

CITY OF ANN ARBOR
INVITATION TO BID



Geddes Road Water Main

ITB No. 4656

Due Date: Tuesday, April 6, 2021 at 10:00 A.M. (Local Time)

Public Services
Engineering Unit

Issued By:

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

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- City of Ann Arbor Prevailing Wage Declaration Form*
- City of Ann Arbor Living Wage Forms*
- City of Ann Arbor Vendor Conflict of Interest Disclosure Form*
- City of Ann Arbor Non-Discrimination Ordinance Declaration Form and Notice*

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.

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. No alternative bid will be considered unless alternative bids are specifically requested. If alternatives are requested, any deviation from the specification must be fully described, in detail on the "Alternate" section of Bid form.

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 Clarifications / Designated City Contacts

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 **Wednesday, March 23, 2021** and should be addressed as follows:

Specification/Scope of Work questions emailed to bslizewski@a2gov.org
Bid Process and Compliance questions emailed to cspencer@a2gov.org

Any error, omissions or discrepancies in the specification discovered by a prospective contractor and/or service provider shall be brought to the attention of Brian Slizewski after discovery as soon as possible. Further, the contractor and/or service provide shall not be allowed to take advantage of errors, omissions or discrepancies in the specifications.

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 6, 2021 at 10:00 a.m. (local time)**. 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 No. 4656, Geddes Road Water Main**.

Bids must be addressed and delivered to:

City of Ann Arbor
Procurement Unit,
c/o Customer Services, 1st Floor
301 East Huron Street
Ann Arbor, MI 48104

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

The following forms provided within this ITB Document should be included in submitted bids.

- **City of Ann Arbor Prevailing Wage Declaration of Compliance**
- **City of Ann Arbor Living Wage Ordinance Declaration of Compliance**
- **Vendor Conflict of Interest Disclosure Form**
- **City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance**

Bids that fail to provide these forms listed above upon bid opening may be rejected as non-responsive and may not be considered for award.

Hand delivered bids may be dropped off in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall which is accessible to the public at all hours. 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 for submission of bids past the stated due date and time will not be granted to a single Bidder; however, additional time may be granted to all Bidders when the City determines in its sole discretion 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. All key staff and subcontractors are subject to the approval by the City.

Official Documents

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. Bidders do not need to be shown on the plan holders list provided by MITN to be considered an official plan holder.

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 Sixty (60) days

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-2, Article III of the Contract. If these time requirements can not 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 Section 5, beginning at page GC-2 shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

Wage Requirements

Section 4, beginning at page GC-1, outlines the requirements for payment of prevailing wages and for payment of a "living wage" to employees providing service to the City under this contract. The successful bidder and its subcontractors must comply with all applicable requirements and provide proof of compliance.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. Use of the Prevailing Wage Form provided in the Appendix section or a City-approved equivalent will be required along with wage rate interviews.

For laborers whose wage level are subject to federal, state and/or local prevailing wage law the appropriate Davis-Bacon wage rate classification is identified based upon the work including within this contract. **The wage determination(s) current on the date 10 days before bids are due shall apply to this contract.** The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: beta.SAM.gov.

For the purposes of this ITB the Construction Type of Heavy will apply.

Conflict Of Interest Disclosure

The City of Ann Arbor Purchasing Policy requires that prospective Vendors complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected Vendor unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City. A copy of the Vendor Conflict of Interest Disclosure Form is attached.

Major Subcontractors

The Bidder shall identify on Bid Form Section 4 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. The Bidder shall not change or replace a subcontractor without approval by the City.

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 submitter'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.

Any inquiries or requests regarding this procurement should be only submitted in writing to the Designated City Contacts provided herein. Attempts by any prospective bidder to initiate contact with anyone other than the Designated City Contacts provided herein that the bidder believes can influence the procurement decision, e.g., Elected Officials, City Administrator, Selection Committee Members, Appointed Committee Members, etc., may lead to immediate elimination from further consideration.

Cost Liability

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the Bidder prior to the execution of a contract with the City. By submitting a bid, a bidder agrees to bear all costs incurred or related to the preparation, submission and selection process for the bid.

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.

Idlefree Ordinance

The City of Ann Arbor adopted an idling reduction Ordinance that goes into effect July 1, 2017. The full text of the ordinance (including exemptions) can be found at: www.a2gov.org/idlefree.

Under the ordinance, No Operator of a Commercial Vehicle shall cause or permit the Commercial Vehicle to Idle:

- (a) For any period of time while the Commercial Vehicle is unoccupied; or
- (b) For more than 5 minutes in any 60-minute period while the Commercial Vehicle is occupied.

In addition, generators and other internal combustion engines are covered

(1) Excluding Motor Vehicle engines, no internal combustion engine shall be operated except when it is providing power or electrical energy to equipment or a tool that is actively in use.

Environmental Commitment

The City of Ann Arbor recognizes its responsibility to minimize negative impacts on human health

and the environment while supporting a vibrant community and economy. The City further recognizes that the products and services the City buys have inherent environmental and economic impacts and that the City should make procurement decisions that embody, promote, and encourage the City's commitment to the environment.

The City encourages potential vendors to bring forward emerging and progressive products and services that are best suited to the City's environmental principles.

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 City Nondiscrimination requirements and Declaration of Compliance Form, Living Wage requirements and Declaration of Compliance Form, Prevailing Wage requirements and Declaration of Compliance Form, Vendor Conflict of Interest Form, 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 (if applicable) 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 1:320 (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 certifies that the statements contained in the City Prevailing Wage and Living Wage Declaration of Compliance Forms are true and correct. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder declares that it has become familiar with the City Conflict of Interest Disclosure Form and certifies that the statement contained therein is true and correct.

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 _____, 202_.

Bidder's Name

Authorized Signature of Bidder

Official Address

(Print Name of Signer Above)

Telephone Number

Email Address for Award Notice

LEGAL STATUS OF BIDDER

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

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.

NOTE: If not incorporated in Michigan, please attach the corporation's Certificate of Authority

• A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

* A partnership, organized under the laws of the state of _____ and filed in the county of _____, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):

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

Authorized Official

_____ **Date** _____, 202_

(Print) Name _____ Title _____

Company: _____

Address: _____

Contact Phone () _____ Fax () _____

Email _____

BID FORM

Company: _____

Project: **Geddes Road Water Main**

File # **2018-040** Bid # **4656**

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
114	Type A Lighted Arrow Board, Furnished and Operated	EA	2	\$ _____	\$ _____
140	Exploratory Excavations (0-10deep) Tr Det 1	EA	10	\$ _____	\$ _____
201	Project Supervision, Max. \$ 40,000	LS	1	\$ _____	\$ _____
202	General Conditions, Max. \$ 80,000	LS	1	\$ _____	\$ _____
203	Minor Traffic Control Max. \$ 40,000	LS	1	\$ _____	\$ _____
204	Digital Audio Visual Coverage	LS	1	\$ _____	\$ _____
205	Certified Payroll Compliance and Reporting	LS	1	\$ _____	\$ _____
206	Allowance for Unforeseen Site Conditions	DLR	25000	\$ <u>1.00</u>	\$ <u>25,000.00</u>
207	Cleanup and Restoration, Special, Max \$10,000	LS	1	\$ _____	\$ _____
209	Machine Grading Modified	SYD	8000	\$ _____	\$ _____
212	Subgrade Undercutting - Type II	CY	100	\$ _____	\$ _____
214	Temporary 12 inch Water Main Line Stop	EA	2	\$ _____	\$ _____
215	Temporary 16 inch Water Main Line Stop	EA	2	\$ _____	\$ _____
220	HMA Pavement Base 3C	TON	1200	\$ _____	\$ _____
221	HMA Pavement Leveling Coarse 4E3	TON	900	\$ _____	\$ _____
222	HMA Pavement Wearing Coarse 5E3	TON	700	\$ _____	\$ _____
224	HMA Approach 4E3	Ton	100	\$ _____	\$ _____
225	HMA Hand Patching 4E3	Ton	100	\$ _____	\$ _____
242	Additional Depth Structure Adjustment and Repair	VF	10	\$ _____	\$ _____
243	Temp Lowering Existing Structure	EA	7	\$ _____	\$ _____
245	Adjust Structure Cover	EA	7	\$ _____	\$ _____
251	Fire Hydrant Assembly Abandonment	EA	4	\$ _____	\$ _____
260	Class II Sand Sub-Base CIP	CY	1800	\$ _____	\$ _____
261	21AA Limestone - C.I.P.	CY	100	\$ _____	\$ _____
262	Aggregate Base Course, 21AA - C.I.P.	CY	2200	\$ _____	\$ _____
271	Portable, Changeable Message Sign, Furn. & Oper.	EA	6	\$ _____	\$ _____

TOTAL THIS PAGE (BF-1) \$ _____
 (Also to be entered on Page BF-3)

BID FORM

Company: _____

Project: Geddes Road Water Main

File # 2018-040 Bid # 4656

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
272	Plastic Drum - Lighted, Furnished and Operated	EA	210	\$ _____	\$ _____
273	Type III Lighted Barricade, Furnished & Operated	EA	10	\$ _____	\$ _____
274	Temporary Type B Signs, Furn. & Oper.	SF	500	\$ _____	\$ _____
275	Temp. Sign Type B Special, Furn. & Oper	SF	100	\$ _____	\$ _____
281	Pavt Mrkg Type R 4" white	LF	800	\$ _____	\$ _____
282	Pavt Mrkg Type R 4" yellow	LF	300	\$ _____	\$ _____
283	Pavt Mrkg Polyurea 6" White	LF	5600	\$ _____	\$ _____
284	Pavt Mrkg Polyurea 4" Yellow	LF	5600	\$ _____	\$ _____
285	Pavt Mrkg Overlay Cold Plastic 24" Stop Bar	LF	90	\$ _____	\$ _____
290	Mulch Blanket, Modified	SYD	1500	\$ _____	\$ _____
391	Pipe Undercut & Refill (6AA)	CY	25	\$ _____	\$ _____
402	Class 50 W/Poly-Wrap 6 inch SD-TD-1	FT	50	\$ _____	\$ _____
403	Class 50 W/Poly-Wrap 8 inch SD-TD-1	FT	100	\$ _____	\$ _____
405	Class 50 W/Poly-Wrap 12 inch SD-TD-1	FT	50	\$ _____	\$ _____
406	Class 50 W/Poly-Wrap 16 inch SD-TD-1	FT	2900	\$ _____	\$ _____
416	DIP 12" 45 Degree Bend	EA	2	\$ _____	\$ _____
417	DIP 12" 22.5 Degree Bend	EA	2	\$ _____	\$ _____
418	DIP 16" 45 Degree Bend	EA	17	\$ _____	\$ _____
419	DIP 6" x 8" Reducer	EA	7	\$ _____	\$ _____
419	DIP 16" 22.5 Degree Bend	EA	2	\$ _____	\$ _____
433	DIP 8" x 16" x 16" Tee	EA	7	\$ _____	\$ _____
434	DIP 16" x 16" x 12" Tee	EA	1	\$ _____	\$ _____
440	Fire Hydrant Assembly	EA	7	\$ _____	\$ _____
448	16 Inch Gate Valve in Well	EA	7	\$ _____	\$ _____
460	Excavate/Backfill for Water Service Lead	FT	120	\$ _____	\$ _____
481	Water Main Pipe Abandonment	LF	2900	\$ _____	\$ _____

TOTAL THIS PAGE (BF-2) \$ _____
 (Also to be entered on Page BF-3)

BID FORM

Company: _____

Project: Geddes Road Water Main

File # 2018-040 Bid # 4656

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
483	Gate Valve-in-Well Abandonment	EA	2	\$ _____	\$ _____
500	HMA Surface Remove	SY	8000	\$ _____	\$ _____
703	Inlet Filter	EA	8	\$ _____	\$ _____
800	Silt Fence	LF	700	\$ _____	\$ _____
882	4" topsoil, seeding, and mulching	SY	1500	\$ _____	\$ _____
TOTAL THIS PAGE (BF-3)				\$ _____	
TOTAL FROM PAGE BF-1				\$ _____	
TOTAL FROM PAGE BF-2				\$ _____	
TOTAL BASE BID				\$ _____	

BID FORM

Section 2 – Material, Equipment and Environmental Alternates

The Base Bid proposal 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.

If an environmental alternative is bid the City strongly encourages bidders to provide recent examples of product testing and previous successful use for the City to properly evaluate the environmental alternative. Testing data from independent accredited organizations are strongly preferred.

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</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 _____ Date _____

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-2, 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 _____ Date _____

BID FORM

Section 4 - Major 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.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision to Section 4 of the General Conditions covering subcontractor's employees who perform work on this contract.

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 _____ Date _____

BID FORM

Section 6 – Contractor Information and Responsible Contractor Criteria

Backup documentation may be requested at the sole discretion of the City to validate all of the responses provided herein by bidders. False statements by bidders to any of the criteria provided herein will result in the bid being considered non-responsive and will not be considered for award.

Failure to provide responses to all questions may result in being deemed non-responsive.

Attach additional pages as needed if space below is insufficient.

Pursuant to Sec 1:312(20) of the City Code which sets forth requirements of a responsible bidder, Bidder is required to submit the following:

1. Organization Name: _____

Social Security or Federal Employer I.D. #: _____

Address: _____

City: _____ State: _____ Zip: _____

Type of Organization (circle one below):

Individual Partnership Corporation Joint Venture Other

If "Other" please provide details on the organization:

Year organization established: _____

2. Current owners/principals/members/managing members/partners of the organization:

3. Assumed Names, "doing business as" d/b/a, and/or former organization names(s), if applicable: _____

Explanation of any business name changes:

4. If applicable, please provide a list of all bidder's litigation and arbitrations currently pending and within the past five years, including an explanation of each (parties, court/forum, legal claims, damages sought, and resolution).

5. Qualifications of management and supervisory personnel to be assigned by the bidder:

6. State and local licenses and license numbers held by the bidder:

7. Will all subcontractors, employees and other individuals working on the construction project maintain current applicable licenses required by law for all licensed occupations and professions?

Yes

No

8. Will contractors, subcontractors, employees, and other individuals working on the construction project be misclassified by bidder as independent contractors in violation of state or federal law?

Yes

No

9. Submit a statement as to what percentage of your work force resides within the City of Ann Arbor, and what percentage resides in Washtenaw County, Michigan, and the same information for any major subcontractors.

10. Submit documentation as to employee pay rates.

11. Submit a statement whether bidder provides health insurance, pension or other retirement benefits, paid leave, or other benefits to its employees.

12. Submit a statement explaining bidder's Equal Employment Opportunity Programs for minorities, women, veterans, returning citizens, and small businesses along with supporting documentation or other evidence.

13. Has bidder had any violations of state, federal or local laws or regulations, including OSHA or MIOSHA violations, state or federal prevailing wage laws, wage and hour laws, worker's compensation or unemployment compensation laws, rules or regulations, issued to or against the bidder within the past five years?

Yes

No

If you answered "yes" to the question above, for each violation provide an explanation of the nature of the violation, the agency involved, a violation or reference number, any other individual(s) or party(ies) involved, and the status or outcome and resolution.

14. Does bidder have an existing Fitness for Duty Program (drugs and alcohol testing) of each employee working on the proposed jobsite?

Yes

No

15. By attachment, please provide the following:

- Disclosure of any debarment by any federal, state or local governmental unit and/or findings of non-responsibility or non-compliance with respect to any public or private construction project performed by the bidder. Proof of insurance, including certificates of insurance, confirming existence and amount of coverage for liability, property damage, workers compensation, and any other insurances required by the proposed contract documents.

16. Does bidder have an on-going MIOSHA-approved safety-training program for employees to be used on the proposed job site?

Yes

No

17. Does bidder have evidence of worker's compensation Experience Modification Rating ("EMR")?

Yes

No

EMR = _____

18. Can bidder provide a ratio of masters and journeypersons to apprentices proposed to be used on the construction project job site, documentation of master or journeyperson certification or status and the source for same, and if not, the qualifications of employees who will be assigned to work on the project?

