

PUBLIC IMPROVEMENT REQUEST FOR PROPOSAL

RFP# 24-41

DEMOLITION PROJECTS

City of Ann Arbor
COMMUNITY SERVICES AREA



Due Date: JULY 3, 2024 by 3:00 p.m. (local time)

Issued By:

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

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SECTION I - GENERAL INFORMATION

A. OBJECTIVE

The purpose of this Request for Proposal (RFP) is to select a firm to provide building demolition services to four City of Ann Arbor Properties: 415 W. Washington Avenue, 721 N. Main, Ann Arbor Farmers Market Office Building (315 Detroit St.), and the Picnic Shelter at Veterans Memorial Park (2150 Jackson Ave).

B. 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.

Proposals that fail to provide a bid security upon proposal opening will be deemed non-responsive and will not be considered for award.

C. QUESTIONS AND CLARIFICATIONS / DESIGNATED CITY CONTACTS

All questions regarding this Request for Proposal (RFP) shall be submitted via e-mail. Questions will be accepted and answered in accordance with the terms and conditions of this RFP.

All questions shall be submitted on or before JUNE 21, 2024 at 1:00 p.m. (local time), and should be addressed as follows:

Scope of Work/Proposal Content questions shall be e-mailed to Adam Fercho, Park Planner – Afercho@a2gov.org

RFP Process and Compliance questions shall be e-mailed to Colin Spencer, Buyer - CSpencer@a2gov.org

Should any prospective bidder be in doubt as to the true meaning of any portion of this RFP, or should the prospective bidder find any ambiguity, inconsistency, or omission therein, the prospective bidder shall make a written request for an official interpretation or correction by the due date for questions above.

All interpretations, corrections, or additions to this RFP will be made only as an official addendum that will be posted to a2gov.org and MITN.info and it shall be the prospective bidder's responsibility to ensure they have received all addenda before submitting a proposal. Any addendum issued by the City shall become part of the RFP, and must be incorporated in the proposal where applicable.

D. PRE-PROPOSAL MEETING

A pre-proposal conference for this project will be held on **June 18, 2024 at 10:00 a.m.** at **415 W. Washington Street.**

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

E. PROPOSAL FORMAT

To be considered, each firm must submit a response to this RFP using the format provided in Section III. No other distribution of proposals is to be made by the prospective bidder. An official authorized to bind the bidder to its provisions must sign the proposal. Each proposal must remain valid for at least one hundred and twenty (120) days from the due date of this RFP.

Proposals should be prepared simply and economically providing a straightforward, concise description of the bidder's ability to meet the requirements of the RFP. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the proposal.

F. SELECTION CRITERIA

Responses to this RFP will be evaluated using a point system as shown in Section III. A selection committee comprised primarily of staff from the City will complete the evaluation.

If interviews are desired by the City, the selected firms will be given the opportunity to discuss their proposal, qualifications, past experience, and their fee proposal in more detail. The City further reserves the right to interview the key personnel assigned by the selected bidder to this project.

All proposals submitted may be subject to clarifications and further negotiation. All agreements resulting from negotiations that differ from what is represented within the RFP or in the proposal response shall be documented and included as part of the final contract.

G. SEALED PROPOSAL SUBMISSION

All proposals are due and must be delivered to the City on or before JULY 3, 2024 by 3:00 p.m. (local time). Proposals submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each respondent should submit in a sealed envelope

- **one (1) original proposal**
- **one (1) digital copy of the proposal preferably on a USB/flash drive as one file in PDF format**

Proposals submitted should be clearly marked: **“RFP No. 24-41 – DEMOLITION PROJECTS”** and list the bidder’s name and address.

Proposals must be addressed and delivered to:
City of Ann Arbor
c/o Customer Service
301 East Huron Street
Ann Arbor, MI 48107

All proposals received on or before the due date will be publicly opened and recorded on the due date. No immediate decisions will be rendered.

Hand delivered proposals may be dropped off in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall which is open to the public Monday through Friday from 8am to 5pm (except holidays). The City will not be liable to any prospective bidder for any unforeseen circumstances, delivery, or postal delays. Postmarking on the due date will not substitute for receipt of the proposal.

Bidders are responsible for submission of their proposal. Additional time will not be granted to a single prospective bidder. However, additional time may be granted to all prospective bidders at the discretion of the City.

A proposal may be disqualified if the following required forms are not included with the proposal:

- **Attachment B – General Declarations**
- **Attachment D - Prevailing Wage Declaration of Compliance**
- **Attachment E - Living Wage Declaration of Compliance**
- **Attachment G - Vendor Conflict of Interest Disclosure Form**
- **Attachment H - Non-Discrimination Declaration of Compliance**

Proposals that fail to provide these forms listed above upon proposal opening may be deemed non-responsive and may not be considered for award.

