.

Acceptance sampling and testing will be performed using the sampling method and testing option selected by the Engineer. Acceptance testing will be performed at the frequency specified by the Engineer. Quality control measures to insure job control are the responsibility of the Contractor. The Engineer's testing and/or test results will not relieve the Contractor from his/her responsibilities to produce, deliver, and place concrete that meets all project requirements. The Engineer's test results are for acceptance purposes only.

If the results of the testing are not in compliance with the project specifications, the Engineer shall determine appropriate corrective action(s). Time extensions will not be granted to the Contractor during the time that the Engineer is determining the necessary corrective actions.

If, in the Engineer's judgment, the rejected material must be replaced, the material in question will be removed and replaced at the Contractor's sole expense. The removal costs will be deemed to include all relevant and associated costs including, but not limited to; re-mobilization, traffic control, re-grading the aggregate base course, if required, placement of material meeting the project specifications, and all other expenses. Time extensions will not be granted to the Contractor for any required repair work to meet the requirements of this specification.

If the Engineer decides that the material in question can remain in place, an adjustment to the contract unit price(s) may be made of up to 100% of the bid price(s) for the affected items of work.

MEASUREMENT AND PAYMENT

The cost associated with complying with the requirements as described herein, including any required remedial action(s), shall be included in the cost of other items of work and shall not be paid for separately.

Appendix A
Living Wage, Conflict of Interest, Non-Discrimination
Ordinance

Appendix A
CITY OF ANN ARBOR
LIVING WAGE ORDINANCE
DECLARATION OF COMPLIANCE

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that employers providing services to the City or recipients of grants for financial assistance (in amounts greater than \$10,000 in a twelve-month period of time) pay their employees who are working on the City project or grant, a minimum level of compensation known as the **Living Wage**. This wage must be paid to the employees for the length of the contract/project.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from the Ordinance. If this exemption applies to your firm, please check below:

_____ This **company** is exempt due to the fact that we employ or contract with fewer than 5 individuals.

_____ This **non-profit agency** is exempt due to the fact that we employ or contract with fewer than 10 employees.

The Ordinance requires that all contractors/vendors and/or grantees agree to the following terms:

- a) To pay each of its employees performing work on any covered contract or grant with the City, no less than the living wage, which is defined as \$12.81/hour when health care is provided, or no less than \$14.30/hour for those employers that do *not* provide health care. It is understood that the Living Wage will be adjusted each year on April 30, and covered employers will be required to pay the adjusted amount thereafter. The rates stated above include any adjustment for 2015.
- b) Please check the boxes below which apply to your workforce:
 - Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage without health benefits Yes_____ No_____
- OR**
- Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage with health benefits Yes_____ No_____
- c) To post a notice approved by the City regarding the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- d) To provide the City payroll records or other documentation as requested; and,
- e) To permit access to work sites to City representatives for the purposes of monitoring compliance, investigating complaints or non-compliance.

The undersigned authorized representative hereby obligates the contractor/vendor or grantee to the above stated conditions under penalty of perjury and violation of the Ordinance.

Company Name	Address, City, State, Zip
Signature of Authorized Representative	Phone (area code)
Type or Print Name and Title	Email address
Date signed	

Questions about this form? Please contact:
Procurement Office City of Ann Arbor
Phone: 734/794-6500

CITY OF ANN ARBOR LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2015 - ENDING APRIL 29, 2016

\$12.81 per hour

If the employer provides health
care benefits*

\$14.30 per hour

If the employer does **NOT**
provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

**For Additional Information or to File a Complaint Contact
Mark Berryman at 734/794-6500 or mberryman@a2gov.org**



Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

Certification: I hereby certify that to my knowledge, there is no conflict of interest involving the vendor named below:

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Vendor Name	Vendor Phone Number
Conflict of Interest Disclosure *	
Name of City of Ann Arbor employees, elected officials, or immediate family members with whom there maybe a potential conflict of interest.	<input type="checkbox"/> Relationship to employee _____ <input type="checkbox"/> Interest in vendor's company _____ <input type="checkbox"/> Other _____

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that the information provided is true and correct by my signature below:

Signature of Vendor Authorized Representative Date Printed Name of Vendor Authorized Representative

PROCUREMENT USE ONLY

- Yes, named employee was involved in Bid / Proposal process.
- No, named employee was not involved in procurement process or decision.

CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below. You can review the entire ordinance at www.a2gov.org/departments/city-clerk

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

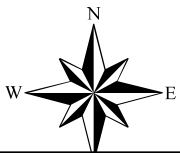
Complaint Procedure: If any individual has a grievance alleging a violation of this chapter, he/she has 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the alleged discriminatory action to file a complaint with the city's Human Rights Commission. If an individual fails to file a complaint alleging a violation of this chapter within the specified time frame, the complaint will not be considered by the Human Rights Commission. The complaint should be made in writing to the Human Rights Commission. The complaint may be filed in person with the City Clerk, by e-mail at aahumanrightscommission@gmail.com, or by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107). The complaint must contain information about the alleged discrimination, such as name, address, phone number of the complainant and location, date and description of the alleged violation of this chapter.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

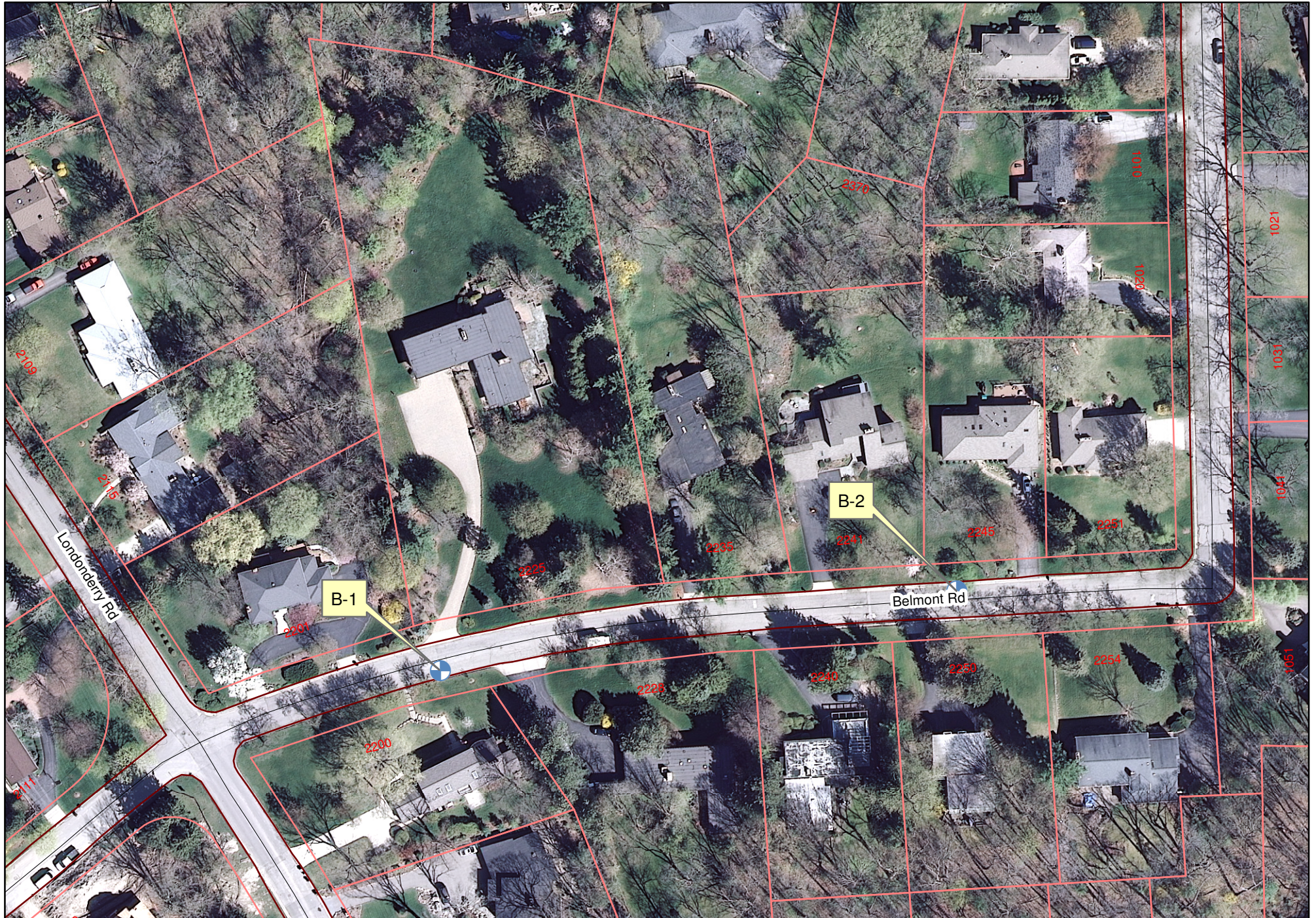
Appendix B

Soil Borings



Belmont Road Soil Boring Locations

1 inch = 100 feet





Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900
 Fax: (734) 453-0724

LOG OF BORING B-1

Sheet 1 of 1

PSI Job No.: 0381411-2 (B)	Drilling Method: 2.25" Solid Stem Auger	WATER LEVELS
Project: Miscellaneous Geotechnical Services	Sampling Method: 2" SS	▽ While Drilling 6.5 feet
Location: Belmont Road	Hammer Type: Automatic	▽ Upon Completion None feet
Londonderry Road to 90 Bend	Boring Location: Approx 9' North of Curb	▽ Collapsed @ 8 feet
City of Ann Arbor, Michigan	East of Mailbox for #2200 Belmont	