Yes

No

If, yes, Ratio = _____

19. Can bidder provide documentation that it participates in a Registered Apprenticeship Program (RAP) that is registered with the United States Department of Labor Office of Apprenticeship or by a State Apprenticeship Agency recognized by the Office of Apprenticeship?

Yes

No

If bidder answered "yes" to the question above and is selected for this project, bidder will be required to submit the RAP to the City.

If bidder answered "no" to the question above, please provide details on how your organization assess the skills and qualifications of any employees who do not have master or journeyperson certification or status, or are not participants in a Registered Apprenticeship Program identified above.

20. Will bidder comply with all applicable state and federal laws and visa requirements regarding the hiring of non-US citizens, and disclosure of any work visas sought or obtained by the bidder, any of the bidder's subcontractors, or any of the bidder's employees or independent contractors, in order to perform any portion of the project?

Yes

No

21. Can bidder provide audited financial information current within the past twelve (12) months, such as a balance sheet, statement of operations, and bonding capacity?

Yes

No

(Evidence that bidder has financial resources to start up and follow through on the project(s) and to respond to damages in case of default as shown by written verification of bonding capacity equal to or exceeding the amount of the bidder's scope of work on the project. The written verification must be submitted by a licensed surety company rated "B+" (or better) in the current A.M. Best Guide and qualified to do business within the State of Michigan, and the same audited financial information for any subcontractor estimated to be paid more than \$100,000.00 related to any portion of the project.)

22. Can bidder provide evidence of a quality assurance program used by the bidder and the results of any such program on the bidder's previous projects?

Yes

No

SAMPLE STANDARD CONTRACT

If a contract is awarded, the selected contractor will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors of service to the City of Ann Arbor such as the following:

Administrative Use Only
Contract Date: _____

CONTRACT

THIS CONTRACT is between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 ("City") and _____ ("Contractor")

(An individual/partnership/corporation, include state of incorporation) (Address)

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 **Geddes Road Water Main, ITB #4656**, in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

Non-discrimination and Living Wage Declaration of Compliance Forms (if applicable)	General Conditions
Vendor Conflict of Interest Form	Standard Specifications
Prevailing Wage Declaration of Compliance Form (if applicable)	Detailed Specifications
Bid Forms	Plans
Contract and Exhibits	Addenda
Bonds	

ARTICLE II - Definitions

Administering Service Area/Unit means **Engineering Unit**

Project means **Geddes Road Water Main, ITB #4656**

Supervising Professional means the person acting under the authorization of the manager of the Engineering Unit. At the time this Contract is executed, the Supervising Professional is: Brian Slizewski, P.E. whose job title is Project Manager. If there is any question concerning who the Supervising Professional is, Contractor shall confirm with the manager of the Administering Service Area/Unit.

Contractor's Representative means _____ **[Insert name]** whose job title is **[Insert job title]**.

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 ninety (90) consecutive calendar days.
- (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 equal to \$1,000 for each calendar day of delay in the completion of all the work. 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.

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.

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 Form for the estimated bid 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. Increases or decreases shall be determined only by written agreement between the City and Contractor.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted any portion of any right or obligation under this contract without the written consent of the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under this contract unless specifically released from the requirement, in writing, by 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 Contract, 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 Contract.

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. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; or (2) three days after mailing certified U.S. mail.

ARTICLE IX - Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold 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. The provisions of this Article shall survive the expiration or earlier termination of this contract for any reason.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations, negotiations, agreements, or understandings whether written or oral. Neither party has relied on any prior representations in entering into this Contract. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Contract, regardless of the other party's failure to object to such form. This Contract shall be binding on and shall inure to the benefit of the parties to this Contract and their permitted successors and permitted assigns and nothing in this Contract, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

ARTICLE XI – Electronic Transactions

The City and Contractor agree that signatures on this Contract may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Contract. This Contract may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

FOR CONTRACTOR

By _____

Its: _____

FOR THE CITY OF ANN ARBOR

By _____
Christopher Taylor, Mayor

By _____
Jacqueline Beaudry, City Clerk

Approved as to substance

By _____
Tom Crawford
City Administrator

By _____
Craig Hupy
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 entitled _____
_____, for ITB No. _____ 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.
- (6) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_.

(Name of Surety Company)
By _____
(Signature)

Its _____
(Title of Office)

Approved as to form:

Stephen K. Postema, City Attorney

(Name of Principal)
By _____
(Signature)

Its _____
(Title of Office)

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 entitled _____

_____, for ITB No. _____; 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.
- (5) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_

(Name of Surety Company)
By _____
(Signature)
Its _____
(Title of Office)

Approved as to form:

Stephen K. Postema, City Attorney

(Name of Principal)
By _____
(Signature)
Its _____
(Title of Office)

Name and address of agent:

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.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. A sample Prevailing Wage Form is provided in the Appendix herein for reference as to what will be expected from contractors. Use of the Prevailing Wage Form provided in the Appendix section or a City-approved equivalent will be required along with wage rate interviews.

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.

If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Contract a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Contract are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

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 MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of Title IX of the Ann Arbor City Code, and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

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 I3. 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

- (1) 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 and the City from all claims for bodily injuries, death or property damage that may arise under this Contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of any work under this contract, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the required policies and endorsements. The certificates of insurance endorsements and/or copies of

policy language shall document that the Contractor satisfies the following minimum requirements. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

Required insurance policies include:

- (a) 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

- (b) Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements specifically for the following coverages: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further there shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. 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 Project General Aggregate
\$1,000,000	Personal and Advertising Injury
\$2,000,000	Products and Completed Operations Aggregate

- (c) Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. 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.

- (d) 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.

- (2) Insurance required under subsection (1)(b) and (1)(c) above 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 for any insurance listed herein.

- (3) Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and un-qualified 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(s); name of insurance company(s); name and address of the agent(s) or authorized representative(s); name(s), email address(es), and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which may be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) and all required endorsements 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 and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.
- (4) Any Insurance provider of Contractor shall be 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-authorized insurance companies are not acceptable unless approved in writing by the City.
- (5) City reserves the right to require additional coverage and/or coverage amounts as may be included from time to time in the Detailed Specifications for the Project.
- (6) The provisions of General Condition 28 shall survive the expiration or earlier termination of this contract for any reason.

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 authorized to transact business in Michigan and 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.

Section 43

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 _____, 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.

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 Bid. 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.

Standard Specifications are available online:

<http://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx>

DETAILED SPECIFICATIONS

**DETAILED SPECIFICATION
FOR
PROJECT SCHEDULE AND PAYMENT**

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 **Pre-Construction Meeting** 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. It is anticipated the Contractor will be authorized by City Council on May, 17, 2021. The contract will be sent to the contractor at least two weeks prior to the council Award. The Contractor shall properly execute both copies of the Contract and return them, with the required Bonds and Insurance Certificate, to the City **on or before May 18, 2021**.
3. Contractor may begin construction on 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. It is anticipated that the pre-construction meeting will be held the week of May 17, and a Notice to Proceed will be issued the following week. The Contractor should anticipate commencing work on June 1, 2021
6. All contract work must be complete and open to traffic by within **ninety (90)** calendar days from the date specified in the Notice to Proceed. Project completion includes, but not limited to: install, swab, chlorinate, pressure test, flush and test the new water main pipe, connect all water service leads to the new main and complete all the remaining work under this Contract for Geddes Road including, but not limited to the restoration of all disturbed areas, permanent placement of hot mix asphalt and, and the removal of any and all traffic control devices.
7. 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, **\$1,000.00** 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.

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."

**DETAILED SPECIFICATION
FOR
ITEM #201 - PROJECT SUPERVISION, MAX \$40,000**

DESCRIPTION

The Contractor shall designate a full-time Project Supervisor to act as the Contractor's agent/representative, and to be responsible for scheduling and coordination of all subcontractors, suppliers, other governmental agencies, and all public and private utility companies.

The Project Supervisor shall not be an active crew member of the Contractor, shall not be an active member or employee of any subcontractor's work force, and shall not perform general or specialized labor tasks.

The Project Supervisor shall work exclusively on this project, and shall put forth his/her full effort into the organization and coordination of the work of this project.

Prior to the pre-construction meeting, the Contractor shall designate a proposed Project Supervisor by name, and shall furnish the City with a current, thorough, detailed summary of the proposed Project Supervisor's work history, outlining all previous supervisory experience on projects of a similar size and nature. The detailed work history shall include personal and professional references (names and phone numbers) of persons (previous owners or agents) who can attest to the qualifications and work history of the proposed Project Supervisor. Proposed candidates for Project Supervisor shall have a demonstrated ability to work harmoniously with the City, the public, subcontractors, and all other parties typically involved with work of this nature. The Supervising Professional will have the authority to reject a proposed Project Supervisor whom he/she considers unqualified.

The Project Supervisor shall be available 24 hours-per-day to provide proper supervision, coordination and scheduling of the project for the duration of the Contract. The Contractor shall furnish the City with telephone numbers of the Project Supervisor in order to provide 24 hour-per-day access during business and non-business hours, including weekends and holidays.

The Project Supervisor shall be equipped by the Contractor with a mobile telephone to provide the City with 24 hour-per-day access to him/her during daily construction activities, during transit to and from the construction site, and during all non-business hours including weekends and holidays.

The Project Supervisor shall be equipped with assistants as necessary to provide project supervision as specified herein, and in accordance with the Contract.

DUTIES AND RESPONSIBILITIES

The Project Supervisor work harmoniously with the City, the public, subcontractors, and all other parties typically involved with work of this nature.

The Project Supervisor shall have a thorough, detailed understanding and working knowledge of all construction practices and methods specified elsewhere herein, as well as the handling, placement, testing and inspection of aggregates, aggregate products, HMA concrete, and portland cement concrete materials.

The Project Supervisor shall be responsible for all of the work of all of the Contractor's, subcontractors' and suppliers' work forces.

The Project Supervisor shall be responsible for proper and adequate maintenance (emissions, safety, and general operation) of all of the Contractor's, subcontractors' and suppliers' equipment and vehicles.

The Project Supervisor shall be responsible for the legal, proper and safe parking/storage of all of the Contractor's,

subcontractors' and suppliers' equipment, work vehicles, and employee's vehicles.

The Project Supervisor shall schedule and coordinate the work of all parties involved in the project, including utility companies, testing agencies, governmental agencies, all City departments (such as Utilities and Transportation), and City inspectors.

The Project Supervisor shall coordinate and schedule the work of any independent survey crews that may be retained by the City to witness and reset existing and new geographic/benchmark monuments. Failure to have existing monuments witnessed and reset may result in delays to the Contractor's work. Costs for such delays will be the Contractor's sole responsibility.

The Project Supervisor shall coordinate and schedule both Testing inspectors and City inspectors in a timely manner, to assure proper and timely testing and inspection of the work.

The Project Supervisor shall review the Inspector's Daily Reports (IDRs) for accuracy, and shall sign all IDRs on a daily basis as the representative of the Contractor. Items to be reviewed include descriptions, locations and measurements of quantities of work performed, workforce, equipment, and weather. The Project Supervisor shall also be responsible for its subcontractors' review and initialing of IDRs containing work items performed by each respective subcontractors.

The Project Supervisor shall submit to the Engineer, an updated, detailed schedule of the proposed work on a weekly basis, and an update of all proposed changes on a daily basis, all in accordance with the Detailed Specification for Project Schedule contained elsewhere herein.

The Project Supervisor shall schedule and chair a weekly progress meeting with the Engineer and all subcontractors to discuss the work. Upon the completion of each meeting, the Project Supervisor shall prepare and distribute, to all present, a written summary of the meeting's minutes. Those in attendance shall review the minutes and, if necessary, comment on any deficiencies or errors prior to or at the next scheduled progress meeting.

ADDITIONAL PERFORMANCE REQUIREMENTS

If, in the sole opinion of the Supervising Professional, the Project Supervisor is not adequately performing the duties as outlined in this Detailed Specification, the following system of notices will be given to the contractor with the associated penalties:

- First Notice – A warning will be issued in writing to the contractor detailing the deficiencies in the Project Supervision. The contractor must respond within 7 calendar days in writing with a plan to correct the stated deficiencies. Failure to respond within 7 calendar days will result in the issuing of a second notice.
- Second Notice – A second warning will be issued in writing to the contractor further detailing the deficiencies in the Project Supervision. The contractor must respond within 7 calendar days in writing with a plan to correct the stated deficiencies. Failure to respond within 7 calendar days will result in the issuing of a third notice. A deduction of 10% will be made from the original Project Supervision contract amount. At this time, the City reserves the right to meet with personnel with the necessary authority within the Contractor's organization to discuss the deficiencies in the Project Supervision.
- Third Notice – An additional deduction of 25% will be made from the original Project Supervision contract amount, and the Project Supervisor shall be removed from the project, and replaced immediately with another individual to be approved by the Supervising Professional.

Should, in the sole opinion of the Supervising Professional, the Project Supervisor fail to perform his/her duties and responsibilities as described herein to such a degree that the successful completion of the project is put in jeopardy, the

above system of notices may be foregone, and the Contractor shall immediately replace the Project Supervisor upon receipt of written notice. Failure to provide adequate project supervision, as determined by the Engineer, shall be considered basis for the Supervising Professional to suspend work without extension of contract time or additional compensation.

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:

<u>PAY ITEM</u>	<u>PAY UNIT</u>
Project Supervision, Max \$40,000	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 - GENERAL CONDITIONS, MAX \$80,000**

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
- Maintaining drainage
- Maintaining drives, drive openings, sidewalks, bikepaths, mail deliveries, and solid waste/recycle pick-ups
- 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
- 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
- Parking meter bags
- Coordinating and cooperating with DDA and Republic Parking in installing electrical outlets on existing street lights and with removal/replacement of parking meters.
- Disposing of excavated materials and debris
- All miscellaneous and incidental items such as overhead, insurance, and permits.

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

General Conditions, Max \$80,000

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 #203 – MINOR TRAFFIC DEVICES, MAX \$40,000**

DESCRIPTION

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.

Where there is metered parking, the Contractor shall either rent and install meter bags, or, with the Engineer's authorization, coordinate with the City Transportation Division to have meter heads removed and reinstalled.

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.