H. DISCLOSURES

Under the Freedom of Information Act (Public Act 442), the City is obligated to permit review of its files, if requested by others. All information in a proposal is subject to disclosure under this provision. This act also provides for a complete disclosure of contracts and attachments thereto.

I. TYPE OF CONTRACT

A sample of the Construction Agreement is included as Attachment A. Those who wish to submit a proposal to the City are required to review this sample agreement carefully. **The City will not entertain changes to its Construction Agreement.**

For all construction work, the respondent must further adhere to the City of Ann Arbor General Conditions. The General Conditions are included herein. Retainage will be held as necessary based on individual tasks and not on the total contract value. The Contractor shall provide the required bonds included in the Contract Documents for the duration of the Contract.

The City reserves the right to award the total proposal, to reject any or all proposals in whole or in part, and to waive any informality or technical defects if, in the City's sole judgment, the best interests of the City will be so served.

This RFP and the selected bidder's response thereto, shall constitute the basis of the scope of services in the contract by reference.

J. NONDISCRIMINATION

All bidders 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 Attachment G 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.

K. WAGE REQUIREMENTS

The Attachments provided herein outline the requirements for payment of prevailing wages or of a "living wage" to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and provide documentary proof of compliance when requested.

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 Michigan Department of Transportation Prevailing Wage Forms (sample attached hereto) 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 proposals 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: www.sam.gov.

For the purposes of this RFP the Construction Type of **Building** will apply.

L. CONFLICT OF INTEREST DISCLOSURE

The City of Ann Arbor Purchasing Policy requires that the consultant complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected bidder 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 Conflict of Interest Disclosure Form is attached.

M. COST LIABILITY

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the bidder prior to the execution of an Agreement. The liability of the City is limited to the terms and conditions outlined in the Agreement. By submitting a proposal, bidder agrees to bear all costs incurred or related to the preparation, submission, and selection process for the proposal.

N. DEBARMENT

Submission of a proposal in response to this RFP is certification that the Respondent 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.

O. PROPOSAL PROTEST

All proposal protests must be in writing and filed with the Purchasing Manager within five (5) business days of any notices of intent, including, but not exclusively, divisions on prequalification of bidders, shortlisting of bidders, or a notice of intent to award. Only bidders who responded to the solicitation may file a bid protest. The bidder must clearly state the reasons for the protest. If any 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 Manager. The Purchasing Manager 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 the 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.

P. SCHEDULE

The following is the schedule for this RFP process.

Activity/Event	Anticipated Date
Pre-Proposal Conference	June 18, 2024, 10:00 a.m. (Local Time)
Written Question Deadline	June 21, 2024, 1:00 p.m. (Local Time)
Addenda Published (if needed)	Week of June 24, 2024
Proposal Due Date	July 3, 2024, 3:00 p.m. (Local Time)
Selection/Negotiations	July 2024
Expected City Council Authorizations	August 8, 2024

The above schedule is for information purposes only and is subject to change at the City’s discretion.

Q. IRS FORM W-9

The selected bidder will be required to provide the City of Ann Arbor an IRS form W-9.

R. RESERVATION OF RIGHTS

1. The City reserves the right in its sole and absolute discretion to accept or reject any or all proposals, or alternative proposals, in whole or in part, with or without cause.
2. The City reserves the right to waive, or not waive, informalities or irregularities in terms or conditions of any proposal if determined by the City to be in its best interest.
3. The City reserves the right to request additional information from any or all bidders.
4. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested within RFP.
5. The City reserves the right to determine whether the scope of the project will be entirely as described in the RFP, a portion of the scope, or a revised scope be implemented.
6. The City reserves the right to select one or more contractors or service providers to perform services.
7. The City reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether that proposal is selected. Submission of a

proposal indicates acceptance by the firm of the conditions contained in this RFP, unless clearly and specifically noted in the proposal submitted.

8. The City reserves the right to disqualify proposals that fail to respond to any requirements outlined in the RFP, or failure to enclose copies of the required documents outlined within the RFP.

S. IDLEFREE ORDINANCE

The City of Ann Arbor adopted an idling reduction Ordinance that went 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.

T. 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.

U. MAJOR SUBCONTRACTORS

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over \$50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor. The Bidder shall not change or replace a subcontractor without approval by the City.

N. 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.

SECTION II - SCOPE OF WORK

Please see the Plan Set for more details.

Standard Specifications

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

Copies of the Standard Specifications can be downloaded from the following web link.

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

SECTION III - MINIMUM INFORMATION REQUIRED

PROPOSAL FORMAT

The following describes the elements that should be included in each of the proposal sections and the weighted point system that will be used for evaluation of the proposals.