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STRENGTH, tsf	Additional Remarks
0				1	6		5.6" ASPHALT PAVEMENT; intact core recovered					
				2	12		10.5" SAND BASE, fine to coarse, with gravel and silt					
				3	18		FILL - SILTY CLAY, with sand, trace gravel, mottled brown, moist		3,3,4 N=7	18	+	Qp = 2.5 tsf
				4	16			CL	3,5,7 N=12	20	+	Qp = 4.5+ tsf
				5	16		SILTY CLAYEY SAND, brown to reddish brown, wet	SC-SM	2,3,3 N=6	16	×	Qp = 4.5+ tsf
				6	18		SANDY CLAY, trace gravel, brown to yellowish brown, moist to very moist, hard to very stiff	CL	2,3,5 N=8	12	+	Qp = 3.0 tsf
							End of Boring					

Completion Depth: 10.5 ft	Sample Types:	Shelby Tube	Latitude:
Date Boring Started: 10/19/11	Auger Cutting	Hand Auger	Longitude:
Date Boring Completed: 10/19/11	Split-Spoon	Calif. Sampler	Drill Rig: CME 75
Logged By: JDH	Rock Core	Texas Cone	Remarks: Borehole backfilled with auger cuttings and pavement surface patched upon completion
Drilling Contractor: PSI - Mike Dubnicki			

The stratification lines represent approximate boundaries. The transition may be gradual.



Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900
 Fax: (734) 453-0724

LOG OF BORING B-2

Sheet 1 of 1

PSI Job No.: 0381411-2 (B)
 Project: Miscellaneous Geotechnical Services
 Location: Belmont Road
 Londonderry Road to 90 Bend
 City of Ann Arbor, Michigan

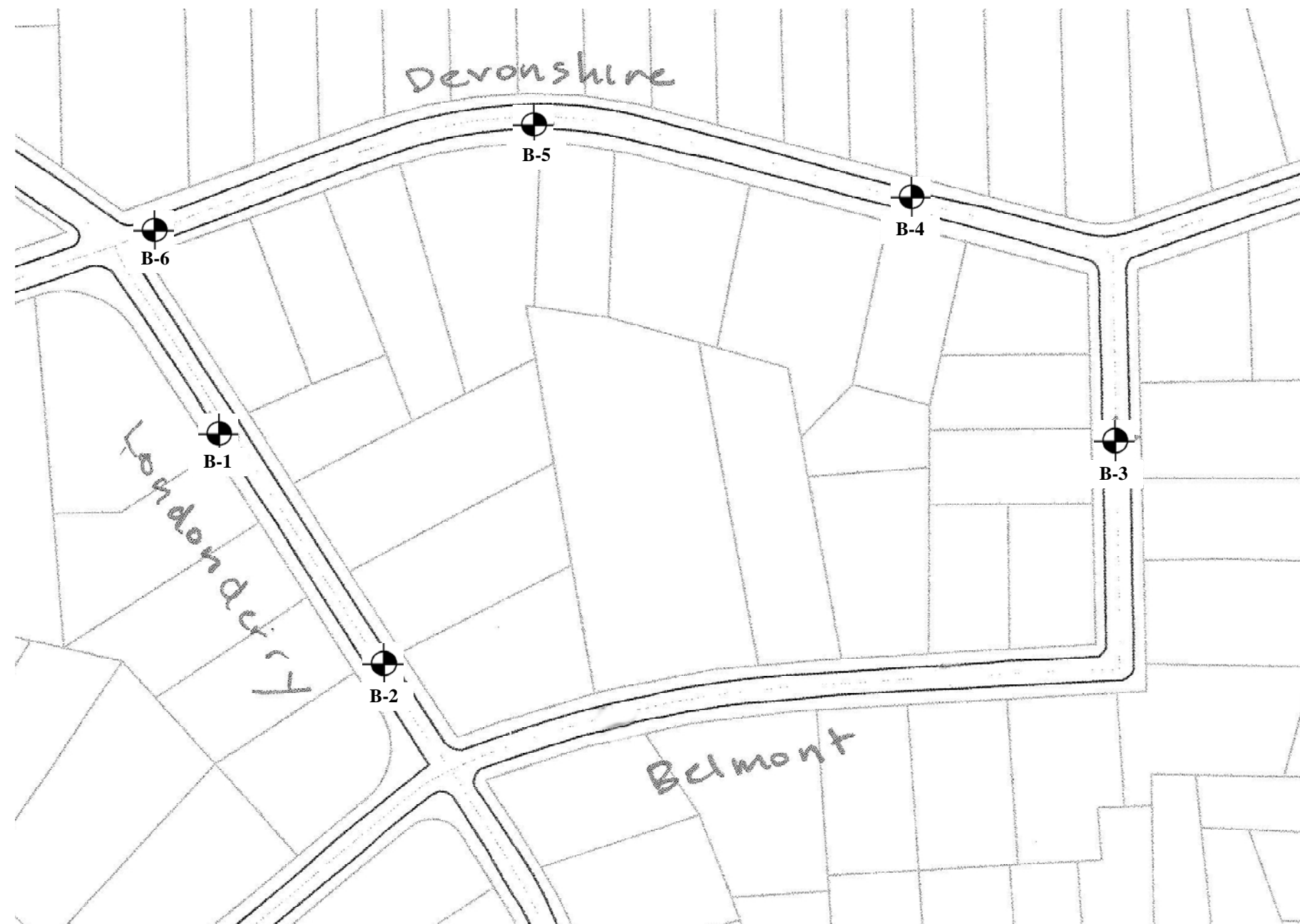
Drilling Method: 2.25" Solid Stem Auger
 Sampling Method: 2" SS
 Hammer Type: Automatic
 Boring Location: Approx 7' South of Curb
 East of Driveway to #2250 Belmont

WATER LEVELS	
▽ While Drilling	None feet
▽ Upon Completion	None feet
▽	Collapsed @ 8 feet


Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	STANDARD PENETRATION TEST DATA		Additional Remarks
										N in blows/ft	Moisture, %	
0				1	3		3.4" ASPHALT PAVEMENT; intact core recovered					
				2	15		11.5" SAND BASE, fine to coarse, with gravel and silt, brown, dark brown and gray					
				3	18		FILL - SILTY CLAY, with sand, trace gravel and organics, mottled bluish gray and dark olive, moist LOI = 4.5%	CL	3,3,4 N=7	16	+	Qp = 2.5 tsf
	5			4	18		SANDY CLAY, trace gravel, mottled yellowish brown and gray, moist, hard	CL	4,4,10 N=14	13	+	Qp = 4.5+ tsf
				5	18		SANDY CLAY, trace gravel, brown to brown and grayish brown, trace rust-colored partings, moist, hard	CL	5,6,10 N=16	13	+	Qp = 4.5+ tsf
	10			6	16		End of Boring		4,4,6 N=10	12	+	Qp = 4.5+ tsf

Completion Depth: 10.5 ft	Sample Types:	Shelby Tube	Latitude:
Date Boring Started: 10/19/11	Auger Cutting	Hand Auger	Longitude:
Date Boring Completed: 10/19/11	Split-Spoon	Calif. Sampler	Drill Rig: CME 75
Logged By: JDH	Rock Core	Texas Cone	Remarks: Borehole backfilled with auger cuttings and pavement surface patched upon completion
Drilling Contractor: PSI - Mike Dubnicki			

The stratification lines represent approximate boundaries. The transition may be gradual.



Legend

 Soil Borings Drilled by West Michigan Drilling between May 29th, 2014 and June 3rd, 2014.