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

PAY UNIT

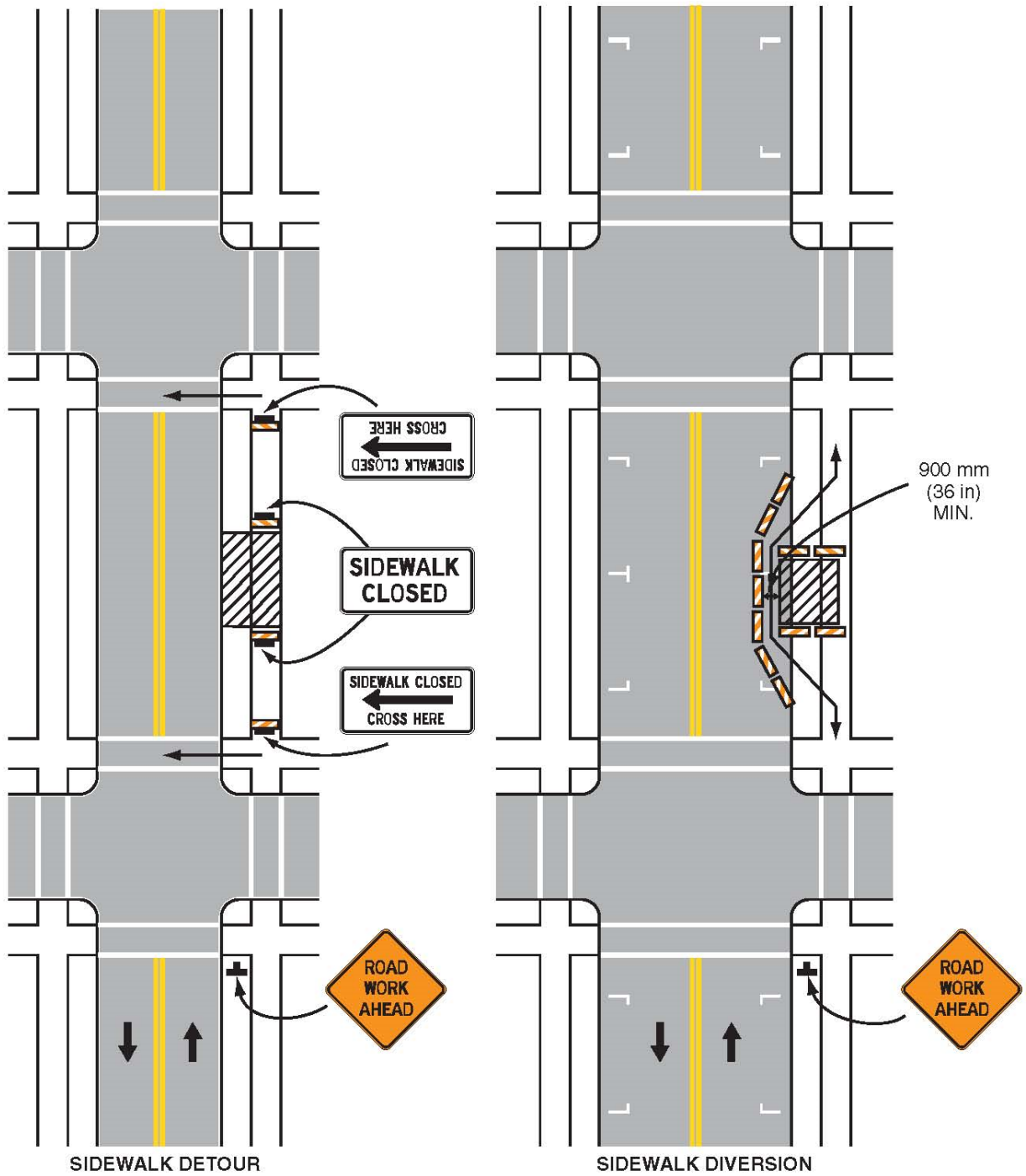
Minor Traffic Devices, Max \$40,000

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)

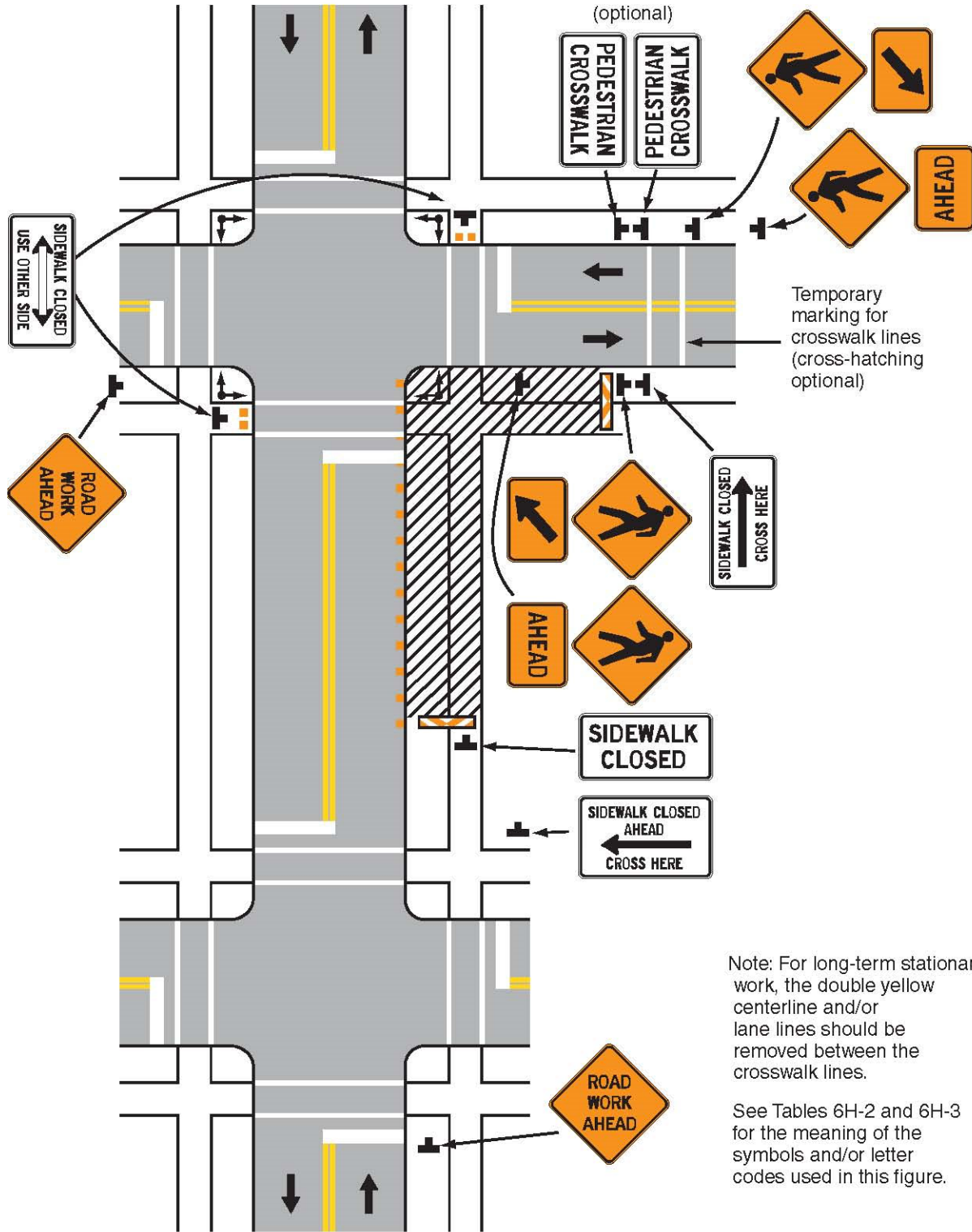


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Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.
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Figure 6H-29. Cross walk Closures and Pedestrian Detours (MI) (TA-29)



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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**DETAILED SPECIFICATION
FOR
ITEM #204 – 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 prior to the start of construction.

The audio-visual filming 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, 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 film determined by the Engineer to be unacceptable for the documentation of existing conditions shall be filmed again at the Contractor's sole expense prior to mobilizing onto the site.

PRODUCTION

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

1. DVD Format, No Editing - The filming shall be done in color using equipment that allows audio and visual information to be recorded. Splicing or editing of the tape shall not be allowed and the speed and electronics of the videotaping equipment and DVD shall be equal to that which is standard to the video industry.
2. Perspective / Speed / Pan / Zoom - To ensure proper perspective, the distance from the ground to the camera lens shall not be less than 10 feet and the filming 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 longer than 100 feet along the filming route. Additional audio commentary shall be provided as necessary during filming to describe streets, buildings, landmarks, and other details, which will enhance the record of existing conditions.
5. Visibility / Ground Cover - The filming shall be performed during a time of good visibility. Filming shall not be performed during periods of precipitation or when snow, leaves, or other natural debris obstruct the area being filmed. The Contractor shall notify the Engineer in writing in the event that the weather or snow cover is anticipated to cause a delay in filming.

COVERAGE

The audio-visual coverage shall include the following:

A. General Criteria. These 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 or through which they will be transported. The recording shall extend an additional 50 feet outside of all areas. The recording shall include all significant, existing man-made and natural features such as 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.

B. Private Property. Record all private property that may be utilized by the Contractor in conjunction with this project. These project areas must be disclosed by the Contractor prior to using them for the work of this project.

C. Road Construction Area. The recording coverage shall:

- (1) Extend to 50 feet outside of the right-of-way and easements area as shown on the plans.
- (2) Extend 50 feet outside the construction limits on all streets, including side streets.
- (3) Both sides of each street shall be recorded separately.

D. Detour Route / Maintenance of Traffic Areas. The entire detour route and maintenance of traffic areas shall be recorded as indicated in this special provision except as follows:

- (1) The recording must proceed in the general direction of travel at a speed not exceeding 176 feet per minute (2 miles per hour).
- (2) The coverage area shall include the street and not go beyond the curb except in areas where there is a fair possibility that the detoured traffic will drive over the curb, such as at intersections.
- (3) The recording shall focus in particular at sidewalk ramps and other features likely to have been damaged or likely to be damaged as a result of existing traffic, temporary detoured traffic and or construction traffic. In these areas, recording may need to proceed much more slowly.

Only the side of street with the detoured traffic must be recorded. However, the Contractor is advised that portions of the detour routes may operate in opposite directions at different times. In these cases, both sides of the street shall be recorded separately.

E. Private Property Bordering the Project Limits or Work Areas. Record all areas bordering the project where work is scheduled to occur or where construction traffic could damage the private property. This is to including buildings, driveways, decks, landscaping, trees, and all other similar features.

F. 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.

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

H. Street List – This item shall include the filming all of the streets as listed in the Detailed Specification for Progress Schedule and Construction Limits.

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

AUDIOVISUAL FILMING SERVICES

The following companies are known to be capable of providing the filming 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.
- Paradigm 2000, Inc.
- Finishing Touch Photo and Video

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

PAY UNIT

Digital Audio Visual Coverage

Lump Sum

Digital Audio Visual Coverage shall include all labor, equipment, and materials required to perform the filming and to provide the finished digital video media the Engineer. The unit price includes filming the entire project limits, for each and every street, as described above. Payment will be made for **Digital Audio Visual Coverage** following the review and acceptance of the recording by the Engineer.

**DETAILED SPECIFICATION
FOR
ITEM #205 – CERTIFIED PAYROLL COMPLIANCE AND REPORTING**

1 of 2

DESCRIPTION

This specification covers all administrative requirements, payroll reporting procedures to be followed by Contractors performing work on City-sponsored public improvements projects, and all other miscellaneous and incidental costs associated with complying with the applicable sections of the City of Ann Arbor Code of Ordinances with regard to payment of prevailing wages and its Prevailing Wage Compliance policy.

This specification is not intended to include the actual labor costs associated with the payment of prevailing wages as required. Those costs should be properly incorporated in all other items of work bid.

GENERAL

The Contractor is expected to comply with all applicable sections of Federal and State prevailing wage laws, duly promulgated regulations, the City of Ann Arbor Code of Ordinances, and its Prevailing Wage Compliance Policy as defined within the contract documents. The Contractor shall provide the required certified payrolls, city-required declarations, and reports requested elsewhere in the contract documents within the timeline(s) stipulated therein.

The Contractor shall also provide corrected copies of any submitted documents that are found to contain errors, omissions, inconsistencies, or other defects that render the report invalid. The corrected copies shall be provided when requested by the Supervising Professional.

The Contractor shall also attend any required meetings as needed to fully discuss and ensure compliance with the contract requirements regarding prevailing wage compliance. The Contractor shall require all employees engaged in on-site work to participate in, provide the requested information to the extent practicable, and cooperate in the interview process. The City of Ann Arbor will provide the needed language interpreters in order to perform wage rate interviews or other field investigations as needed.

Certified Payrolls may be submitted on City-provided forms or forms used by the Contractor, as long as the Contractor's forms contain all required payroll information. If the Contractor elects to provide their own forms, the forms shall be approved by the Supervising Professional prior to the beginning of on-site work.

UNBALANCED BIDDING

The City of Ann Arbor will examine the submitted cost for this item of work prior to contract award. If the City determines, in its sole discretion, that the costs bid by the Contractor for complying with the contract requirements are not reasonable, accurately reported, or may contain discrepancies, the City reserves the right to request additional documentation that fully supports and justifies the price as bid. Should the submitted information not be determined to be reasonable or justify the costs, the City reserves the right to pursue award of the contract to the second low bidder without penalty or prejudice to any other remedies that it may have or may elect to exercise with respect to the original low-bidder.

The Contract Completion date will not be extended as a result of the City's investigation of the as-bid amount for this item of work, even if the anticipated contract award date must be adjusted. The only exception will be if the Contractor adequately demonstrates that their costs were appropriate and justifiable. If so, the City will adjust the contract completion date by the number of calendar days commensurate with the length of the investigation, if the published Notice to Proceed date of the work cannot be met. The contract unit prices for all other items of work will not be adjusted regardless of an adjustment of the contract completion date being made.

**DETAILED SPECIFICATION
FOR
ITEM #205 – CERTIFIED PAYROLL COMPLIANCE AND REPORTING**

2 of 2

MEASUREMENT AND PAYMENT

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

PAY UNIT

Certified Payroll Compliance and Reporting

Lump Sum

The unit price for this item of work shall include all supervisory, accounting, administrative, and equipment costs needed to monitor and perform all work related to maintaining compliance with the tasks specified in this Detailed Specification, the City of Ann Arbor Code of Ordinances, its Prevailing Wage Compliance policy and the applicable Federal and State laws.

Payment for this work will be made with each progress payment, on a pro-rata basis, based on the percentage of construction completed. When all of the work of this contract has been completed, the measurement of this item shall be 1.0 times the Lump Sum bid amount. This amount will not be increased for any reason, including extensions of time, extra work, and/or adjustments to existing items of work.

**DETAILED SPECIFICATION
FOR
ITEM #206 – ALLOWANCE FOR UNFORESEEN SITE CONTITIONS**

Allowance for unforeseen site conditions shall be paid under existing contract items where applicable, or under new item(s) at a negotiated price for work necessary for the completion of the project, but not expressly identified in the contract documents. Price paid shall be payment in full for all labor, material, and equipment required for remedying unforeseen physical conditions and shall be based upon an agreement negotiated and approved prior to beginning this Work.

**DETAILED SPECIFICATION
FOR
ITEM #207 – CLEAN-UP & RESTORATION, SPECIAL, MAXIMUM \$10,000**

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 work shall include the removal of all surplus materials from the site including; but not limited to; tools, dirt, cut vegetation, rubbish, construction debris, SESC material, wooden stakes, and excess excavated material. This work shall also include the sweeping paved surfaces, and cleaning culverts and ditches disturbed by the work.

CONSTRUCTION METHODS

Clean-up and Restoration must be performed upon the completion of each stage of work, to prevent erosion, and not as one single operation at the completion of the entire project. Restoration work must be performed within one week of the placement of the wearing course for each street.

The Contractor shall restore all disturbed areas to better than or equal to their original condition.

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.

The completed work for “Clean-Up & Restoration, Special, Max \$10,000” will be paid for on a lump sum (LS) basis.

Pay Item

Clean-Up & Restoration, Special, Max \$10,000

Pay Unit

Lump Sum

**DETAILED SPECIFICATION
FOR
ITEM #209 – MACHINE GRADING, MODIFIED**

DESCRIPTION

This work shall consist of constructing earth grades by excavating, cutting, filling, trimming, and grading; general restoration, and sign removals in accordance with the Detailed Specifications elsewhere herein; and maintaining the work in a finished condition until such time that it is accepted by the Engineer. This work shall be done as shown on the Plans, as detailed in the Specifications, and as directed by the Engineer, and in accordance with Section 205 of the 2012 edition of the MDOT Standard Specification for Construction, except as specified herein.

CONSTRUCTION METHOD

The Contractor shall construct earth grades as required to develop the typical and/or detailed cross-section(s) as shown on the Plans, as detailed in the Specifications, and as directed by the Engineer. This shall include, but not be limited to, the excavation of concrete and HMA pavement, soil, rocks of any size, stumps, logs, and bricks; the removal and proper disposal off-site of surplus excavated material; the scarifying, plowing, disking, moving and shaping of earth; the trimming, grading, compaction and proof-rolling of the prepared subgrade; the importing, furnishing, placement and compaction of embankment and/or fill materials; the full depth saw-cutting of pavement at the removal limits; the grading of sideslopes; general restoration in accordance with the Detailed Specifications elsewhere herein and the general items of the work as specified herein. Road subbase and base materials shall be paid for separately.