Soil Boring Location Plan

Ann Arbor Soil Borings
Devonshire Rd, Londonderry Rd, and Belmont Rd
Ann Arbor, Michigan



Project No. 130460

Drawn by: MGD

Date: 5/8/2014

Scale: NTS

Plate
No. 1

Project Name: Ann Arbor Soil Borings
 Project Location: Devonshire, Londonderry, Belmont Roads
 Ann Arbor, Michigan
 G2 Project No. 130744
 Station: N/A



Soil Boring No. B-1
G2 CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
DEPTH (ft)	PROFILE	GROUND SURFACE ELEVATION: N/A	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Concrete (6-1/2 inches)	0.5						
		Aggregate Base: Yellowish Brown Sand with trace gravel (8-1/2 inches)	1.3						
		Fill: Medium Greenish Gray Sandy Clay with trace gravel and organic matter	4.0	S-1	3 2 2	4	15.1		2000*
5	▽		5	S-2	2 2 2	4	21.3		1500*
		Medium Greenish Gray Silt with trace sand	8.0	S-3	4 4 5	9	22.2		2000*
10		Very Stiff Gray Silt with trace clay	10.0	S-4	3 6 7	13	16.2		7000*
		End of Boring @ 10 ft							
15			15						

BORING LOG W/STA IN HEADER NO. LAT. LONG. 130744 - DEVONSHIRE.GPJ 20140820 G2 CONSULTING DATA TEMPLATE.GDT 2/9/15

Total Depth: 10 ft
 Drilling Date: May 29, 2014
 Inspector:
 Contractor: West Michigan Drilling
 Driller: D. Klitz

Drilling Method:
 3-1/4 inch inside diameter hollow-stem augers

Water Level Observation:
 Groundwater observed at 5 feet during drilling operations; none upon completion

Notes:
 * Calibrated Hand Penetrometer

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; asphalt repaired with cold patch

Figure No. 1

Project Name: Ann Arbor Soil Borings
 Project Location: Devonshire, Londonderry, Belmont Roads
 Ann Arbor, Michigan
 G2 Project No. 130744
 Station: N/A



Soil Boring No. B-2
CONSULTING GROUP

SUBSURFACE PROFILE			SOIL SAMPLE DATA						
DEPTH (ft)	PROFILE	GROUND SURFACE ELEVATION: N/A	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Concrete (6-1/2 inches)	0.5						
		Aggregate Base: Light Gray Sandy Gravel (Crushed Limestone) (10-1/2 inches)	1.4						
		Fill: Stiff Gray Silty Clay with trace sand and gravel	2.5	S-1	6 3 2	5	14.1		2500*
5		Fill: Very Soft to Soft Greenish Gray Silty Clay with trace sand and gravel	5	S-2	4 2 2	4	17.2		1000*
			8.0	S-3	2 1 1	2	22.1		0*
10		Gray Silty Clay with trace sand and gravel	10.0	S-4	2 1 1	2	26.9		500*
		End of Boring @ 10 ft							
15			15						

BORING LOG W/STA IN HEADER NO. LAT. LONG. 130744 - DEVONSHIRE.GPJ 20140820 G2 CONSULTING DATA TEMPLATE.GDT 2/9/15

Total Depth: 10 ft
 Drilling Date: May 29, 2014
 Inspector:
 Contractor: West Michigan Drilling
 Driller: D. Klitz

Drilling Method:
 3-1/4 inch inside diameter hollow-stem augers

Water Level Observation:
 Groundwater observed at 8 feet 7 inches during drilling operations; none upon completion

Notes:
 * Calibrated Hand Penetrometer

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; asphalt repaired with cold patch

Figure No. 2

Project Name: Ann Arbor Soil Borings
 Project Location: Devonshire, Londonderry, Belmont Roads
 Ann Arbor, Michigan
 G2 Project No. 130744
 Station: N/A



Soil Boring No. B-3
CONSULTING GROUP

SUBSURFACE PROFILE			SOIL SAMPLE DATA						
DEPTH (ft)	PROFILE	GROUND SURFACE ELEVATION: N/A	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Concrete (3 inches)	0.3						
		Aggregate Base: Yellowish Brown Sandy Gravel (13 inches)	1.3						
		Fill: Medium Compact Dark Yellowish Brown Silty Sand with trace gravel	2.5	S-1	7 7 5	12			
5		Medium Yellowish Brown and Gray Silty Clay with trace sand and gravel	5	S-2	5 2 3	5	20.2		2000*
		Stiff Yellowish Brown Silty Clay with trace sand and gravel	5.5	S-3	5 6 8	14	17.6		4000*
10		Hard Gray Silty Clay with trace sand and gravel	9.0	S-4	6 13 17	30	8.5		9000*
		End of Boring @ 10 ft	10.0						
15			15						

BORING LOG W/STA IN HEADER NO.LAT.LONG. 130744 - DEVONSHIRE.GPJ 20140820 G2 CONSULTING DATA TEMPLATE.GDT 2/9/15

Total Depth: 10 ft
 Drilling Date: May 29, 2014
 Inspector:
 Contractor: West Michigan Drilling
 Driller: D. Klitz

Water Level Observation:
 No groundwater observed during or upon completion of drilling operations

Notes:
 * Calibrated Hand Penetrometer

Drilling Method:
 3-1/4 inch inside diameter hollow-stem augers

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; asphalt repaired with cold patch

Figure No. 3

Project Name: Ann Arbor Soil Borings
 Project Location: Devonshire, Londonderry, Belmont Roads
 Ann Arbor, Michigan
 G2 Project No. 130744
 Station: N/A



Soil Boring No. B-4
CONSULTING GROUP

SUBSURFACE PROFILE			SOIL SAMPLE DATA						
DEPTH (ft)	PROFILE	GROUND SURFACE ELEVATION: N/A	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Concrete (6 inches)	0.5						
		Very Stiff Dark Yellowish Brown Sandy Clay with trace gravel	2.5	S-1	4 4 4	8	10.7		5500*
5		Medium Dark Yellowish Brown Sandy Clay with trace gravel	5	S-2	3 6 3	9	12.2		1000*
		(Occasional Sand Seams @ 8 feet)	8.0	S-3	2 1 1	2	17.0		1000*
10		Very Stiff Yellowish Brown Sandy Clay with trace silt and gravel	10.0	S-4	4 8 17	25	7.5		6000*
		End of Boring @ 10 ft	10						
15			15						

BORING LOG W/STA IN HEADER NO.LAT.LONG. 130744 - DEVONSHIRE.GPJ 20140820 G2 CONSULTING DATA TEMPLATE.GDT 2/9/15

Total Depth: 10 ft
 Drilling Date: June 3, 2014
 Inspector:
 Contractor: West Michigan Drilling
 Driller: G. Strauch

 Drilling Method:
 2-1/4 inch inside diameter hollow-stem augers

Water Level Observation:
 No groundwater observed during or upon completion of drilling operations

 Notes:
 * Calibrated Hand Penetrometer

 Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; asphalt repaired with cold patch

Figure No. 4

Project Name: Ann Arbor Soil Borings
 Project Location: Devonshire, Londonderry, Belmont Roads
 Ann Arbor, Michigan
 G2 Project No. 130744
 Station: N/A



Soil Boring No. B-5
G2 CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
DEPTH (ft)	PROFILE	GROUND SURFACE ELEVATION: N/A	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Concrete (5 inches)	0.4						
		Aggregate Base: Yellowish Brown Silty Sand with trace gravel (31 inches)	3.0	S-1	6 7 5	12			
5		Loose Yellowish Brown Silty Sand with trace gravel	5	S-2	3 3 4	7			
		Medium to Stiff Yellowish Brown Sandy Clay with trace gravel	6.0	S-3	10 12 11	23	8.9		2000*
10		End of Boring @ 10 ft	10.0	S-4	9 11 13	24	8.2		1500*
15			15						

BORING LOG W/STA IN HEADER NO. LAT. LONG. 130744 - DEVONSHIRE.GPJ 20140820 G2 CONSULTING DATA TEMPLATE.GDT 2/9/15

Total Depth: 10 ft
 Drilling Date: June 3, 2014
 Inspector:
 Contractor: West Michigan Drilling
 Driller: G. Strauch

 Drilling Method:
 2-1/4 inch inside diameter hollow-stem augers

Water Level Observation:
 No groundwater observed during or upon completion of drilling operations

 Notes:
 * Calibrated Hand Penetrometer

 Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; asphalt repaired with cold patch

Figure No. 5

Project Name: Ann Arbor Soil Borings
 Project Location: Devonshire, Londonderry, Belmont Roads
 Ann Arbor, Michigan
 G2 Project No. 130744
 Station: N/A



Soil Boring No. B-6
CONSULTING GROUP

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
DEPTH (ft)	PROFILE	GROUND SURFACE ELEVATION: N/A	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Bituminous Concrete (5 inches)	0.4						
		Aggregate Base: Loose Yellowish Brown Silty Sand with trace gravel (25 inches)	2.5	S-1	5 6 4	10			
5		Loose Dark Yellowish Brown Silty Sand with trace gravel	5	S-2	4 3 4	7			
		Loose Yellowish Brown Sand	6.5	S-3	3 3 3	6			
10		End of Boring @ 10 ft	10.0	S-4	3 3 4	7			
15			15						

BORING LOG W/STA IN HEADER NO LAT LONG 130744 - DEVONSHIRE.GPJ 20140820 G2 CONSULTING DATA TEMPLATE.GDT 2/9/15

Total Depth: 10 ft
 Drilling Date: June 3, 2014
 Inspector:
 Contractor: West Michigan Drilling
 Driller: G. Strauch

Water Level Observation:
 No groundwater observed during or upon completion of drilling operations

Excavation Backfilling Procedure:
 Borehole backfilled with auger cuttings; asphalt repaired with cold patch

Drilling Method:
 2-1/4 inch inside diameter hollow-stem augers

Figure No. 6

Appendix C
DTE Michcon Proposed Gas Main Plans

WORKSHEET	SGI # 5195	WorkOrder Owner	FINALS	DATE: 3/19/2015	COMPLETION DATE: 12/31/2015		
LEGEND	NAME OF STREET	P.L.	SDWK	MARGIN	PAVT	FRWY.	JOB NAME
Proposed Gas	Devonshire EQ Londonderry 60'	1'	N/A	15'			WorkOrder Description
Existing Gas	south side	1'	N/A	15'			ANN ARBOR 2015
DISTRIBUTION	Londonderry SO Devonshire 60'	1'	N/A	15'			WO# 77777777
Existing Gas	east side	1'	N/A	15'			DEVONSHIRE
TRANSMISSION	west side	1'	N/A	15'			WO# 77777777
Existing Gas	Devonshire W/O Belmont 60'	1'	N/A	15'			MAIN RENEWAL
Service	north side	1'	N/A	15'			CONS# 77777777
	south side	1'	N/A	15'			
	Belmont SO Devonshire 60'	1'	N/A	14'			Location: ANN ARBOR
	east side	1'	N/A	14'			CALL 3 FULL
	west side	1'	N/A	14'			WORKING DAYS
							BEFORE YOU DIG

LOCATIONS OF PROPOSED GAS FACILITIES REVIEWED AND APPROVED BY:	OF W.C.D.P.S. DATE:
ENGINEERING APPROVALS:	
CORROSION APPROVALS:	
ANODES	ENG. APPROVAL:
CATHODIC PROTECT.	CORROSION APPROVAL:
INS. FITTINGS	ON ALL 711 CHIGS

NOTES:

- DIG TEST HOLES TO LOCATE ALL UTILITIES PRIOR TO STARTING JOB.
- IF CONTRACTED AND ANODES ARE REQUIRED CONTRACTORS TO DIG AND BACKFILL FOR ANODE INSTALLATION.
- ALL WORK IN THE CITY OF ANN ARBOR R.O.W. SHALL BE IN ACCORDANCE WITH CITY STANDARDS.
- PROVIDE 12" VERTICAL AND 3'-6" HORIZONTAL CLEARANCE FROM PROPOSED GAS MAINS AND/OR STRUCTURES TO EXISTING OR PROPOSED WATER MAINS AND SEWERS AND/OR STRUCTURES.
- NOTIFY THE CITY OF ANN ARBOR OFFICE 48 HOURS PRIOR TO START OF WORK.
- ALL DIGGING AND BACKFILLING ON THIS PROJECT TO BE DONE BY THE CONTRACTOR, INCLUDING EXCAVATION FOR DISCONNECTS, THE INS AND PRESSURE CONTROL PURPOSES.
- INSULATE EACH STEEL SERVICE AT BUILDING AND INSTALL ANODE ON EACH SERVICE TIEING INTO THIS PROPOSED DISCONNECTS.
- INSTALL ANODE ON EACH STEEL APPURTURE USED IN CONNECTION WITH THIS PLASTIC MAIN.
- INSULATE ALL THE INS. STEEL TO C.I. AND INSTALL ANODES ON TRANSITION FITTINGS.
- A LIST BY ADDRESS AND STREET NAME OF EACH C&W SERVICE TIEING INTO THIS PLASTIC MAIN SHALL BE SENT TO THE CORROSION DEPARTMENT.
- RECONNECT ALL AFFECTED SERVICES TO PROPOSED NEW MAIN.

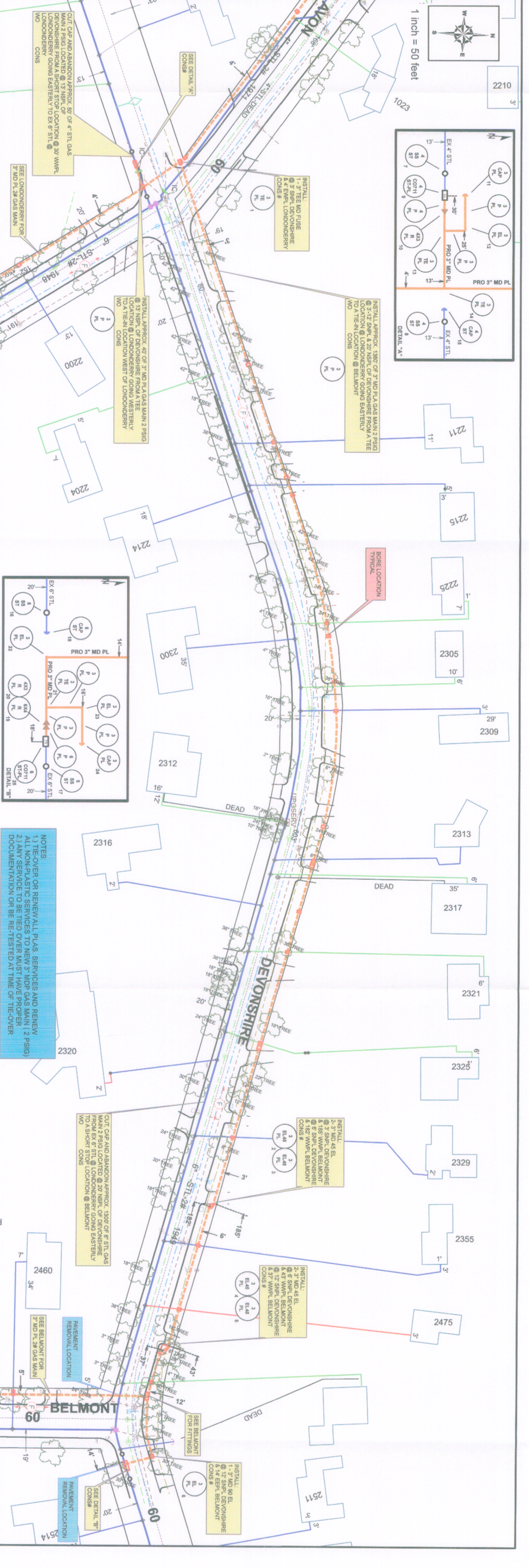
CONTRACTOR NOTES:

- IN ALL CASES WHERE THE INSTALLATIONS ARE MADE NOT CONFORMING TO THE LAYOUT, THE REASONS FOR THE NON-COMPLIANCE SHALL BE DESCRIBED AND THE REASON FOR THE NON-COMPLIANCE SHALL BE DESCRIBED ON DIFFICULTIES ENCOUNTERED SHOULD ALSO BE DESCRIBED ON A SIMPLE PROFILE SKETCH TO BE MADE ON THE RECORD COPY SHOWING DEPTHS OF THE MAIN BELOW SIDEWALK, CURB OR PAVEMENT, AT BEGINNING AND ENDING OF EACH JOB AND AT EACH VALVE FITTING OR TE IN SOME DETAIL SKETCH TO SHOW ANY UNUSUAL CONDITION OR TO SHOW HOW THE MAIN PASSES OVER OR UNDER SOME OTHER UNDERGROUND UTILITY OR STRUCTURE, SHOWING THE MEASURED CLEARANCE AS INSTALLED.
- ALL WELDING SHALL CONFORM TO THE PROVISIONS CONTAINED IN THE WELDING STANDARD, SECTION 7 OF THE MICH CON DISTRIBUTION AND TRANSMISSION SYSTEM STANDARDS MANUAL, STANDARD 221.