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 detailed in the Specifications 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 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 other surface features, including signs, located within the grading limits and not otherwise identified, as directed by the Engineer. Signs shall be salvaged and provided to City as directed by the Engineer.

The Contractor shall move excavated and/or imported materials longitudinally and/or transversely where necessary, and as directed by Engineer.

The Contractor shall keep the work well graded and drained at all times.

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

The Contractor is solely responsible for the maintenance and protection of the subgrade. Further, any damage to the subgrade which, in the opinion of the Engineer, is caused as a result of the Contractor's operation(s), or its 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 subgrade. The Contractor shall not be entitled to any additional compensation for the implementation of these procedures.

The Contractor shall perform all rough and/or finish grading and compaction to the grades shown on the Plans, as detailed in the Specifications, and as directed by the Engineer.

The Contractor shall proofroll all graded and compacted surfaces in the presence of the Engineer as detailed in the Specifications. The Engineer will monitor the proofrolling operation to locate deleterious and/or uncompacted materials, and will direct undercuts as necessary.

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 take any and all steps necessary to avoid interruption in the mail delivery, and solid waste, recycling, and compostable pick-up within the project limits. This shall include the temporary relocation of mailboxes, where required by the Engineer, as well as moving of all solid waste/recycling/compost containers to the nearest cross street.

The Contractor shall coordinate with the City Forester prior to the removal of any tree roots 2 inches or larger in size.

Butt joints are included in the pay item "Machine Grading, Modified".

Topsoil, seeding and mulch shall be paid separately

MEASUREMENT AND PAYMENT

Measurement for payment for the item "Machine Grading, Modified" shall be the computed in square yard quantity of excavated material (pavement, soil, rock, brick, etc.) from the top of existing grade down to the bottom of the excavation. Embankment, fill, subgrade protection/maintenance, drainage maintenance, topsoil, seeding, and restoration quantities will not be paid for separately, and are included in this item of 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:

<u>PAY ITEM</u>	<u>PAY UNIT</u>
Machine Grading, Modified	Square Yard

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 #212 - 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 21AA Limestone, 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 are (Class II Sand - C.I.P., and 21AA Limestone - 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

PAY UNIT

Subgrade Undercutting - Type II

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 #214 – TEMPORARY 12 INCH WATER MAIN LINE STOP
ITEM #215 – TEMPORARY 16 INCH WATER MAIN LINE STOP**

DESCRIPTION

The Contractor shall furnish all materials, labor and equipment to properly install and set water main line stops into the existing Ductile Iron Main(s) at the locations as shown on the plans and as directed by the Engineer. All work shall be performed in accordance with the requirements as detailed herein.

The existing mains, upstream and downstream of the proposed line stop(s) cannot be shut down or taken out of service. 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).

MATERIALS

Bedding and trench backfill materials and compaction requirements shall be in accordance with the detailed specifications, or the details shown on the plans. Granular Material Class II shall meet the requirements of section 902 of the Michigan Department of Transportation 2012 Standard Specifications for Construction. The Engineer shall approve any native materials to be placed as trench backfill.

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.

1. 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.
2. 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:
 3. Machine an internal circular shoulder to seal against the circumferential gasket carried on the plugging head.
 4. 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.
 5. 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.

6. Saddle Alignment Marking: Each saddle-half shall be matched and marked with serial numbers, to insure proper alignment in the field.
7. 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.
8. 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.
9. 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.
10. 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.
 - 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.
11. 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.

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.

1. 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.

- A. 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.
- B. 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.
- C. 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.
- D. 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.

2. Preliminary Field Inspection of Water Main:

- A. 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.
- B. 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.
- C. 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.
- D. 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 backfill water mains within the limits of the roadbed with granular material Class II. Place backfill in layers no greater than 10 inches thick and compact each layer to at least 95 % of the maximum unit weight. Backfill water main outside the limits of the roadbed with Engineer approved granular or suitable material, compacted to 90% of the maximum unit weight, in lifts of 12 inches or less, unless otherwise noted on the plans.

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 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.

The completed work, as described, will be paid for at the contract unit price for the following pay item:

PAY ITEM

PAY UNIT

Temporary 12 inch Water Main Line Stop
Temporary 16 inch Water Main Line Stop

Each
Each

**DETAILED SPECIFICATION
FOR
ITEM #220 - HMA PAVEMENT BASE – 3C
ITEM #221 - HMA PAVEMENT LEVELING - 4E-3
ITEM #222 - HMA PAVEMENT WEARING – 5E-3
ITEM #224 – HMA APPROACH – 4E-3
ITEM #225 – HMA HAND PATCHING – 4E-3**

DESCRIPTION

This work shall consist of constructing HMA pavement base, leveling, and surface courses in accordance with Division 5 and Section 806 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 AND EQUIPMENT

General

The HMA mixtures to be used for this work shall be as follows:

<u>WORK ITEM</u>	<u>MDOT HMA MIXTURE #</u>
HMA Pavement Wearing	5E- 3
HMA Pavement Leveling	4E-3
HMA Pavement Base	3C

Binders for Superpave mixes shall be PG 58-22 for base and leveling courses, and PG 70-28(p) for the wearing course, 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 Contractor shall have a 10-foot long straight-edge, backhoe, air-compressor and jackhammer available during all paving operations.

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.

Reclaimed Asphalt Pavement (RAP) in HMA Mixtures

The use of Reclaimed Asphalt Pavement (RAP) in HMA mixtures shall be in accordance with Section 501.02.A.2 of the 2012 edition of the MDOT Standard Specifications, and the City of Ann Arbor Standard Specifications.

CONSTRUCTION METHODS

All concrete work shall be completed prior to placing HMA mixtures.

The Contractor shall have a 10-foot long straight-edge, backhoe, air-compressor and jackhammer available during all paving operations.

Prior to placing the bond coat, the Contractor shall kill all vegetation (within the area to be paved) by applying an approved weed killer ("Round-Up" by Monsanto, or equal), shall thoroughly clean all joints & cracks in the existing pavement (and any gutter to be overlaid) with compressed air and/or vacuum-type street cleaning equipment to remove all dirt and debris to a depth of at least 1-inch, and shall thoroughly clean the entire surface to be paved, with a Vac-All or similar vacuum-type street cleaning equipment.

MDOT SS-1h bond coat shall be applied at a uniform rate of 0.05 gallons/square yard, on all exposed, existing HMA and concrete surfaces which will come in contact with the new HMA material. The Contractor shall take extra care to avoid covering surfaces which are not to be paved. After September 15, SS-1h bond coat shall not be diluted by more than 25%.

The Contractor shall place HMA wedges using the base, leveling, and wearing mixtures specified herein, as directed by the Engineer, prior to placing the wearing course. Such wedging shall be measured and paid for at the respective unit price of the appropriate HMA Pavement item.

Construction of butt joints, where directed by the Engineer, shall be measured and paid for as "Remove HMA Pavement."

The Contractor shall schedule the paving operation to avoid longitudinal cold joints.

HMA wearing and leveling courses shall be placed in lifts of 2-inches or less; base courses shall be placed in lifts of 3-inches or less.

All specified HMA thickness dimensions are compacted-in-place.

The Contractor shall construct the pavement courses to provide the final cross-slopes (crowns) specified by the Engineer.

The Contractor shall construct feather joints, and shall feather the leveling and wearing courses at structures, in drive approaches, and at intersection joints, as directed by the Engineer. Feather joints shall vary the thickness of the asphalt from 0.0-inches to the required full paving thickness (approximately 1½-inches) over a 5-foot to 15-foot distance, or as directed by the Engineer. The Contractor shall rake all large aggregates out of the HMA mixture in feather joints, prior to compaction.

The Contractor shall provide a minimum of two rakers during the placement of all wearing and leveling courses. Further, the Contractor shall provide, when directed by the Engineer, a second "Break-Down" roller in order to achieve the specified asphalt densities.

The Contractor shall provide a minimum of 24-hours notice to the Engineer prior to paving, and shall obtain a "Permit To Pave" from the Engineer in advance of scheduling paving.

The Contractor and Engineer shall carefully observe the paving operation for signs of faulty mixtures. Points of weakness in the surface shall be removed or corrected by the Contractor, at his/her expense, prior to paving subsequent lifts of HMA material. Such corrective action may include the removal and replacement of thin or contaminated sections of pavement, including sections that are weak or unstable. Once the Contractor or his representative is notified by the Engineer that the material being placed is out of allowable tolerances, or there is a problem with the paving operation, the Contractor shall stop the paving operation at once, and shall not be permitted to continue placing HMA material until again authorized by the Engineer.

During the placement of leveling and wearing courses, the speed of the paving machine(s) shall not exceed 50-feet per minute.

The Contractor shall furnish and operate enough materials and equipment so as to keep the paving machine(s) moving continuously at all times. Failure to do so shall be cause for the suspension of the paving operation until the Contractor can demonstrate to the satisfaction of the Engineer, that sufficient resources have been dedicated to perform the work in accordance with the specifications.

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.

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 of these HMA paving items shall be by the ton, in place. Unused portions of material loads shall be returned to the plant and re-weighed, and the corrected weight slip shall be provided to the Engineer. All weight slips must include the type of mixture (codes are not acceptable), as well as vehicle number, gross weight, tare weight and net weight.

Corrective action shall be enforced as described at Division 5 of the 2012 MDOT Standard Specifications and will be based on the City's testing reports.

All costs for furnishing and operating vacuum-type street cleaning equipment, backhoes, jackhammers, and air compressors shall be included in the bid prices for these items of work or in the item of work "General Conditions."

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>
All HMA Pavement Items	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 #242 – ADDITIONAL DEPTH STRUCTURE ADJUSTMENT AND REPAIR
ITEM #243 – TEMP. LOWERING EXISTING STRUCTURE
ITEM #245 – ADJUST STRUCTURE COVER**

DESCRIPTION

This work shall consist of repairing, reconstructing, adjusting, and lowering structures, valve wells or boxes, and monument boxes of concrete and concrete block masonry in accordance with Section 403 of the 2012 edition of the MDOT Standard Specifications for Construction, and the City Standard Specifications, except as specified herein, and except as directed by the Engineer.

MATERIALS

Materials shall meet the requirements of sections 701, 702, 902, 908, and 913 of the 2012 MDOT Standard Specifications, except that concrete shall be MDOT HE, 8.4-sack per Section 601.

Castings and covers for monument and water-valve boxes will be provided by the City. The Contractor shall transport these new castings and covers to the site from the City Utilities Department yard at 4251 Stone School Road (Wheeler Center).

CONSTRUCTION METHODS

General

Materials shall be stored by the Contractor at locations arranged by the Contractor, subject to the approval of the Engineer. The Contractor shall not store materials or equipment, including metal castings and steel plates, on any lawn area.

Hidden or unknown utility structures may be encountered during the work. It is the Contractor's responsibility to inform the respective utility owner(s) of such findings. In such instances, the City may direct the Contractor to adjust the structure(s) to grade. This work will be paid as "Adjust Structure Covers" and/or "Additional Depth Structure Adjustment/Repair" as applicable.

Covers shall be adjusted after the leveling, and/or patching course has been placed, unless otherwise authorized or directed by the Engineer.

All structure covers shall be adjusted such that their finished surface elevation is within ¼-inch of the finished surface sections, grades, slopes, and elevations, as shown on the Plans, and as directed by the Engineer. The work shall be verified by the use of a 10-foot straight-edge placed parallel with the pavement centerline. Structures not meeting the ¼-inch tolerance shall be readjusted and finish patched, as directed by the Engineer, at the Contractor's expense.

All structure covers, utility covers, valve boxes or monument boxes shall be backfilled with MDOT HE, 8.4-sack concrete from the depth of excavation necessary for adjustment, up to an elevation 2-inches below the top flange of the adjusted casting. This work shall be included in the respective items of work, and will not be paid for separately.

Adjust Structure Cover

This item includes the final adjustment of castings of any type (including drop inlets) to their respective

finished elevations, up or down a maximum of 15 inches.

The Contractor is responsible to coordinate and arrange for the adjustment of all non-City utility manholes and valves (Edison, Gas, Cable, Ameritech, etc.) during this project. The Contractor will not be given any additional compensation for delays due to other utilities work. The work of coordinating with other utilities shall be paid for under the Contract Item "General Conditions."

Additional Depth Structure Adjustment/Repair

Where the required adjustment on a structure is more than 15 inches from the existing elevation, the amount of the adjustment in excess of the first 15 inches shall be measured as additional depth by the vertical foot or fraction thereof. This shall also cover the repair of manholes and structures where less than the substantial rebuilding of the structure, as determined by the Engineer, is required.

Lower Structure Cover, and Lower Monument Box or Gate Valve Box

The Contractor shall remove and lower structure covers, monument boxes and gate valve boxes prior to the milling and pulverizing operations, and as directed by the Engineer.

Prior to the milling and pulverizing operations, the Project Supervisor shall coordinate and schedule the work of any independent survey crews which may be retained by the City to witness and reset existing and new geographic/benchmark monuments. Failure to have existing monuments witnessed and reset may result in delays to the Contractor's work. Costs for such delays will be the Contractor's sole responsibility.

After removing a structure's casting, the Contractor shall cover the structure's opening with a steel plate, in accordance with the details shown on the Plans. Plates shall be properly and carefully placed such that there is no slippage or shifting due to traffic or construction machinery movements. It is the Contractor's responsibility to prevent construction debris from infiltrating into the structure. The Contractor shall cover the plate with either 21AA gravel or HMA pavement millings, and then place a 4-inch minimum thickness HMA patch up to the adjacent surface elevation. The furnishing and placement of 21AA gravel, HMA pavement millings, and HMA patching material will not be paid for separately, but is included in these items of work.

Steel plates shall be sufficiently strong and thick enough to carry the traffic and construction equipment with no deflection, and shall be secured in place (pegged) as shown on the Plans, in order to prevent their shifting/moving.

Structures shall be thoroughly cleaned of any and all debris prior to placing steel plates. The Contractor shall coordinate and schedule an inspection by the Engineer, after the cleaning and prior to the plating, of all structures.

After the completion of HMA leveling course, the Contractor shall excavate and remove the steel plates, and shall immediately thereafter install and adjust the new/reused steel casting to finished elevations.

Steel plates are the property of the Contractor and shall be removed by the Contractor upon completion of the work.

If the Contractor anticipates a time period of five days or more between lowering and adjusting of casting(s), then the cover(s) shall be removed from the site and stored by the Contractor, until the expected adjustment time.

MEASUREMENT AND PAYMENT

Payment for transporting new and salvaged castings and covers to and from the Wheeler Center is included in the appropriate items of work.

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.

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

PAY ITEM

PAY UNIT

Additional Depth Structure Adjustment and Repair
Temp Lowering Existing Structure
Adjust Structure Cover

Vertical Foot
Each
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 #251 – FIRE HYDRANT ASSEMBLY ABANDONMENT**

DESCRIPTION

This work shall include abandoning 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 2012 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 Public Services Department Standard Specifications.

Abandoned (salvaged) valve operating nuts, fire hydrant assemblies and structure covers shall be delivered to the City of Ann Arbor Public Works 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 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 Public Works Unit located at the W.R. Wheeler Service Center at 4251 Stone School Road, Ann Arbor, MI 48108.

PAY ITEM

Fire Hydrant Assembly Abandonment

PAY UNIT

Each

**DETAILED SPECIFICATION
FOR
ITEM #260 – CLASS II SAND SUB-BASE - CIP
ITEM #261 - 21AA LIMESTONE - C.I.P.
ITEM #262 - 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 aggregate and MDOT Class II sand 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 nor 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 days 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 sub-base, item of work "Class II Sand Sub-Base -C.I.P." shall be measured and paid accordingly. Class II sand placed as part of utility trench shall not be paid separately as part of this item.