FOR INFORMATION PURPOSES ONLY

SEQUENCE NUMBER	ABBREVIATED CODE	MISC-ID/SAP NUMBER	LONG DESCRIPTION	TRACE IDENTIFIER (digits of 16 digit bar code)	ALTERNATE TRACKABILITY DATA
1	3/TE/PL	63071378	3 GFCP 6911434 2406 TEE IPS SDR11/11.5 BF IAPMO	1	BATCH CODE OR DATE OF MANUFACTURE OR HEAT TREATMENT NUMBER (STEEL ONLY)
2	3/EL/45/PL	63071159	3 GFCP 6910559 2406 45 DEG ELL IPS SDR11/11.5 BF	2	
3	3/EL/45/PL	63071159	3 GFCP 6910559 2406 45 DEG ELL IPS SDR11/11.5 BF	3	
4	3/EL/45/PL	63071159	3 GFCP 6910559 2406 45 DEG ELL IPS SDR11/11.5 BF	4	
5	3/EL/45/PL	63071159	3 GFCP 6910559 2406 45 DEG ELL IPS SDR11/11.5 BF	5	
6	3/EL/PL	63071144	3 GFCP 6911433 2406 90 DEG ELL IPS SDR11/11.5 BF IAPMO	6	
7	4/SS/ST		4TD WILLIAMSON 06-7213-0000-00 SHORTSTOPP 60/275/811 MACHINES	7	
8	4/SS/ST		4DRESSER 0711 CPLG ST X IPS PE SDR11	8	
9	4/CO/711/ST-PL		4 X 3 GFCP 1000959 2406 RED IPS SDR11/11.5 BF IAPMO	9	
10	4X3/R/PL	63071282	4 X 3 GFCP 1000959 2406 RED IPS SDR11/11.5 BF IAPMO	10	
11	3/EL/PL	63071027	3 GFCP 69103220000 2406 CAP IPS SDR11 BF IAPMO	11	
12	3/EL/PL	63071114	3 GFCP 6911433 2406 90 DEG ELL IPS SDR11/11.5 BF IAPMO	12	
13	3/TE/PL	63071378	3 GFCP 6911434 2406 TEE IPS SDR11/11.5 BF IAPMO	13	
14	3/TE/PL	63071378	3 GFCP 6911434 2406 TEE IPS SDR11/11.5 BF IAPMO	14	
15	4/CAP/ST	23004966	4DRESSER 0700-0213-201 AL-CLAD CTD LINE CAP	15	
16	6/SS/ST		6MUELLER FITTING, PRESSURE CONTROL, WELDING TYPE, WITH ANSII 150 LB FLANGE, LINE STOPPER	16	
17	6/SS/ST		6MUELLER FITTING, PRESSURE CONTROL, WELDING TYPE, WITH ANSII 150 LB FLANGE, LINE STOPPER	17	
18	6/CAP/ST	23004965	6DRESSER 0700-0215-201 AL-CLAD CTD LINE CAP W/1" VENT	18	
19	6X4/R/PL	63071291	6 X 4 GFCP 69106021000 2406 RED IPS SDR11 5/11 BF	19	
20	4X3/R/PL	63071282	4 X 3 GFCP 1000959 2406 RED IPS SDR11/11.5 BF IAPMO	20	
21	3/TE/PL	63071378	3 GFCP 6911434 2406 TEE IPS SDR11/11.5 BF IAPMO	21	
22	3/EL/PL	63071114	3 GFCP 6911433 2406 90 DEG ELL IPS SDR11/11.5 BF IAPMO	22	
23	3/EL/PL	63071114	3 GFCP 6911433 2406 90 DEG ELL IPS SDR11/11.5 BF IAPMO	23	
24	3/CAP/PL	63071027	3 GFCP 69103220000 2406 CAP IPS SDR11 BF IAPMO	24	
25	6/CO/711/ST-PL		6 DRESSER 0711 CPLG ST X IPS PE SDR11	25	
26				26	
27				27	
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40				40	

Legend
● Bollards Posts Poles
○ Cable MH
○ Electric MH
○ Electric Str
○ Gas Main Flag
○ Gas Main MH
○ Gas Valve
○ Ions
○ Lightpoles
○ Sanitary MH
○ Sign
○ Storm CB
○ Storm MH
○ Telephone MH
○ Traffic Signal
○ Unknown Manhole
○ Unknown Str
○ USPS
○ Utility Pole
○ Watermain GV
○ Watermain Hydrant
○ Brick
○ Cable
○ Electric
○ Fence
○ Guardrail
○ Landscaping
○ Powerlines
○ Sanitary
○ Storm
○ Telephone
○ Watermain





WORKSHEET: SGM-088
 NAME OF STREET: Mon/Oldir Owner
 LEGEND: P.L. SPWK MARGIN PAVT PKRVY
 DATE: 3/20/2015
 COMPLETION DATE: 12/31/2015

JOB NAME: WORKORDER Description
 ANN ARBOR 2015
 W/O# 777777777
 BELMONT
 W/O# 777777777
 MAIN RENEWAL
 CONSS# 777777777
 Location: ANN ARBOR

ENGINEERING APPROVALS: LUK
 OF M.C.D.S. DATE: 1-16-09
 MRS DISG
 1-460-482-7111
 CORROSION APPROVALS: J. FIRSTER 11-5-13

NOTES:
 1. DIG TEST HOLES TO LOCATE ALL UTILITIES PRIOR TO STARTING JOB.
 2. IF CONTRACTED AND ANODES ARE REQUIRED, CONTRACTOR TO DIG AND BACKFILL FOR ANODE INSTALLATION.
 3. ALL WORK IN THE CITY OF ANN ARBOR R.O.W. SHALL BE IN ACCORDANCE WITH CITY STANDARDS.
 4. PROVIDE 12" VERTICAL AND 3'-6" HORIZONTAL CLEARANCE FROM PROPOSED GAS MAINS AND/OR STRUCTURES TO EXISTING OR PROPOSED WATER MAINS AND SEWERS AND/OR STRUCTURES TO EXISTING OR PROPOSED UTILITIES.
 5. ALL DIGGING AND BACKFILLING ON THIS PROJECT TO BE DONE BY THE CONTRACTOR, INCLUDING EXCAVATION FOR DISCONNECTS, THE INS AND PRESSURE CONTROL PURPOSES.
 6. INSULATE EACH STEEL SERVICE AT BUILDING AND INSTALL ANODE ON EACH SERVICE TIEING INTO THIS PROPOSED PLASTIC MAIN.
 7. INSTALL ANODE ON EACH STEEL APPURTURE USED IN CONNECTION WITH THIS PLASTIC MAIN.
 8. INSTALL ANODE ON EACH STEEL SERVICE TIEING INTO THIS PLASTIC MAIN.
 9. ALL WORK SHALL BE IN ACCORDANCE WITH THE CORROSION DEPARTMENT.
 10. LIST BY ADDRESS AND STREET NAME OF EACH CAVI SERVICE TIEING INTO THIS PLASTIC MAIN SHALL BE SENT TO THE CORROSION DEPARTMENT.
 11. RECONNECT ALL AFFECTED SERVICES TO PROPOSED NEW MAIN.

CONTRACTOR NOTES:
 1. IN ALL CASES WHERE THE INSTALLATIONS ARE MADE NOT CONFORMING TO THE LAYOUT, THE REASONS FOR MAKING THE CHANGES SHOULD BE REPORTED ON THE RECORD COPY. ANY UNUSUAL CIRCUMSTANCES OR DIFFICULTIES ENCOUNTERED SHOULD ALSO BE DESCRIBED ON THE WORK REQUEST ORDERS.
 2. A SIMPLE PROFILE SKETCH IS TO BE MADE ON THE RECORD COPY SHOWING DEPTHS OF THE MAIN BELOW EXISTING UTILITIES. THE SKETCH SHOULD BE MADE ON THE RECORD COPY SHOWING DEPTHS OF THE MAIN BELOW EXISTING UTILITIES. THE SKETCH SHOULD BE MADE ON THE RECORD COPY SHOWING DEPTHS OF THE MAIN BELOW EXISTING UTILITIES.
 3. MAKE DETAIL SKETCH TO SHOW ANY UNUSUAL CONDITIONS OR TO SHOW HOW MAINS WERE INSTALLED UNDER SOME OTHER UNDERGROUND UTILITY OR STRUCTURE SHOWING THE MEASURED CLEARANCE AS INSTALLED.
 4. ALL WELDING SHALL CONFORM TO THE PROVISIONS CONTAINED IN THE WELDING STANDARD, SECTION 7 OF THE MICH CON DISTRIBUTION AND TRANSMISSION SYSTEM STANDARDS MANUAL, STANDARD 221.

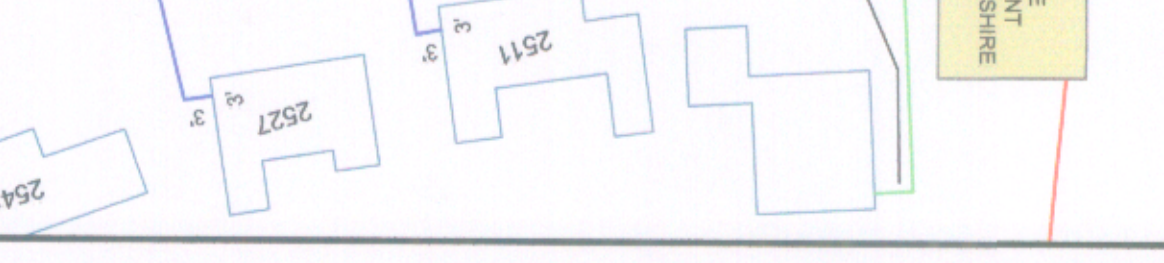
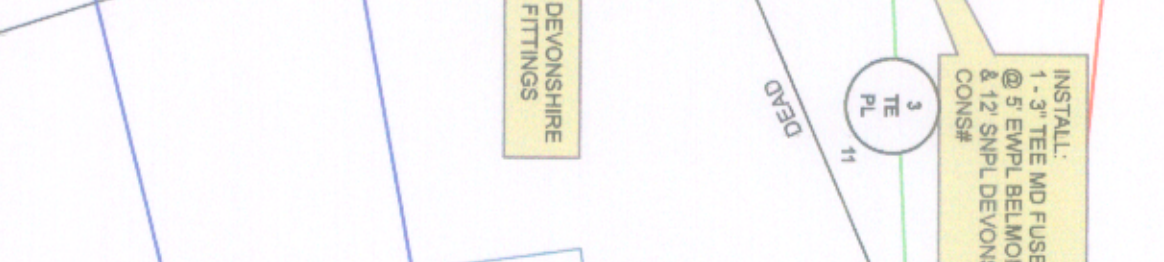
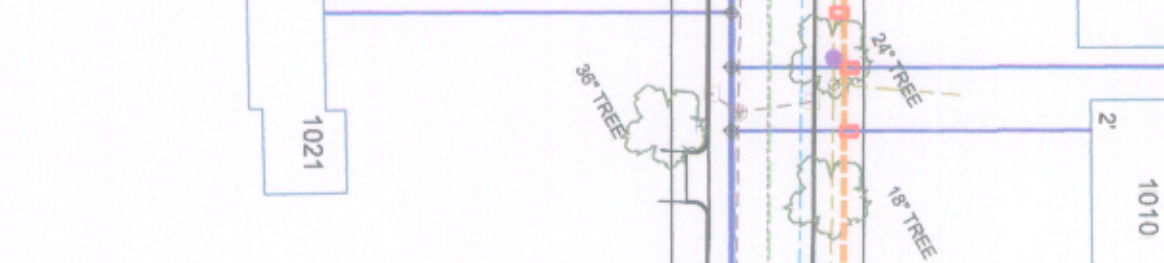
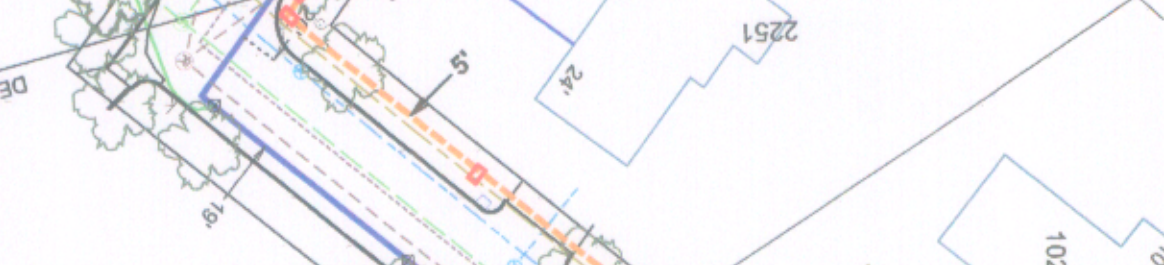
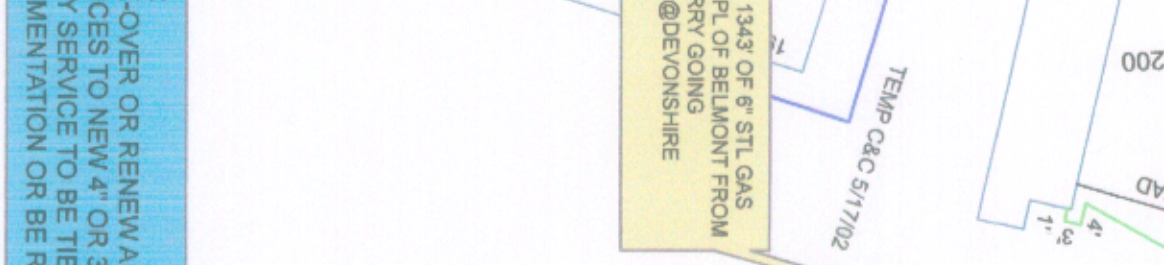
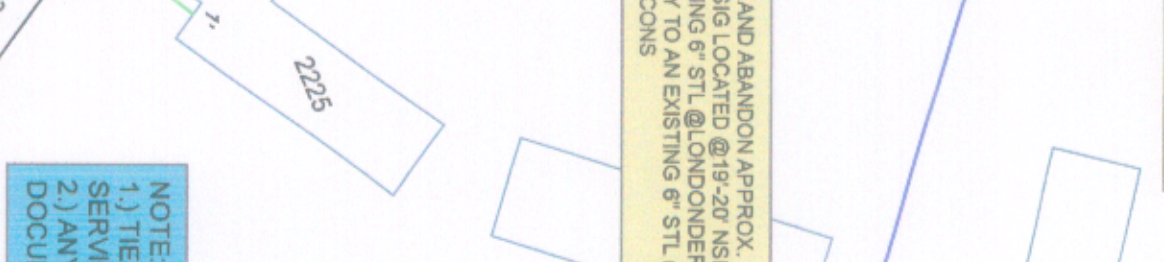
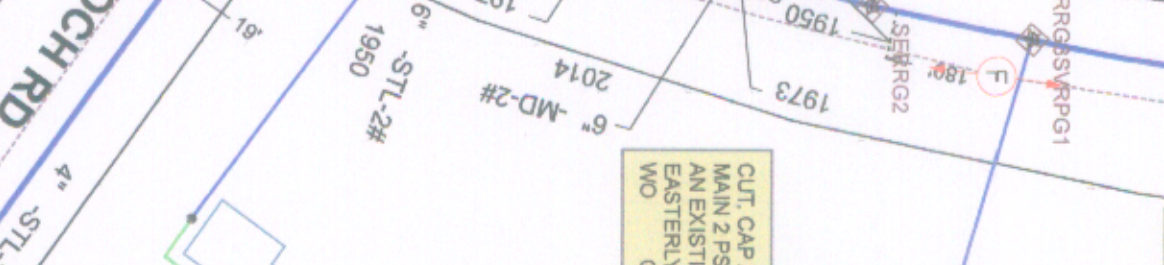
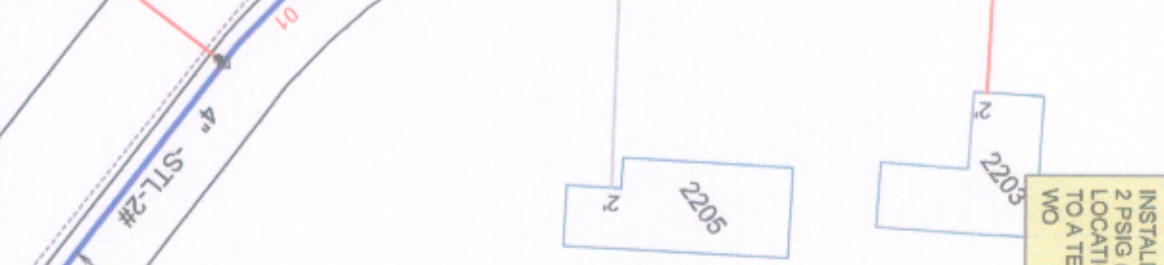
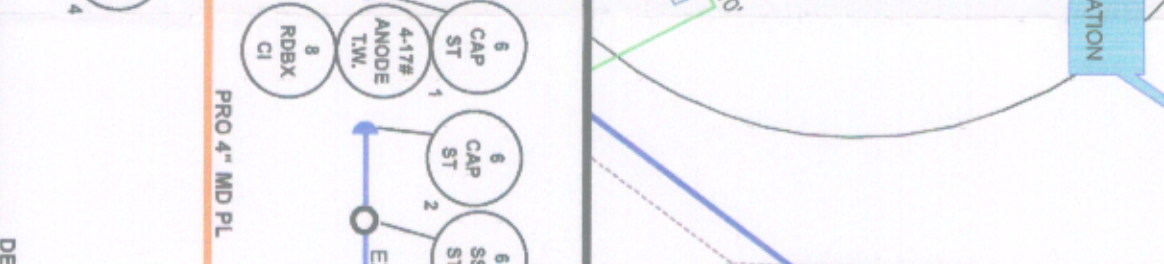
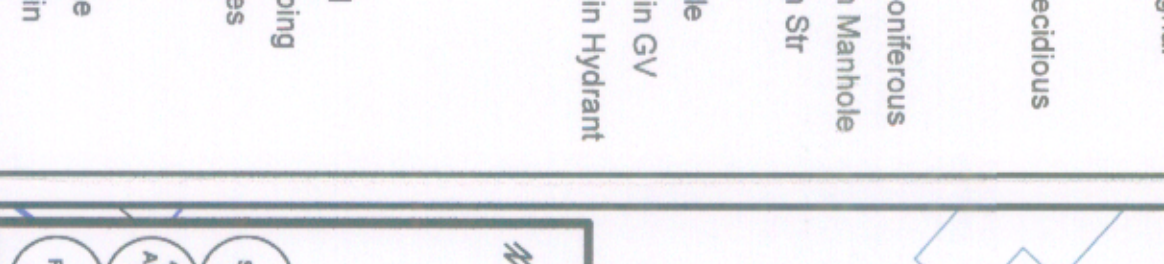
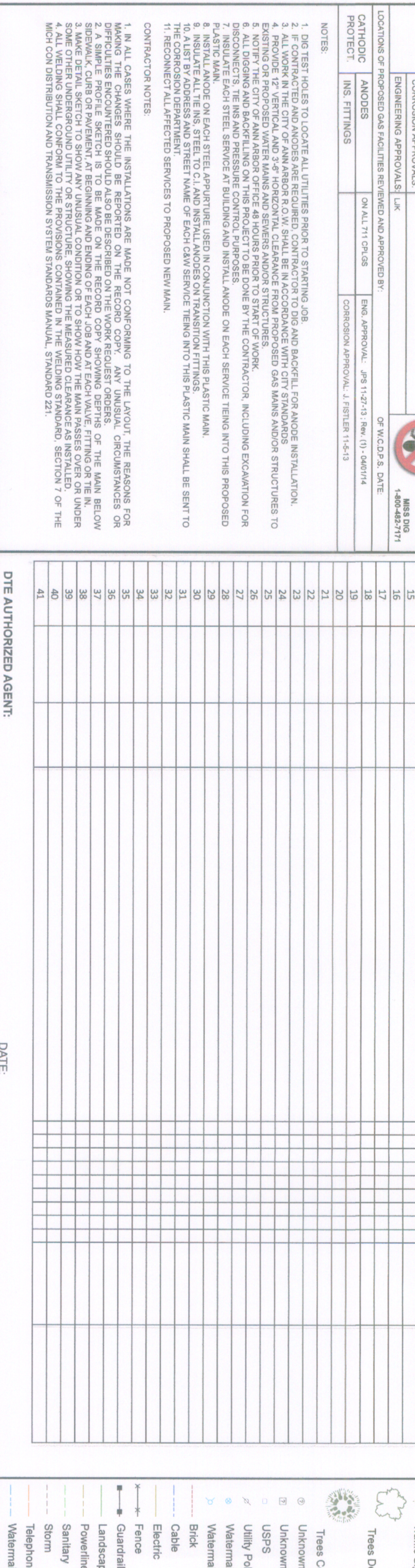
SEQUENCE NUMBER	ABBREVIATED CODE	MFC-ID/SAP NUMBER	LONG DESCRIPTION
1	6/CAP/ST	23000995	6 DRESSER 0700-0215-201 AL-CLAD CTD LINE CAP W/1" VENT
2	6/CAP/ST	23000995	6 DRESSER 0700-0215-201 AL-CLAD CTD LINE CAP W/1" VENT
3	4/S/TE/ST	63422019	4 TD WILLIAMSON 06-7218-0000 SHORTSTOP 3-WAY TEE F/60/225 MACHINE
4	4/T/MS/ST-PL	63151133	4 GFCP 6500569 PE2406 TRANS STU/PE SDR11.5 IPS WELD END ASTM D2513 F/1973
5	6/S/ST		6 MUELLER FITTING, PRESSURE CONTROL, WELDING TYPE, WITH ANS 150 LB
6	6/S/ST		6 MUELLER FITTING, PRESSURE CONTROL, WELDING TYPE, WITH ANS 150 LB
7	3/TE/PL	63071378	3 GFCP 6911494 2406 TEE IPS SDR11/11.5 BR IAPMO
8	4/TE/PL	63071381	4 GFCP 6912160 2406 TEE IPS SDR11/11.5 BR IAPMO
9	4/3 GFCP	10009999	4 X 3 GFCP 10009999 2406 RED IPS SDR11.5 BR IAPMO
10	4/3 GFCP	63071282	4 X 3 GFCP 6911494 2406 TEE IPS SDR11/11.5 BR IAPMO
11	3/TE/PL	63071114	3 GFCP 6911494 2406 TEE IPS SDR11/11.5 BR IAPMO
12	3/TE/PL	63071378	3 GFCP 6911494 2406 TEE IPS SDR11/11.5 BR IAPMO