Where aggregate materials are used as fill for undercuts, item of work "21AA Limestone - C.I.P." shall be measured and paid accordingly.

Where aggregate materials are used as base, item of work "Aggregate Base Course 21AA -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:

<u>PAY ITEM</u>	<u>PAY UNIT</u>
Class II Sand Sub-Base – CIP	Cubic Yard
21AA Limestone - C.I.P.	Cubic Yard
Aggregate Base Course 21AA - C.I.P.	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 #270 – NO PARKING SIGN (not used)

ITEM #271 – SIGN, PORTABLE CHANGEABLE MESSAGE, FURNISH AND OPERATE

ITEM #272 – PLASTIC DRUM - LIGHTED – FURNISH & OPERATE

ITEM #273 – BARRICADE TYPE III - LIGHTED - FURNISH AND OPERATE

ITEM #274 – TEMPORARY SIGN - TYPE B, FURNISH & OPERATE

ITEM #275 – TEMPORARY SIGN - TYPE B, SPECIAL, FURNISH & OPERATE

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

General

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

The Contractor shall maintain traffic such that no vehicle shall be required to drive into active work areas. Patch areas which extend more than halfway across the roadway shall be removed and replaced so as to provide a minimum of half the pavement width at all times for maintaining traffic.

The Contractor shall keep all driveways open at all times, unless specifically authorized in writing by the Engineer.

The Contractor shall maintain pedestrian traffic at all times. 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.

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.

A lane-closure permit shall be obtained by the Contractor from the City Transportation Division, 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.

The Contractor shall temporarily cover conflicting traffic and/or parking signs when directed 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; Type 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.

No-Parking Signs and Posts

Prior to the commencement of any construction activity, the Contractor shall place No-Parking signs as directed by the Engineer. The Contractor shall obtain a permit for "Temporary Permission of Reserve Parking Lane for Work Related Purposes" from the City of Ann Arbor Project Management Services Unit. This permit shall be obtained a minimum of 5 days 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 2-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 shall be placed at 75-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 48 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 back charged to the Contractor.

No-Parking signs shall be covered by the Contractor, thereby allowing on-street parking, until between 48

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

General

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.

Temporary Sign - Type B – Furn & Oper.

Temporary Sign - Type B, Special, Furnish & Operate

Payment for Type B signs shall be for the quantity used on the project

Plastic Drum - Lighted – Furnish and Operate

Payment shall be for the maximum number of lighted drums in-place (operated) at any one time, as directed by the Engineer.

No-Parking Signs

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.

Portable Changeable Message Signs, Furnish & Operate

Measurement for furnishing and operating Portable Changeable Message Signs will be for the maximum quantity in-place at any one time during the work of the entire project.

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 - Furnish and Operate
Temporary Sign, Type B, Special - Furnish and Operate
Sign, Portable Changeable Message, Furnish and Operate

PAY UNIT

Each
Each
Square Foot
Square Foot
Each

**DETAILED SPECIFICATION
FOR**

**ITEM #281 PAVT MRKG, WET REFLECTIVE, TYPE R, WHITE, 4 INCH, TEMP
ITEM #282 PAVT MRKG, WET REFLECTIVE, TYPE R, YELLOW, 4 INCH, TEMP
ITEM #283 PAVT MRKG, POLYUREA, 6 INCH, WHITE
ITEM #284 PAVT MRKG, POLYUREA, 4 INCH, YELLOW
ITEM #285 Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar**

DESCRIPTION

This work consists of providing and placing permanent pavement markings in accordance with the Michigan Manual of Uniform Traffic Control Devices (MMTUTCD), lastest version published at time of advertisement. Provide pavement markings that conform to the Plans, the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, MDOT Pavement Marking Standard Plans, City of Ann Arbor Special Details, and as specified herein.

MATERIALS

Provide materials in accordance with section 811 and 920 of the MDOT 2012 Standard Specifications for Construction. Provide the Material Safety Data Sheets to the Engineer for required materials and supplies. Dispose of unused material and containers in accordance with the Federal Resource Conservation Recovery Act (RCRA) of 1976 as amended, and 1994 PA 451, Part 111 Hazardous Waste Management. Provide samples of permanent marking materials upon request.

CONSTRUCTION METHODS

The preparation and placement of permanent markings shall conform to section 811 of the MDOT 2012 Standard Specifications, the Plans, and as specified herein.

MEASUREMENT AND PAYMENT

Completed work, as described, will be measured and paid for at Contract Unit Prices for the following Contract (Pay) Items:

<u>PAY ITEMS</u>	<u>PAY UNIT</u>
Pavt Mrkg, Wet Reflective, Type R, White, 4 inch, Temp	Foot
Pavt Mrkg, Wet Reflective, Type R, Yellow, 4 inch, Temp	Foot
Pavt Mrkg, Polyurea, 6 inch, White	Foot
Pavt Mrkg, Polyurea, 4 inch, Yellow	Foot
Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	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 MDOT 2012 Standard Specifications for Construction and as modified by this Detailed Specification.

**DETAILED SPECIFICATION
FOR
ITEM # 290 - MULCH BLANKET, MODIFIED**

DESCRIPTION

This work shall consist of furnishing material, installing per manufacturer's recommendations, and maintaining blankets until vegetation is fully established. All work shall be in accordance with Section 816 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, except as herein provided:

MATERIALS

The erosion control blanket shall be composed of coconut fiber and shall have the following properties:

Matrix - 100% coconut fiber. (0.50 lbs/syd)

Netting - Top-Leno woven 100% biodegradable organic jute fiber (9.30 lbs/1000sft) approximate weight. Bottom - 100% biodegradable organic jute fiber (7.7lbs/1000sft) approximate weight.

Thread - Biodegradable.

Physical Specifications

Width +/- 5% 6.67ft.

Length +/- 5% 108 ft.

Weight +/- 52.22 lbs.

Area 80 syd.

Stitch Spacing for all rolls = 1.50 inches.

Erosion control blanket shall be manufactured with a colored line or thread along outer edges to ensure proper material overlapping. Manufacturer's recommended fastening pattern must be clearly marked on blanket to insure proper anchorage to soil.

Biodegradable fasteners supplied by manufacturer based on type of installation required. Stakes shall be of sound wood. Stake approximately one (1) stake per one (1) square foot.

Installation instructions must be supplied with each delivery of erosion control blankets.

SUBMITTALS

The CONTRACTOR shall submit to the ENGINEER a sample of the Erosion Control Blanket

MEASUREMENT AND PAYMENT

The completed work as described will be measured and paid for at the contract unit prices using the following contract items (pay items).

PAY ITEM

Mulch Blanket, Modified

PAY UNIT

Square Yard

Mulch Blanket, Modified will be measured in place respectively by the unit square yard and paid for respectively at the contract unit price per square yard, which price shall be payment in full for all labor, materials and equipment needed to accomplish these items of work. Overlap is not paid for but included in installation. Also included in the unit price is the work of maintaining the blanket as required by the Engineer until area fully established.

**DETAILED SPECIFICATION
FOR
MAINTENANCE OF TRAFFIC**

1 of 2

DESCRIPTION

Traffic shall be maintained in accordance with the City of Ann Arbor Public Services Department Standard Specifications and as specified in Sections 104.11, 812, and 922 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, the 2011 Michigan Manual of Uniform Traffic Control Devices (MMUTCD), and as described herein.

The Contractor shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights as required on the project for the safety and protection of local traffic. This includes, but is not limited to, temporary advance, regulatory, and warning signs; barricades and channelizing devices at intersections and on streets where traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets, and traffic control devices for moving construction operations.

MATERIALS

The materials and equipment shall meet the requirements specified in the corresponding sections of the MDOT 2012 Standard Specifications for Construction and the 2011 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, school buses, and ingress/egress to public and private properties.

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

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.

At times, when it becomes necessary to temporarily obstruct local traffic during the performance of the work, the Contractor shall provide traffic regulator control in conformance with Chapter 6E of the MMUTCD, Sections 6E.01 thru 6E.08. A minimum of two traffic regulators are required. The cost of traffic regulator control shall be included in the contract pay item "Minor Traffic Control, Maximum \$_____".

A lane-closure permit shall be obtained by the Contractor from the Project Management Services Unit, at least 48 hours in advance of any proposed lane or street closing. No lane closures shall be permitted July 4, and during the Labor Day and Memorial Day weekends.

**DETAILED SPECIFICATION
FOR
MAINTENANCE OF TRAFFIC**

2 of 2

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.

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

The Contractor shall use quantities of dust palliative, maintenance aggregate, and cold patching/HMA mixtures 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, cold patch and/or hot mix asphalt 36A mixture, as required and directed by the Engineer for maintenance of traffic and local access, shall be included in contract pay item "General Conditions, Maximum, \$____", and it will not be paid for separately.

The work of maintaining and relocating existing warning, regulatory and/or guide signs; and of removing, salvaging and reinstalling existing signs and supports is included in the bid price for the contract pay item "Minor Traffic Control, Maximum \$____".

Mailboxes and newspaper boxes that are in the way of the construction shall be removed and reset immediately in a temporary location approved by the Engineer. Mail and paper delivery shall not be interrupted during the construction. Upon completion of the construction, all mailboxes and newspaper boxes, including their supports, shall be repositioned in their permanent locations as approved by the Engineer. This work shall be included the contract unit price for the contract pay item "General Conditions, Maximum, \$____", 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. No traffic shall be allowed on newly placed asphalt surfaces until rolling has been satisfactorily completed and the surface has cooled sufficiently to prevent damage from traffic. This is to be accomplished by flag persons and by relocating traffic control devices to prevent traffic from entering the work area until such time that it can be safely maintained without damaging the new construction. The Contractor shall provide traffic regulators in sufficient number to maintain traffic as described herein, and to keep traffic off sections being surfaced, and provide for safe travel at all times as directed by the Engineer.

The Contractor shall furnish, erect, maintain, and upon completion of the work, remove any and all traffic control devices utilized on the project.

Each pressure distributor, paver and roller shall be equipped with at least one approved flasher light which shall be mounted on the equipment so as to give a warning signal ahead and behind.

**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, and others not listed specifically, may have overhead and/or underground facilities located within the Right-of-Way/Public Easements:

The City of Ann Arbor
University of Michigan (UM)
Michigan Department of Transportation (MDOT)
AT&T
Comcast
DTE Energy - Detroit Edison Company (Edison)
DTE Energy - Michigan Consolidated Gas Company (Michcon)
Fiber Link Inc.
Light Core (Century Tel)
MCI Communications
Windstream Communications

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, Modified, Maximum, \$_____".

**DETAILED SPECIFICATION
FOR
GENERAL CONSTRUCTION NOTES**

The following notes pertain to all Plan sheets issued as part of this Contract, and these notes shall be considered part of each Plan sheet or Detailed Information Sheet.

1. All work shall conform to latest revision of the City Standard Specifications.
2. The Contractor shall maintain access to all drives throughout the course of construction. Drives shall never be closed during non-working hours, unless otherwise authorized in writing by the Engineer.
3. The Contractor shall completely restore all existing site features to better than, or equal to, their existing condition.
4. The Contractor shall be aware that there are above-ground and below-ground utilities existing in and on these streets which include, but are not limited to: gas mains and service leads; water mains and service leads; storm sewer mains and service leads; sanitary sewer mains and service leads; telephone poles, wires, cables and conduits; electrical poles, wires, cables and conduits; cable television wires, cables and conduits, and other various utilities. The Contractor shall conduct all of its work so as not to damage or alter in any way, any existing utility, except where specified on the Plans or where directed by the Engineer. The City has videotaped and cleaned all sanitary and storm sewers, including storm sewer inlet leads, and has found all of these facilities to be in good condition, with the exception of those shown on the Plans for repairs or replacement.
5. The Contractor is solely responsible for any delays, damages, costs and/or charges incurred due to and/or by reason of any utility, structure, feature and/or site condition, whether shown on the Plans or not, and the Contractor shall repair and/or replace, at its sole expense, to as good or better condition, any and all utilities, structures, features and/or site conditions which are impacted by reason of the work, or injured by its operations, or injured during the operations of its subcontractors or suppliers.
6. No extra payments or adjustments to unit prices will be made for damages, delays, costs and/or charges due to existing utilities, structures, features and/or site conditions not shown or being incorrectly shown or represented on the Plans.

**DETAILED SPECIFICATION
FOR
DISPOSING OF EXCAVATED MATERIAL**

The Contractor shall dispose of, at the Contractor's expense, all excavated material. Costs for this work will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions, Modified, Maximum, \$_____".

**DETAILED SPECIFICATION
FOR
PROTECTION OF UTILITIES**

Damages to utilities by the Contractor's operations shall be repaired by the utility owner at the Contractor's expense.

Delays to the work due to utility repairs are the sole responsibility of the Contractor.

The Contractor shall keep construction debris out of utilities at all times. The Contractor shall be back charged an amount of \$50.00 per day for each manhole/inlet/utility pipe that contains construction debris caused as a result of the Contractor's (including subcontractors and suppliers) work.

The Contractor is solely responsible for any damages to the utilities or abutting properties due to construction debris.

Certain sanitary and storm sewers within the influence of construction may have been cleaned and videotaped prior to construction. The City may also choose to videotape utility line(s) during or after the work of this Contract to inspect them for damages and/or construction debris. If such inspection shows damage and/or debris, then all costs of such inspection, cleaning, repairs, etc, shall be the Contractor's sole responsibility. If such inspection is negative, the City will be responsible for the costs of such inspection.

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

**DETAILED SPECIFICATION
FOR
SOIL EROSION AND SEDIMENTATION CONTROL MEASURES**

The Contractor shall furnish, place, maintain and remove soil erosion and sedimentation control measures, 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 required to maintain compliance.

Costs for this work, other than specifically identified in the bid items, will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions, Maximum, \$_____".

**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, Maximum, \$_____".

**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
- Corrugated Metal Pipe
- High Density Polyethylene Pipe
- Timber for retaining walls
- Modular Concrete Block for retaining walls
- 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, Maximum, \$_____".

**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 work, or add work, 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 are 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.

APPENDIX

January 7, 2010

Mr. Nicholas S. Hutchinson, P.E., Project Engineer
City of Ann Arbor
Project Management Services Unit
100 North Fifth Avenue
Ann Arbor, Michigan 48104-8647

RE: Geotechnical Exploration and Engineering Report
Proposed 2010 Construction Projects
Local Streets Phase
City of Ann Arbor, Washtenaw County, Michigan
PSI Project No. **0381193**

Dear Mr. Hutchinson:

As requested, Professional Service Industries, Inc. (PSI) has completed a geotechnical exploration and engineering report for the Local Streets Phase of the proposed 2010 Construction Projects to be constructed in the city of Ann Arbor, Washtenaw County, Michigan. PSI's work was authorized by Mr. Nicholas S. Hutchinson, P.E., Project Engineer for the City of Ann Arbor through a "Professional Services Agreement" effective October 9, 2009.

Project Description

Project information was provided by Mr. Nicholas S. Hutchinson, P.E., Project Engineer for the City of Ann Arbor in a Request for Proposal, RFP #742, dated July 31, 2009. PSI understands that the proposed project consists of the rehabilitation/reconstruction of Birch Hollow Drive from Tacoma to Stone School; Birch Hollow Drive from Stone School to Dead End; Bruce Street from Alice to Arborview; Georgetown Blvd (NB) from Plymouth to Bluett; Hill Street from Main to Railroad; Longman lane from Jackson to Fairview; Palomar Drive from Las Vegas to Catalina; Ruthven Court from Hill to Dead End; Signature Boulevard from Eisenhower Parkway to Dead End; Vinewood Boulevard from Washtenaw to Avon; Washington Street from State to Fletcher; Willard Street from E. University to Forest; Miller Avenue from Main to Chapin and from Maple to Newport; N. Seventh Street from Miller to Huron; Geddes Road from Huron Parkway to Earhart; and an additional 4 borings were requested along Broadway Street from Pontiac to the Plymouth/Broadway intersection. PSI's initial scope of work included borings along Signature Boulevard that were later canceled by Mr. Nick Hutchinson, P.E., Project Engineer for the City of Ann Arbor.