TRACE IDENTIFIER (digits of 16 digit bar code)	MANUFACTURE	BATCH CODE OR DATE OF MANUFACTURE OR HEAT TREATMENT NUMBER (STEEL ONLY)
1		
2		
3		
4		
5		
6		
7		
8		
9		

Legend:
 • Bollards Posts Poles
 • Cable MH
 • Electric MH
 • Gas Main Flag
 • Gas Valve
 • Ions
 • Lightpoles
 • Sanitary MH
 • Sign
 • Storm CB
 • Storm MH
 • Telephone MH
 • Traffic Signal

Trees:
 • Trees Deciduous
 • Trees Coniferous
 • Unknown Manhole
 • Unknown Str
 • USPS
 • Utility Pole
 • Watermain Hydrant

Other:
 • Brick
 • Electric
 • Fence
 • Guardrail
 • Landscaping
 • Powerlines
 • Sanitary
 • Storm
 • Telephone
 • Watermain



WORKSHEET	SGI # 5196	WorkOrder Owner	FINALS	DATE 3/20/2015	COMPLETION DATE 12/31/2015
LEGEND	NAME OF STREET	P.L.	SDWK	MARGIN	PAVT
Proposed Gas	Avon SO Vinewood	60'	N/A	15'	30'
Existing Gas Distribution	east side		N/A	15'	
Existing Gas Distribution	west side		N/A	15'	
Existing Gas Distribution	Vinewood EO Avon	60'	N/A	15'	30'
Existing Gas Distribution	north side		N/A	15'	
Existing Gas Distribution	south side		N/A	15'	
Existing Gas Distribution	Londonderry SO Devonshire 60'		N/A	15'	30'
Existing Gas Distribution	east side		N/A	15'	
Existing Gas Distribution	west side		N/A	15'	
Existing Gas Distribution	Glendaloch EO Londonderry 60'		N/A	15'	30'
Existing Gas Distribution	north side		N/A	15'	
Existing Gas Distribution	south side		N/A	15'	
Existing Gas Distribution	east side		N/A	15'	
Existing Gas Distribution	west side		N/A	15'	
Existing Gas Distribution	Devonshire EO Londonderry 60'		N/A	15'	30'
Existing Gas Distribution	north side		N/A	15'	
Existing Gas Distribution	south side		N/A	15'	
Existing Gas Distribution	east side		N/A	15'	
Existing Gas Distribution	west side		N/A	15'	
Existing Gas Distribution	Londonderry EO Devonshire 60'		N/A	15'	30'
Existing Gas Distribution	north side		N/A	15'	
Existing Gas Distribution	south side		N/A	15'	
Existing Gas Distribution	east side		N/A	15'	
Existing Gas Distribution	west side		N/A </tr		

LOCATIONS OF PROPOSED GAS FACILITIES REVIEWED AND APPROVED BY:	ENG. APPROVAL:
CATHODIC PROTECT:	CORROSION APPROVAL:
ANODES:	ON ALL 711 CIRCUIS
INS. FITTINGS:	

NOTES:

- DIG TEST HOLES TO LOCATE ALL UTILITIES PRIOR TO STARTING JOB.
- IF CONTRACTED AND ANODES ARE REQUIRED CONTRACTOR TO DIG AND BACKFILL FOR ANODE INSTALLATION.
- WORK IN THE CITY OF ANN ARBOR ROW SHALL BE IN ACCORDANCE WITH CITY STANDARDS EXISTING OR PROPOSED WATER MAINS AND SEWERS AND/OR STRUCTURES TO NOTIFY THE CITY OF ANN ARBOR OFFICE 48 HOURS PRIOR TO START OF WORK.
- ALL DIGGING AND BACKFILLING ON THIS PROJECT TO BE DONE BY THE CONTRACTOR INCLUDING EXCAVATION FOR DISCONNECTS, TIE INS AND PRESSURE CONTROL PURPOSES.
- INSULATE EACH STEEL SERVICE AT BUILDING AND INSTALL ANODE ON EACH SERVICE TIEING INTO THIS PROPOSED MAIN.
- INSULATE EACH STEEL SERVICE USED IN CONJUNCTION WITH THIS PLASTIC MAIN.
- INSULATE ALL TIE INS, STEEL TO C.I. AND INSTALL ANODES ON TRANSITION FITTINGS.
- LIST BY ADDRESS AND STREET NAME OF EACH C&W SERVICE TIEING INTO THIS PLASTIC MAIN SHALL BE SENT TO THE CORROSION DEPARTMENT.
- RECONNECT ALL AFFECTED SERVICES TO PROPOSED NEW MAIN.

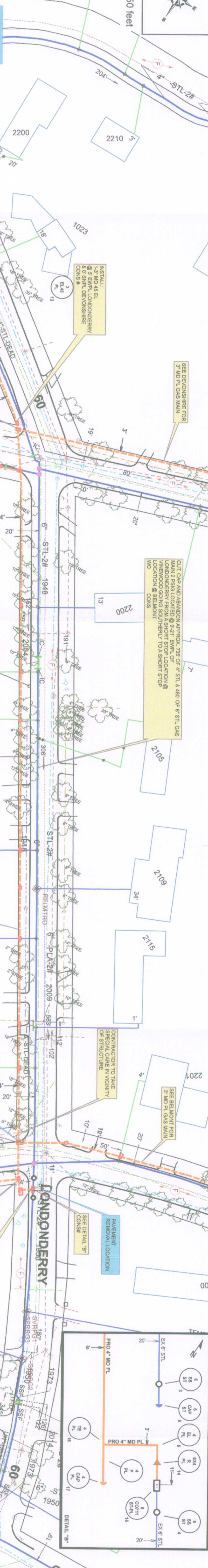
CONTRACTOR NOTES:

- IN ALL CASES WHERE THE INSTALLATIONS ARE MADE NOT CONFORMING TO THE LAYOUT THE REASONS FOR MAKING THE CHANGES SHOULD BE REPORTED ON THE RECORD COPY. ANY UNUSUAL CIRCUMSTANCES OR DIFFICULTIES ENCOUNTERED SHOULD ALSO BE DESCRIBED ON THE WORK REQUEST ORDERS.
- A SIMPLE PROFILE SKETCH IS TO BE MADE ON THE RECORD COPY SHOWING DEPTHS OF THE MAIN BELOW SIDEWALK, CURB OR PAVEMENT AT BEGINNING AND ENDING OF EACH JOB AND AT EACH VALVE FITTING OR TIE IN. THESE DEPTHS SHALL BE MEASURED FROM THE FINISHED GRADE TO THE TOP OF THE MAIN OR TO THE CENTER OF SOME OTHER UNDERGROUND UTILITY OR STRUCTURE AS INDICATED ON THE RECORD DRAWINGS.
- ALL WELDING SHALL CONFORM TO THE PROVISIONS CONTAINED IN THE WELDING STANDARD SECTION 7 OF THE MICH CON DISTRIBUTION AND TRANSMISSION SYSTEM STANDARDS MANUAL, STANDARD 221.

NAME OF STREET	P.L.	SDWK	MARGIN	PAVT	PKWY.
Londonderry NO Belmont 60'	1'	N/A	15'	30'	
east side		N/A	15'		
west side		N/A	15'		
Belmont EO Londonderry 60'	1'	N/A	14'	34'	
north side		N/A	14'		
south side		N/A	14'		
Londonderry NO Glendaloch 60'	1'	N/A	14'	32'	
east side		N/A	14'		
west side		N/A	14'		
Londonderry EO Londonderry 60'	1'	N/A	10'	31'	
north side		N/A	10'		
south side		N/A	10'		
east side		N/A	10'		
west side		N/A	10'		
Glendaloch EO Londonderry 60'	1'	N/A	16'	31'	
north side		N/A	16'		
south side		N/A	16'		
east side		N/A	16'		
west side		N/A	16'		

SEQUENCE NUMBER	ABBREVIATED CODE	MRC-ID/SAP NUMBER	LONG DESCRIPTION	TRACE IDENTIFIER (digi's of 16 digit bar code)	ALTERNATE TRACEABILITY DATA
1	4/SS/ST	4TD WILLIAMSON 06-7213-0000-00 SHORTSTOPP 60/275/811 MACHINES	1 2 3 4 5 6 7 8 9	MANUFACTURE	BATCH CODE OR DATE OF MANUFACTURE OR HEAT TREATMENT NUMBER (STEEL ONLY)
2	4/SS/ST	4TD WILLIAMSON 06-7213-0000-00 SHORTSTOPP 60/275/811 MACHINES			
3	6/SS/ST	6MUELLER FITTING, PRESSURE CONTROL, WELDING TYPE WITH ANS 150 LB			
4	6/SS/ST	6MUELLER FITTING, PRESSURE CONTROL, WELDING TYPE WITH ANS 150 LB			
5	6/CAP/ST	23004995 6DRESSER 0700-0215-201 AL-CLAD CTD LINE CAP W/1 VENT			
6	4/EL/PL	63071117 4GFCP 6932158 2406 90 DEG ELL IPS SDR11/11.5 BF IAPMO			
7	4/CO/711/ST-PL	63071117 4DRESSER 0711 CHG ST X IPS PE SDR11			
8	3/CAP/PL	63071202 3GFCP 69303220000 2406 CAP IPS SDR11 BF IAPMO			
9	3/EL/PL	63071114 3GFCP 6914433 2406 90 DEG ELL IPS SDR11/11.5 BF IAPMO			
10	4/X/N/PL	63071282 4X 3 GFCP 10009959 2406 RED IPS SDR11/11.5 BF IAPMO			
11	4/CAP/ST	23004996 4DRESSER 0700-0213-201 AL-CLAD CTD LINE CAP			
12	3/TE/PL	63071278 3GFCP 6911434 2406 TEE IPS SDR11/11.5 BF IAPMO			
13	3/EL/5/PL	63071259 3GFCP 6910559 2406 45 DEG ELL IPS SDR11/11.5 BF			
14	6/4/N/PL	63071291 6X 4GFCP 69106421000 2406 RED IPS SDR11/11.5 BF			
15	6/CO/711/ST-PL	63071381 6DRESSER 0711 CHG ST X IPS PE SDR11			
16	4/TE/PL	63071381 4GFCP 6932160 2406 TEE IPS SDR11/11.5 BF IAPMO			
17	4/CAP/PL	63071030 4GFCP 693104220000 2406 CAP IPS SDR11 BF IAPMO			
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Legend
● Bollards Posts Poles
○ Cable MH
□ Electric MH
□ Electric Str
□ Gas Main Flag
□ Gas Main MH
□ Gas Valve
□ Irons
□ Lighthouses
□ Sanitary MH
□ Sign
□ Storm CB
□ Storm MH
□ Telephone MH
□ Traffic Signal
□ Unknown Manhole
□ Unknown Str
□ USPS
□ Utility Pole
□ Watermain GV
□ Watermain Hydrant
□ Brick
□ Fence
□ Guardrail
□ Landscaping
□ Powerlines
□ Sanitary
□ Storm
□ Telephone
□ Watermain



NOTES:

- 1) TE-OVER OR RENEW ALL PLAS SERVICES AND RENEW ALL NON-PLASTIC SERVICES TO NEW 3" MDP GAS MAIN (2 PSIG)
- 2) ANY SERVICE TO BE TIED OVER MUST HAVE PROPER DOCUMENTATION OR BE RE-TESTED AT TIME OF THE COVER