In addition, PSI performed soil borings within the existing Arbor Oaks Subdivision for the purpose of identifying subsurface soil conditions for a water main replacement and identifying possible areas for potential rain gardens to direct surface water runoff.

The geotechnical recommendations presented in this report are based on the available project information, and the results of our geotechnical exploration described in this report. If any of the noted information is considered incorrect or is changed, please inform PSI in writing so that we may amend the recommendations presented in this report if appropriate and if desired by the client. PSI will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Field and Laboratory Testing Services

PSI's field exploration program consisted of drilling a total of one hundred forty one (141) soil borings throughout the city of Ann Arbor streets and subdivisions. A total of 1175 feet of drilling was completed. PSI's drilling operations were performed from October 13, 2009 through December 3, 2009.

The pavement was cored with a portable electric motor coring machine equipped with a 4-inch diameter diamond studded core barrel. The recovered pavement core samples were returned to the laboratory where the core thickness was measured. Following coring/drilling through the existing pavement, the underlying aggregate base, where present, was excavated by hand and returned to the laboratory for gradation testing at a later date as directed by the City of Ann Arbor. The core measurements, field measurements of pavement thickness and the approximate base thicknesses are included on the attached boring logs and summary table in the following section of this report.

Following completion of the pavement core/drilling through the existing pavement and sampling the base, a soil boring was extended to a depth of approximately 5 to 20 feet below the existing pavement surface. A truck-mounted rotary drill rig was used to perform the borings utilizing 3¼-inch diameter continuous flight hollow-stem augers to advance the boreholes. Standard Penetration Tests (SPT) were conducted and soil samples were obtained using split spoon sampling procedures. Drilling and sampling techniques were performed in general accordance with ASTM Standard D1586. After completion of the drilling operations, the borings were backfilled with auger cuttings and the pavement surface was patched with a bituminous cold patch material.

The City of Ann Arbor selected the number, depth and locations of the borings and marked their locations in the field in advance of the fieldwork. The approximate locations of the borings performed are indicated on the attached soil boring location diagrams/aerial photographs provided to PSI by the City of Ann Arbor. In addition, the boring locations referencing the distance to the existing curb as well as the distance to a nearby roadway or driveway feature are indicated on the attached boring logs.

The elevation of the ground surface at the boring locations performed was not provided or determined. Prior to final design and construction, PSI recommends that a professional land surveyor determine these elevations. All references to depths on the boring logs and in this report are from the existing ground surface unless otherwise noted.

The recovered soil samples were returned to our laboratory for supplemental visual engineering classification and limited laboratory testing. Laboratory testing performed included moisture content, loss-on-ignition (organic content) and estimating the unconfined compressive strength of the cohesive soils using a calibrated hand penetrometer. The laboratory test results are indicated on the attached boring logs opposite of the sample tested. Upon completion of the laboratory testing, the unused portions of the collected soil samples were placed in storage at PSI's Plymouth Township facility. Unless otherwise requested in writing, the samples will be discarded after 60 days from the submission of this report.

Surface/ Subsurface Conditions

Existing Pavement Section

The following table summarizes the results of the borings taken through the existing pavements. The approximate thicknesses in the table represent the pavement section only at the individual boring locations. Other locations within the existing pavements may have pavement sections significantly different from that indicated in the table.

Boring I.D.	Approximate Asphalt Thickness (inches)	Approximate Concrete/Brick Thickness (inches)	Approximate Base Thickness (inches)	Approximate Total Pavement Section Thickness (inches)
Birch Hollow Drive (Tacoma to Stone School)				
BH-1	5.8	--	3.0	8.8
BH-2	3.8	--	4.0	7.8
BH-3	6.3	--	4.0	10.3
BH-4	5.8	--	14.0	19.8
BH-5	6.1	--	12.0	18.1
Birch Hollow Drive (Stone School to East End)				
BH-6	3.5	--	18.0	21.5
BH-7	3.3	--	8.0	11.3
BH-8	3.5	--	--	3.5
BH-9	5.0	--	--	5.0

BH-10	4.8	--	7.0	11.8
BH-11	3.0	--	7.0	10.0
BH-12	4.0	--	11.0	15.0
Bruce Street (Alice to Arborview)				
BR-1	3.5	--	6.5	10.0
BR-2	3.1	--	7.0	10.1
BR-3	2.8	--	6.0	8.8
BR-4	3.5	--	--	3.5
Georgetown Blvd. (NB) (Plymouth to Blueft)				
GT-1	3.8	--	11.5	15.3
GT-2	7.3	--	15.0	22.3
GT-3	6.0	--	8.0	14.0
GT-4	6.8	--	6.5	13.3
GT-5	4.3	--	17.0	21.3
GT-6	4.0	--	10.5	14.5
GT-7	4.5	--	12.0	16.5
GT-8	4.3	--	13.0	17.3
Hill Street (Main to Railroad)				
H-1	8.3	--	3.7	12.0
H-2	11.5	--	7.0	18.5
H-3	5.8	--	12.0	17.8
Longman Lane (Jackson to Fairview)				
LM-1	7.4	--	6.0	13.4
LM-2	6.0	--	6.0	12.0
LM-3	5.0	--	9.0	14.0
Palomar Drive (Las Vegas to Catalina)				
P-1	7.3	--	6.5	13.8
P-2	5.0	--	14.0	19.0
Ruthven Court (Hill to Dead End)				
R-1	4.0	--	9.0	13.0
R-2	4.8	--	7.3	12.1
Vinewood Blvd. (Washtenaw to Avon)				
VW-1	7.0	--	7.0**	14.0
VW-2	7.5	--	7.0	14.5
VW-3	4.3	--	14.0	18.3
VW-4	3.8	--	7.0	10.8
VW-5	6.6	--	4.0	10.6
VW-6	6.3	--	5.0	11.3
VW-7	5.5	--	7.0	12.5
VW-8	3.5	--	12.0	15.5
VW-9	2.5	--	16.0	18.5
VW-10	3.5	--	14.5	18.0
VW-11	4.8	--	11.0	15.8
VW-12	3.4	--	9.0	12.4

Washington (State to Fletcher)				
WA-1	4.9	4.0	9.0	17.9
WA-2	--	8.9	3.3	12.2
WA-3	4.5	6.5	--	11.0
WA-4	4.5	3.0	--	7.5
Willard (E. University to Forest)				
WI-1	4.8	--	4.5	9.3
WI-2	3.0	--	4.0	7.0
WI-3	5.1	--	--	5.1
Miller Avenue (Main to Chapin)				
M-1	4.0	4.0 (Brick)	4.0	12.0
M-2	4.0	4.0 (Brick)	10.0	14.0
M-3	4.9	4.0 (Brick)	3.0	11.9
M-4	8.0	--	10.0	18.0
M-5	4.0	4.0 (Brick)	8.0	16.0
M-6	4.0	4.0 (Brick)	3.0	11.0
M-7	4.3	4.0 (Brick)	9.7	18.0
M-8	8.0	--	7.5	15.5
M-9	9.0	--	6.0	15.0
M-10	3.5	4.0 (Brick)	6.0	13.5
M-11	8.5	--	9.0	17.5
Miller Avenue (Maple to Newport)				
MI-1	--	--	--	--
MI-2	6.0	--	7.0	13.0
MI-3	7.0	--	4.0	11.0
MI-4	4.5	--	7.0	11.5
MI-5	9.3	--	4.8	14.1
MI-6	5.1	--	5.0	10.1
N. Seventh Street (Miller to Huron)				
SEV-1	4.4	7.5	1.3	13.2
SEV-2	3.3	8.6	0.5	12.4
SEV-3	4.0	7.0	7.0	18.0
SEV-4	5.9	7.0	1.3	14.2
SEV-5	4.9	--	13.0	17.9
SEV-6	7.9	6.0	16.0	29.9
Geddes Road (Huron Parkway to Earhart)				
G-1	5.5	--	0.0	5.5
G-2	4.0	--	7.0	11.0
G-3	3.4	--	20.6	24.0
G-4	4.0	--	6.0	10.0
G-5	5.0	--	--	5.0
G-6	4.0	--	14.0	18.0
G-7	3.8	--	8.0	11.8
G-8	6.4	--	12.0	18.4

G-9	5.9	--	18.0	23.9
G-10	4.3	--	11.0	15.3
G-11	5.3	--	18.7	24.0
G-12	4.9	--	13.0	17.9
G-13	7.8	--	10.0	17.8
G-14	5.9	--	11.0	16.9
G-15	4.9	--	13.0	17.9
Broadway (Pontiac to Plymouth)				
B-1	4.6	8.8	6.0	19.4
B-2	2.9	9.6	5.0	17.5
B-3	6.1	--	4.0	10.1
B-4	6.3	--	8.0	14.3
Arbor Oaks Subdivision				
AO-1	2.5	--	6.0	8.5
AO-2	4.3	--	8.5	12.8
AO-3	5.0	--	13.0	18.0
AO-4	3.3	--	6.0	9.3
AO-5	3.0	--	9.8	12.8
AO-6	3.5	--	9.0	12.5
AO-7	3.5	--	7.0	10.5
AO-8	2.0	--	9.7	11.7
AO-9	4.0	--	7.0	11.0
AO-10	1.3	--	7.0	8.3
AO-11	3.0	--	5.0	8.0
AO-12	4.5	--	4.0	8.5
AO-13	3.0	--	4.0	7.0
AO-14	2.1	--	7.0	9.1
AO-15	2.5	--	8.5	11.0
AO-16	2.6	--	7.0	9.6
AO-17	2.0	--	7.3	9.3
AO-18	2.5	--	7.0	9.5
AO-19	3.8	--	10.0	13.8
AO-20	4.0	--	6.5	10.5
AO-21	4.0	--	8.5	12.5
AO-22	4.9	--	5.0	9.9
AO-23	3.5	--	14.3	17.8
AO-24	3.4	--	3.8	7.2
AO-25	3.3	--	5.0	8.3
AO-26	5.0	--	7.0	12.0
AO-27	4.8	--	6.0	10.8
AO-28	5.5	--	9.0	14.5
AO-29	7.0	--	8.0	15.0
AO-30	5.0	--	5.0	10.0
AO-31	3.9	--	6.0	9.9

AO-32	4.3	--	8.0	12.3
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**Asphalt Millings

Based on a review of the table above, the pavement section encountered at the boring locations performed was variable. The pavement section encountered at the boring locations performed within the existing local street pavements typically consisted of approximately 3.0 to 8.0 inches of asphalt pavement. A thicker asphalt section of approximately 11.5 inches was encountered at the location of Hill Street Boring H-2. A thinner asphalt section of approximately 1.3 inches was encountered at the location of Arbor Oaks Subdivision Boring AO-10. Approximately 3 to 9 inches of concrete pavement was encountered below the surficial asphalt pavement at the location of Washington Street. Approximately 6 to 9 inches of concrete pavement was encountered below the surficial asphalt pavement at the location of N. Seventh Street except at the location of Boring SEV-5 where no concrete was encountered. Approximately 8.8 to 9.6 inches of concrete was also encountered at the locations of Borings B-1 and B-2 located along Broadway Street. A paving brick section of approximately 4 inches in thickness was encountered along Miller Avenue at the locations of M-1 through M-3, M-5 through M-7 and M-10.

An aggregate base was not encountered below the pavement at the locations of Birch Hollow Drive Borings BH-8 and BH-9; Bruce Street Boring BR-4; Washington Street Borings WA-3 and WA-4; Willard Road Boring WI-3; Miller Avenue Boring MI-1; Geddes Road Borings G-1 and G-5. An aggregate base course of variable thickness and composition was encountered below the surficial pavement at the remaining boring locations performed. The base course consisted predominately of brown and dark brown fine to coarse sand with variable percentages of natural rounded gravel and silty fines. Possible recycled asphalt base consisting of discolored dark brown, dark gray or black sand and gravel with pieces of asphalt was encountered at the location of Vinewood Boring VW-1. The delineation of the aggregate base and the underlying subgrade soils was difficult at many locations where native coarse sand and gravel subgrade soils or engineered fill consisting of similar materials were present below the existing pavement section.

Subgrade Subsurface Conditions

The subsurface conditions should be reviewed for the respective streets within the attached boring logs due to the size of project and overlapping and varying soil conditions. These records include soil descriptions, stratification, penetration resistance, location of the samples, and laboratory test data. A generalized reference to the predominate soils encountered at the project site can also be reviewed below in the referenced streets and estimated Subgrade Resilient Modulus table.

The stratification shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratification represents the approximate boundary between subsurface materials; however, the actual transition may be gradual. The boring logs were prepared on the basis of the laboratory testing and supplemental visual engineering classification, as well as the field logs of the soil conditions encountered.

The geotechnical scope of services did not include an environmental assessment for determining the presence or absence of wetlands, hazardous or toxic materials in the soil, bedrock, surface water, groundwater or air on, below or around this site. Any statement in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes. Prior to the development of any site, an environmental assessment is advisable.

Groundwater Conditions

The driller looked for indications of groundwater seepage both during and after the drilling operations. Groundwater or perched water was encountered during drilling at the following locations; Arbor Oaks Subdivision at Boring locations AO-6, AO-8, AO-17, AO-19, AO-23, AO-24, AOE-5, AOE-9, AOE-12, AOE-14 at depths ranging from approximately 4 to 19.5 feet; Geddes Road at Boring location G-8 at an approximate depth of 3 feet; Miller Road at Boring location M-2, M-4 and Miller Road Borings MI-3, MI-4 and MI-5 at approximate depths of 4 to 11.5 feet; and N. Seventh Street at the locations of Borings SEV-1 through SEV-6 at approximate depths of 4 to 12.5 feet. The remaining borings were reported as dry during and after drilling was completed.

It is possible for the groundwater table to vary within the depths explored during other times of the year depending upon climatic conditions (seasonal fluctuation). Groundwater monitoring wells are required to accurately define the position and fluctuation of the groundwater table, especially if a boring is drilled in cohesive soil, where several days or weeks may be required for the groundwater to reach a static level. The installation of such monitoring wells was not included in the scope of services for this project.

General Pavement Design Recommendations

PSI anticipates that the proposed pavement rehabilitation projects may consist of placement of an overlay directly over the existing pavement, reconstruction of the pavement utilizing the existing aggregate base materials or complete pavement reconstruction including placement of new aggregate base and bituminous or concrete pavement materials. An advantage of total reconstruction is that areas of subgrade instability may be addressed and corrected prior to placement of the new pavement section. PSI recommends that all earthwork operations be performed under current

MDOT and City of Ann Arbor specifications and be properly monitored in the field.

At the start of the earthwork operations, existing or previously abandoned underground utilities and other buried structures in roadway reconstruction or roadway-widening areas should be re-routed and/or removed from within the proposed construction areas. Resulting excavations extending below the proposed grades should be backfilled with engineered fill or specified materials, such as lean concrete or flowable fill, to the final design grade. Existing utilities that are not re-routed or abandoned should be adequately marked and protected to minimize the potential for damage during construction.

The soil borings indicate that the subgrade soils below the existing roadway alignments may consist of predominately of brown to reddish brown sandy clay or clayey sand with variable percentages of gravel. These soils should provide adequate support for the proposed pavement surfaces, provided they are stable at the time of construction. Significant undercut or subgrade improvement below the existing roadway alignment is generally not anticipated for these projects, based on the borings performed.

However, the existing pavement section was underlain by a layer of possible fill material consisting predominately of brown, dark brown, olive or grayish brown silty clay, sandy clay and clayey sand and fine to coarse sand with occasional seams of sandy clay and organics at the locations of Willard Street Borings WI-2 and WI-3; Washington Street Boring WA-4; Vinewood Boulevard Boring VW-6; N. Seventh Street Boring SEV-6; Ruthven Court Borings R-1 and R-2; Miller Avenue, Maple to Newport Borings MI-1 and MI-4; Miller Avenue, Main to Chapin Borings M-4, M-5 and M-6; Longman Lane Boring LM-3; Bruce Street Boring BR-4; Birch Hollow Drive Boring BH-3; Broadway Street Borings B-1 through B-3; Arbor Oaks Subdivision Borings AO-7, AO-10, AO-14, AO-20, AO-21, AO-22, AO-29, AO-30 and at the additionally requested soil borings within Arbor Oaks subdivision of AOE-1 and AOE-10. The apparent fill or discolored native soils extended to depths ranging from approximately 3 feet below the existing roadway surface through the explored depth of approximately 5 feet below the existing ground surface. PSI extended borings through obvious fill when encountered that indicated up to 8 to 10 feet of fill may be encountered. Loss-on-ignition (organic content) values of the tested soil samples from the apparent fill and buried discolored native soil typically ranged from approximately 1.2 to 5.0 percent. Higher values of 11.6% were encountered along Vinewood Boulevard. The encountered fill along N. Seventh Street was underlain by approximately 1 foot of peat from approximately 11.5 feet to 12.5 feet and marl from 12.5 to 19 feet below the pavement surface with organic contents of up to 22.6%.

It would not be unusual for the thickness, composition and organic contents of the discolored native soils and roadway subgrade fill materials to vary within the site area from that encountered at the individual boring locations. In addition, it is possible that organic native soils or subgrade fills containing organics and other deleterious materials

may be present at other locations within the existing roadway alignments that were not disclosed by the borings.

The most critical portion of the subgrade is the upper 3-foot section. This zone provides the primary strength needed for support of the pavement section. Therefore, where organic soils or subgrade fills containing organics and other deleterious materials are exposed during site grading operations at and below the designed subgrade elevation within this critical 3-foot zone, PSI generally recommends that these soils be undercut in their entirety throughout the pavement areas and backfilled with clean-engineered fill. The exact depth and need for undercutting should be determined in the field at the time of construction. Moderately organic soils present at depth below the pavement section and critical 3-foot zone, exclusive of peat, marl or other highly organic and compressive soils, may be left in place at the discretion of the MDOT or City of Ann Arbor engineer, provided a sufficient thickness of high quality, stable engineered fill is placed over the organic or otherwise unsuitable subgrade soils.

Following removal of the existing pavements the exposed subgrade should be prepared in accordance with Section 205.03.A of the MDOT "2003 Standard Specifications for Construction" or as outlined in the City of Ann Arbor Standard Specifications. Loose, soft, or unstable areas revealed during proof-rolling should be stabilized by aeration, drying, and additional compaction, or be removed and replaced with engineered fill. Engineered fill should be spread in level lifts not exceeding the specified thickness and compacted to the specified minimum density as outlined in Section 205 of the MDOT 2003 Standard Specifications or as outlined in the City of Ann Arbor Standard Specifications. Each lift of engineered fill should be tested for conformance to the project density requirements prior to placement of subsequent lifts.

To minimize settlement, it is imperative that the engineered fill placed in subgrade undercut areas and general roadway embankment/subgrade fills be placed and compacted in accordance with a strict quality control program to minimize internal consolidation and to moderate external consolidation.

Frozen material should not be used as engineered fill, nor should fill be placed on frozen subgrade. Engineered fill should be placed at or near the optimum moisture content. Adequate compaction will not be achieved if the fill is in a saturated condition. Wet soils may require drying or mixing with dry soil to facilitate compaction. If water must be added to dry soil, it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying prior to compaction.

PSI recommends that the pavement sections for these projects be determined using the DARWin Pavement Design and Analysis System or similar software that embodies the methodology of the 1993 AASHTO Guide for the Design of Pavement Structures. PSI

recommends that the pavement designs be prepared based on the anticipated number of 18-kip ESAL's using the pavement over the design period based on actual traffic data and vehicle breakdowns. The number of heavy trucks using a pavement significantly affects the 18-kip ESAL value over the design life of the pavement.

California Bearing Ratio (CBR) or Falling Weight Deflectometer (FWD) testing were not included in our scope of work for this project. However, based on the soil borings performed and past experience in the project area, PSI recommends the following effective Subgrade Resilient Modulus, M_R for use in determining the pavement designs for these projects:

Roadway Name	Predominate Subgrade Soil Material	Estimated CBR Value	Recommended Subgrade Modulus, M_R (psi)
Birch Hollow Drive	Sandy Clay/ Silty Sand	3 - 5	4,000
Bruce Street	Sandy Clay/ Silty Sand	3 - 5	4,000
Broadway Street	Silty Sand Fill/ Sand	2 - 3	3,000
Georgetown Blvd	Sandy Clay/ Clayey Sand	3 - 5	4,000
Hill Street	Silty Sand	5 - 8	5,000
Longman Avenue	Sandy Clay	3 - 5	4,000
Palomar Drive	Sandy Clay	3 - 5	4,000
Ruthven Court	Silty Clay Fill	1-2	1,500
Vinewood Blvd	Sandy Clay/ Clayey Sand	3 - 5	4,000
Washington Street	Sandy Clay/ Silty Sand	3 - 5	4,000
Willard Street	Silty Sand	5 - 8	5,000
Miller Avenue (Maple to Newport)	Sandy Clay/ Silty Clayey Sand	3 - 5	4,000
Miller Avenue (Main to Chaplin)	Sandy Clay/ Silty Sand	3 - 5	4,000
N. Seventh Street	Silty Sand	5 - 8	5,000
Geddes Road	Sandy Clay/ Silty & Clayey Sand	3 - 8	4,000
Arbor Oaks Subdivision	Sandy Clay/ Sandy and Clayey Silt	2 - 4	3,500

It should be recognized that all pavements require regular maintenance and occasional repairs to keep the pavements in a serviceable condition. Of particular value, is a timely sealing of joints and cracks, which if left un-repaired, can serve to permit water to enter the pavement section and cause rapid deterioration of the pavement during freeze-thaw cycles. The need for such maintenance and repair is not necessarily indicative of premature pavement failure. However, if appropriate maintenance and repairs are not performed on a timely basis, the serviceable life of the pavement can be reduced significantly.

The pavement surface should be adequately sloped to promote good surface drainage and to reduce water infiltration into the base course. A minimum pavement slope of 2% is recommended. Water should not be allowed to pond behind curbs and saturate the pavement base stone. In down grade areas, base stone should extend through the slope to allow any water entering the base stone a path to exit. Consideration should also be given to the placement of additional edge drains at the base course/subgrade interface.

Report Limitations

The recommendations submitted in this report are based on the available subsurface information obtained by PSI and the project information furnished by the City of Ann Arbor. If there are any revisions to the plans for this project, or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the earthwork, subgrade preparation and foundation design parameter recommendations are required. If PSI is not notified of such changes, PSI will not be responsible for the impact of those changes on the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional engineering practices in the local area. No other warranties are implied or expressed.

This report has been prepared for the exclusive use of the City of Ann Arbor and their authorized representatives. This report is intended for the specific application to the Local Streets Phase of the proposed 2009 Construction Projects to be constructed in the city of Ann Arbor, Washtenaw County, Michigan. If you have any questions concerning this report or we may be of further service, please feel free to contact the undersigned at (734) 453-7900 or fax us at (734) 453-0724.

Respectfully,
PROFESSIONAL SERVICE INDUSTRIES, INC.,



Kevin F. Dubnicki, P.E.
Project Manager



Mahmoud El-Gamal, Ph.D., P.E.
District Manager

3 pc: Enc.

Attachments:

Birch Hollow Drive

Boring Location Diagram (Sheet No. 1 and No. 2)
Soil Boring Logs (Borings BH-1 through BH-12)
General Notes

Bruce Street

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings BR-1 through BR-4)
General Notes

Broadway Street

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Boring B-1 through B-4)
General Notes

Georgetown Boulevard

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings GT-1 through GT-8)
General Notes

Hill Street

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings H-1 through H-3)
General Notes

Longman Lane

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings LM-1 through LM-3)
General Notes

Attachments, continued

Palomar Drive

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings P-1 and P-2)
General Notes

Ruthven Court

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings R-1 and R-2)
General Notes

Vinewood Boulevard

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings VW-1 through VW-12)
General Notes

Washington Street

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings WA-1 through WA-4)
General Notes

Willard Street

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings WI-1 through WI-3)
General Notes

Miller Avenue (Main to Chapin)

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings M-1 through M-11)
General Notes

Miller Avenue (Maple to Newport)

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings MI-1 through MI-6)
General Notes

N. Seventh Street

Boring Location Diagram (Sheet No. 1)
Soil Boring Logs (Borings SEV-1 through SEV-6)
General Notes

Attachments, continued

Geddes Road

Boring Location Diagram (Sheet No. 1)

Soil Boring Logs (Borings G-1 through G-15)

General Notes

Arbor Oaks Subdivision

Boring Location Diagram (Sheet No. 1 and No. 2)

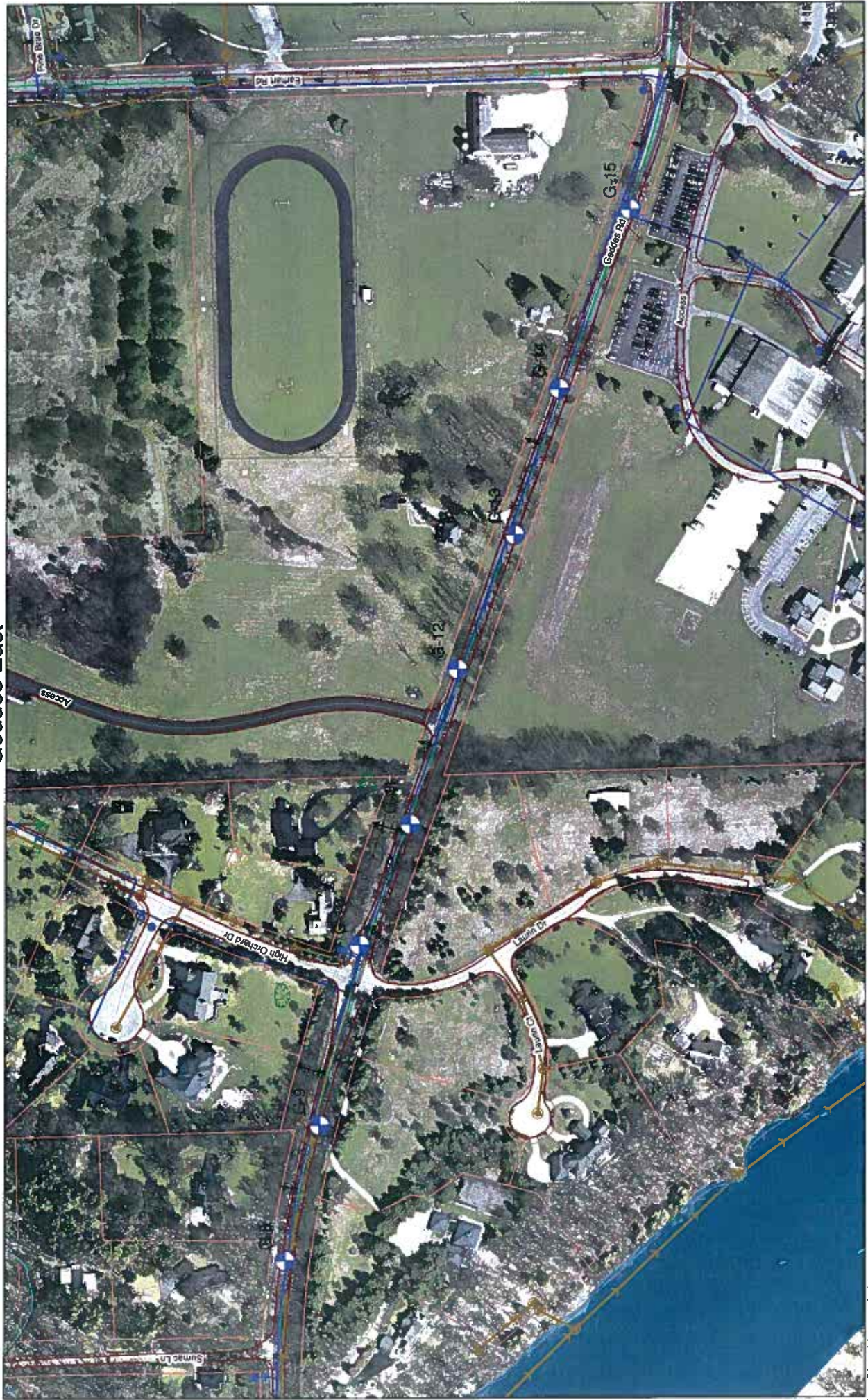
Soil Boring Logs (Borings AO-1 through AO-32)

Soil Boring Logs (Borings AOE-1 through AOE-14)

General Notes


**GEDDES ROAD
(Huron Parkway to Earhart)**

Geddes East



Geddes West




Client: City of Ann Arbor	PSI Project #: 0381193	Boring Log Number: G-1	 Professional Service Industries, Inc.
	Sheet: 1 of 1		
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf)						
												0	20	40	60			
				Surface Elevation:														
1PC					5.5" of ASPHALT													
					SILTY SAND (SM) - fine to coarse, some gravel, brown, moist, medium dense.													
2SS							30	3										
							16, 18, 12											
3SS							12	15										
					SILTY CLAY (CL) - few gravel, trace sand, mottled brown and grayish brown, moist, very stiff.		5											
					END OF BORING		9, 5, 7											
					Boring Location: East Bound Geddes Road 6' South of Centerline, 311' West of Gallup Park's West Entrance													

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.


<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> _____ After Completion	Boring Started: 11/13/2009	Completed: 11/13/2009	Engineer: KFD	
	Drilling Method: 3.25" HSA		Office: Plymouth	
	Driller: M. Dubnicki	Drill Rig: CME-75	Hole Depth (ft): 5.5	Approved: <i>[Signature]</i>
	Note: Boring backfilled with auger cuttings unless otherwise noted.			


Client: City of Ann Arbor	PSI Project #: 0381193	Boring Log Number: G-2	 Professional Service Industries, Inc.
	Sheet: 1 of 1		
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		



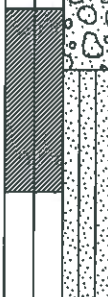
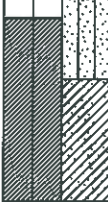
Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60						
												<input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6						
					Surface Elevation:													
1PC					4" of ASPHALT													
					7" of SAND and GRAVEL BASE, fine to coarse, some silt and asphalt, dark brown, moist													
					SILTY SAND (SM) - fine to coarse, some gravel, brown, moist, dense.													
2SS							35	9										
							35, 20, 15											
					CLAYEY SAND (SC) - fine to coarse, some gravel, brown, moist, medium dense.													
3SS							24	8										
							5											
							11, 14, 10											
					END OF BORING													

Boring Location:
 West Bound Geddes Road
 4' North of Centerline, 55' West of Gallup Park's West Entrance


Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.


<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009		Engineer: KFD	
	Drilling Method: 3.25" HSA		Office: Plymouth Drawn By: KFD	
	Driller: M. Dubnicki	Drill Rig: CME-75	Hole Depth (ft): 5.5	Approved: 
	Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.			

Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-3	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart		Location: City of Ann Arbor, Washtenaw County, Michigan	

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
1PC					Surface Elevation: 3.4" of ASPHALT							
					20.6" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
2SS					SILTY SAND (SM) - fine, few gravel, brown, moist, medium dense.	19	9					⊗
						12, 11, 8						
3SS					SILTY SANDY CLAY (CL) - few gravel, occasional silt partings, brown, moist, hard.	12	11					⊗
						5						⊗ 4.5+
					END OF BORING							
					Boring Location: East Bound Geddes Road 6' South of Centerline, 184' West of Gallup Park's East Entrance							

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009 Engineer: KFD	Drilling Method: 3.25" HSA Office: Plymouth Drawn By: KFD
	Driller: M. Dubnicki Drill Rig: CME-75 Hole Depth (ft): 5.5 Approved: 	
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		

Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-4	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
				Surface Elevation:								
1PC					4" of ASPHALT							
					6" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
					SILTY SAND (SM) - fine to coarse, some gravel, trace clay, brown, moist							
2SS					SILTY SAND (SM) - fine to medium, some gravel, brown, moist, medium dense	25	11					⊗
						7.12, 13						
3SS						14	3					⊗
						5						
					END OF BORING							
						8.7, 7						

Boring Location:
 West Bound Geddes Road
 4' North of Centerline, 147' East of Gallup
 Park's East Entrance

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009 Engineer: KFD	Drilling Method: 3.25" HSA Office: Plymouth Drawn By: KFD
	Driller: M. Dubnicki Drill Rig: CME-75 Hole Depth (ft): 5.5 Approved: <i>ML</i>	
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		


Client: <p style="text-align: center;">City of Ann Arbor</p>	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-5	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: <p style="text-align: center;">City of Ann Arbor, Washtenaw County, Michigan</p>		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input type="checkbox"/> * Calibrated Hand Penetrometer (tsf) 0 2 4 6
				Surface Elevation:								
1PC					5" of ASPHALT							
					SILTY SAND (SM) - fine to coarse, some gravel, brown, moist, medium dense							
2SS						14	4					⊗
							7.86					
3SS					SILTY SAND (SM) - fine, few gravel, brown, moist, loose	9	9					⊗
						5						
					END OF BORING							
							5.45					

Boring Location:
 East Bound Geddes Road
 8' South of Centerline, 235' West of Gallup
 Park's West Entrance

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.


<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> _____ After Completion	Boring Started: 11/16/2009	Completed: 11/16/2009	Engineer: KFD	
	Drilling Method: 3.25" HSA		Office: Plymouth	
	Driller: M. Dubnicki	Drill Rig: CME-75	Hole Depth (ft): 5.5	Approved: <i>NSI</i>
	Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.			

Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-6	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input type="checkbox"/> Calibrated Hand Penetrometer (tsf)
Surface Elevation:												
1PC					4" of ASPHALT							
					14" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
2SS					CLAYEY SAND (SC) - fine to coarse, few gravel, brown, moist, loose.	7	10					⊗
						4.43						
3SS						6	7					⊗
						5						
					END OF BORING							
						3.33						
Boring Location:					West Bound Geddes Road 10' North of Centerline, 39' East of Centerline to Windycrest Drive							

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009	Engineer: KFD
	Drilling Method: 3.25" HSA	Office: Plymouth
	Driller: M. Dubnicki Drill Rig: CME-75	Hole Depth (ft): 5.5
	Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.	
		Approved: <i>[Signature]</i>


Client: City of Ann Arbor	PSI Project #: 0381193	Boring Log Number: G-7	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Sheet: 1 of 1	Location: City of Ann Arbor, Washtenaw County, Michigan	

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	"N" Blows Per Foot						
												0	20	40	60			
1PC				3.8"	3.8" of ASPHALT													
					8" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist													
					SILTY SAND (SM) - fine to coarse, some gravel, brown, moist, loose													
2SS							8	3										
							5.4											
3SS							4	9										
					SANDY CLAY (CL) - few gravel, brown, moist, stiff	5												
					END OF BORING		2.2											

Boring Location:
East Bound Geddes Road
6' South of Centerline, 149' West of Centerline
to Sumac Lane

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

▽ Water Level While Drilling <u>Dry</u> ▼ Water Level At Completion <u>Dry</u> _____ After Completion	Boring Started: 11/16/2009	Completed: 11/16/2009	Engineer: KFD	
	Drilling Method: 3.25" HSA	Office: Plymouth	Drawn By: KFD	
	Driller: M. Dubnicki	Drill Rig: CME-75	Hole Depth (ft): 5.5	Approved: <i>MJD</i>
	Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.			


Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-8	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60						
												<input type="checkbox"/> Unconfined Compressive Strength (tsf) <input type="checkbox"/> Calibrated Hand Penetrometer (tsf)						
1PC					6.4" of ASPHALT													
					12" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist													
2SS					SILTY SAND (SM) - fine to coarse, some gravel, brown, moist to wet, medium dense		19	9										
						▼	8.6,13											
3SS					SILTY CLAY (CL) - few gravel, trace sand, mottled brown and gray, moist, hard		20	11										
						5												
					END OF BORING		5.6,12											

Boring Location:
 West Bound Geddes Road
 9' North of Centerline, 153' East of Centerline
 to Sumac Lane

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>3'</u> <input checked="" type="checkbox"/> Water Level At Completion <u>3'</u> Cave @ 3' After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009 Drilling Method: 3.25" HSA Office: Plymouth Driller: M. Dubnicki Drill Rig: CME-75 Hole Depth (ft): 5.5	Engineer: KFD Drawn By: KFD Approved: <i>[Signature]</i>
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		


Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-9	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
				Surface Elevation:								
1PC					5.9" of ASPHALT							
					18" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
2SS					SANDY CLAY (CL) - few gravel, occasional silt partings, mottled brown and orangish brown, moist, hard	12	11					<input checked="" type="checkbox"/> 4.5+ <input checked="" type="checkbox"/> 4.5+
3SS						5	9					<input checked="" type="checkbox"/> 4.5+ <input checked="" type="checkbox"/> 4.5+
					END OF BORING							

Boring Location:
 East Bound Geddes Road
 5' South of Centerline, 447' East of Centerline
 to Sumac Lane

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/16/2009 Completed: 11/16/2009	Engineer: KFD
	Drilling Method: 3.25" HSA	Office: Plymouth
	Driller: M. Dubnicki Drill Rig: CME-75	Hole Depth (ft): 5.5
	Approved: <i>[Signature]</i>	
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		

Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-10	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
					Surface Elevation:							
1PC					4.3" of ASPHALT							
					11" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
					SILTY SAND (SM) - fine, few gravel, brown, moist, loose							
2SS							9	9				⊗
					CLAYEY SAND (SC) - fine to coarse, some gravel, trace silt, brown, moist		4.5,4					
					SILTY SAND (SM) - fine, few gravel, brown, moist, loose							
3SS							5	8				⊗
					END OF BORING		2.2,3					

Boring Location:
 West Bound Geddes Road
 7' North of Centerline, 96' East of Centerline to High Orchard Drive

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009 Drilling Method: 3.25" HSA Office: Plymouth Driller: M. Dubnicki Drill Rig: CME-75 Hole Depth (ft): 5.5	Engineer: KFD Drawn By: KFD Approved: <i>MSE</i>
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		


Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-11	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
				Surface Elevation:								
1PC					5.3" of ASPHALT							
					18.7" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
2SS					SILTY SAND (SM) - fine, trace clay, brown, moist, loose	6	15					⊗
							3.33					
3SS					SANDY CLAY (CL) - trace silt, brown, moist, medium stiff	5	12					⊗ 0.75
					END OF BORING							
							2.22					

Boring Location:
 East Bound Geddes Road
 7' South of Centerline, Located at the Driveway
 Centerline to # 3605 Geddes Road

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.


<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> _____ After Completion	Boring Started: 11/16/2009	Completed: 11/16/2009	Engineer: KFD	
	Drilling Method: 3.25" HSA		Office: Plymouth	
	Driller: M. Dubnicki	Drill Rig: CME-75	Hole Depth (ft): 5.5	Approved: <i>MSK</i>
	Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.			

Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-12	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
				Surface Elevation:								
1PC					4.9" of ASPHALT							
					13" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
2SS					SANDY CLAY (CL) - some gravel and sand seams brown, moist, very stiff	9	10					<input checked="" type="checkbox"/> 25 <input checked="" type="checkbox"/> 20
3SS						6	8					<input checked="" type="checkbox"/> 20 <input checked="" type="checkbox"/> 25
					END OF BORING	5						
					Boring Location: West Bound Geddes Road 9' North of Centerline, 108' East of Driveway Centerline to 3773 Geddes Road							


Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.


<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009 Drilling Method: 3.25" HSA Office: Plymouth Driller: M. Dubnicki Drill Rig: CME-75 Hole Depth (ft): 5.5	Engineer: KFD Drawn By: KFD Approved: <i>[Signature]</i>
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		

Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-14	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
				Surface Elevation:								
1PC					5.9" of ASPHALT							
					11" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
2SS					CLAYEY SAND (SC) - fine to coarse, few gravel, dark brown, moist, loose	8	9					⊗
						6.4						
3SS					SAND (SP-SM) - fine to coarse, some gravel, brown, moist, medium dense	10	4					⊗
						5						
					END OF BORING	4.5						
Boring Location: West Bound Geddes Road 9' North of Centerline, 100' West of Driveway Centerline to #885 Geddes Road												

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/13/2009 Completed: 11/13/2009	Engineer: KFD
	Drilling Method: 3.25" HSA	Office: Plymouth
	Driller: M. Dubnicki Drill Rig: CME-75	Hole Depth (ft): 5.5
	Approved: 	
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		

Client: City of Ann Arbor	PSI Project #: 0381193 Sheet: 1 of 1	Boring Log Number: G-15	 Professional Service Industries, Inc.
Project: 2010 Road Construction Projects Geddes Road, Huron Parkway to Earhart	Location: City of Ann Arbor, Washtenaw County, Michigan		

Sample No./Type	Sample Location	Sample Recovery	Graphical Log	Elevation (ft)	Description of Material	Depth (ft)	Blows Per Foot	Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Dry Unit Wt (lb/cu.ft.)	<input checked="" type="checkbox"/> "N" Blows Per Foot 0 20 40 60 <input type="checkbox"/> Unconfined Compressive Strength (tsf) <input checked="" type="checkbox"/> Calibrated Hand Penetrometer (tsf) 0 2 4 6
				Surface Elevation:								
1PC					4.9" of ASPHALT							
					13" of SAND and GRAVEL BASE, fine to coarse, some silt, dark brown, moist							
2SS					CLAYEY SAND (SC) - fine to coarse, few gravel, dark brown, moist, loose	9	12					⊗
						3.4,5						
3SS					SAND (SP-SM) - fine to coarse, some gravel, brown, moist, medium dense	11	5					⊗
						5						
					END OF BORING	4.5,6						

Boring Location:
 East Bound Geddes Road
 10' South of Centerline, 238' East of Driveway
 Centerline to #885 Geddes Road

Note: The stratification lines indicated here are approximate. In-situ, the transition between soil types may be gradual.

<input checked="" type="checkbox"/> Water Level While Drilling <u>Dry</u> <input checked="" type="checkbox"/> Water Level At Completion <u>Dry</u> After Completion	Boring Started: 11/16/2009 Completed: 11/16/2009	Engineer: KFD
	Drilling Method: 3.25" HSA	Office: Plymouth
	Driller: M. Dubnicki Drill Rig: CME-75	Hole Depth (ft): 5.5
	Approved: <i>[Signature]</i>	
Note: Boring backfilled with auger cuttings and patched with cold bituminous patch.		



GENERAL NOTES

SAMPLE IDENTIFICATION

The Unified Soil Classification System is used to identify the soil unless otherwise noted.

SOIL PROPERTY SYMBOLS

- N: Standard Penetration Resistance "N": Blows per foot of a 140-pound hammer falling 30 inches on a 2 inch O.D. split-spoon
- Qu: Unconfined Compressive Strength, TSF
- Qp: Pocket penetrometer value, unconfined compressive strength, TSF
- Mc: Water Content, %
- LL: Liquid Limit, %
- PI: Plasticity Index, %
- γ_d: Dry Density, PCF
- ▼: Observed groundwater level at time noted after completion of boring

DRILLING AND SAMPLING SYMBOLS

- SS: Split-Spoon – 1 3/8" I.D., 2" O.D., except where noted
- ST: Shelby Tube – 3" O.D., except where noted
- AU: Auger Sample
- DB: Diamond Bit
- CB: Carbide Bit
- WS: Washed Sample

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATIONS

<u>NON-COHESIVE SOILS</u>	<u>RELATIVE DENSITY, %</u>	<u>SPT, N BLOWS PER FOOT</u>
Very Loose	0 – 15	0 – 4
Loose	15 – 35	4 – 10
Medium	35 – 65	10 – 30
Dense	65 – 85	30 – 50
Very Dense	85 – 100	Over 50

<u>COHESIVE SOILS</u>	<u>Qu – (TSF)</u>	<u>SPT, N BLOWS PER FOOT</u>
Very Soft	0 – 0.25	0 – 2
Soft	0.25 – 0.50	2 – 4
Medium Stiff	0.50 – 1.00	4 – 8
Stiff	1.00 – 2.00	8 – 15
Very Stiff	2.00 – 4.00	15 – 30
Hard	Over 4.00	Over 30

PARTICLE SIZES

SOIL CONSTITUENTS

Boulders	Over 12 in. (305 mm)	Trace	Less than 5%
Cobbles	3 in. (76 mm) – 12 in. (305 mm)	Few (Gravel & Cobbles)	Less than 5%
Gravel –	Coarse 3/4 in. (19 mm) – 3 in. (76 mm)	Some	5 – 12%
	Fine 0.19 in. (4.75 mm) – 3/4 in. (19 mm)	With	12 – 30%
Fines –	Silt 0.0002 in. (0.005 mm) – 0.0029 in. (0.075 mm)		
	Clay Less than 0.0002 in. (0.005 mm)		
Sand –	Coarse 0.079 in. (2 mm) – 0.19 in. (4.75 mm)		
	Medium 0.017 in. (0.425 mm) – 0.079 in. (2mm)		
	Fine 0.0029 in. (0.075 mm) – 0.017 in. (0.425 mm)		

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 an employer who is (a) a contractor providing services to or for the City for a value greater than \$10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than \$10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than \$10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here No. of employees__

The Contractor or Grantee agrees:

- (a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as \$13.91/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than \$15.51/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

- (b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.
- (e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

 Company Name

 Street Address

 Signature of Authorized Representative

 Date

 City, State, Zip

 Print Name and Title

 Phone/Email address

CITY OF ANN ARBOR LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2020 - ENDING APRIL 29, 2021

\$13.91 per hour

If the employer provides health care benefits*

\$15.51 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
Colin Spencer at 734/794-6500 or cspencer@a2gov.org**



Vendor Conflict of Interest Disclosure Form
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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 of 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.

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:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	<input type="checkbox"/> Relationship to employee <hr/> <input type="checkbox"/> Interest in vendor’s company <input type="checkbox"/> Other (please describe in box below)

*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 this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Vendor Name	Vendor Phone Number	
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative

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/humanrights.

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 believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 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 allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at www.a2gov.org/humanrights. Then submit it to the Human Rights Commission by e-mail (hrc@a2gov.org), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at hrc@a2gov.org.

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.

MICHIGAN DEPARTMENT OF TRANSPORTATION CERTIFIED PAYROLL

COMPLETION OF CERTIFIED PAYROLL FORM FULFILLS THE MINIMUM MDOT PREVAILING WAGE REQUIREMENTS

(1) NAME OF CONTRACTOR / SUBCONTRACTOR (CIRCLE ONE) (2) ADDRESS

(3) PAYROLL NO. (4) FOR WEEK ENDING (5) PROJECT AND LOCATION (6) CONTRACT ID

(a)	(b)	(c)	(d) DAY AND DATE							(e)	(f)	(g)	(h)	(i)	(j) DEDUCTIONS					(k)			
			Hour Type													TOTAL HOURS ON PROJECT	PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED		GROSS WEEKLY EARNED	TOTAL WEEKLY HOURS WORKED ALL JOBS	FICA
EMPLOYEE INFORMATION	WORK CLASSIFICATION									0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
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NAME:										0			\$0.00									\$0.00	\$0.00
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NAME:										0			\$0.00									\$0.00	\$0.00