Bidders should organize Proposals into the following Sections:

- A. Qualifications, Experience and Accountability
- B. Workplace Safety
- C. Workforce Development
- D. Social Equity and Sustainability
- E. Schedule of Pricing/Cost
- F. Authorized Negotiator
- G. Attachments

Bidders are strongly encouraged to provide details for all of the information requested below within initial proposals. 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 proposal being considered non-responsive and will not be considered for award.

Pursuant to Sec 1:325 of the City Code which sets forth requirements for evaluating public improvement bids, Bidders should submit the following:

A. Qualifications, Experience and Accountability - 20 Points

1. Qualifications and experience of the bidder and of key persons, management, and supervisory personnel to be assigned by the bidder.
2. References from individuals or entities the bidder has worked for within the last five (5) years including information regarding records of performance and job site cooperation.
3. Evidence of any quality control program used by the bidder and the results of any such program on the bidder's previous projects.
4. A statement from the bidder as to any major subcontractors it expects to engage including the name, work, and amount.

B. Workplace Safety – 20 Points

1. Provide a copy of the bidder's safety program, and evidence of a safety-training program for employees addressing potential hazards of the proposed job site. Bidder must identify a designated qualified safety representative responsible for bidder's safety program who serves as a contact for safety related matters.
2. Provide the bidder's Experience Modification Rating ("EMR") for the last three consecutive years. Preference within this criterion will be given to an EMR of 1.0 or less based on a three-year average.
3. Evidence that all craft labor that will be employed by the bidder for the project has, or will have prior to project commencement, completed at least an authorized 10-hour OSHA Construction Safety Course.
4. For the last three years provide a copy of any documented violations and the bidder's corrective actions as a result of inspections conducted by the Michigan Occupational Safety & Health Administration (MIOSHA), U.S. Department of Labor – Occupational Safety and Health Administration (OSHA), or any other applicable safety agency.

C. Workforce Development – 20 Points

1. Documentation as to bidder's pay rates, health insurance, pension or other retirement benefits, paid leave, or other fringe benefits to its employees.
- 2.. Documentation that the bidder participates in a Registered Apprenticeship Program that is registered with the United States Department of Labor Office of Apprenticeship or by a State Apprenticeship Agency recognized by the USDOL Office of Apprenticeship. USDOL apprenticeship agreements shall be disclosed to the City in the solicitation response.
3. Bidders shall disclose the number of non-craft employees who will work on the project on a 1099 basis, and the bidders shall be awarded points based on their relative reliance on 1099 work arrangements with more points assigned to companies with fewer 1099 arrangements. Bidders will acknowledge that the City may ask them to produce payroll records at points during the project to verify compliance with this section.

D. Social Equity and Sustainability – 20 Points

1. A statement from the bidder as to what percentage of its workforce resides in the City of Ann Arbor and in Washtenaw County, Michigan. The City will consider in

evaluating which bids best serve its interests, the extent to which responsible and qualified bidders employ individuals in either the city or the county.

The City of Ann Arbor or Washtenaw County – LEAVE/USE ONE jurisdiction is prioritized for evaluation purposes for this solicitation.

2. Evidence of Equal Employment Opportunity Programs for minorities, women, veterans, returning citizens, and small businesses.
3. Evidence that the bidder is an equal opportunity employer and does not discriminate on the basis of race, sex, pregnancy, age, religion, national origin, marital status, sexual orientation, gender identity or expression, height, weight, or disability.
4. The bidder's proposed use of sustainable products, technologies, or practices for the project, which reduce the impact on human health and the environment, including raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and waste management.
5. The bidder's environmental record, including findings of violations and penalties imposed by government agencies.

E. Schedule of Pricing/Cost – 20 Points

Company: _____

2150 Jackson (Veteran’s Park Shelter) Unit Price Bid

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Price</u>
1	Mobilization, Max 5%	1	L Sum	\$ _____	\$ _____
2	Demolition and Disposal of Building and Appurtenant Slabs/Foundations. Incl. Capping of Utilities	4,630	Sft	\$ _____	\$ _____
3	Asbestos Abatement and Disposal	1	L Sum	\$ _____	\$ _____
4	Retaining Wall, Wood, Rem	90	Lft	\$ _____	\$ _____
5	Path, Stamped Conc, Rem	60	Syd	\$ _____	\$ _____
6	Site Grading	1	L Sum	\$ _____	\$ _____
7	Install Sanitary Line with Flowable Fill	410	Ft	\$ _____	\$ _____
8	HMA Wearing Course (1.5 inch), HMA, 5E03	80	Syd	\$ _____	\$ _____
9	HMA Base Course (2.5 inch), HMA, 4E03	80	Syd	\$ _____	\$ _____
10	Aggregate Base (6 inch), CIP, 21AA Crushed Limestone	80	Syd	\$ _____	\$ _____
11	Ball Diamond New Irrigation Piping and System Updates	1	L Sum	\$ _____	\$ _____
12	Ball Diamond New Irrigation System Controls and Electrical	1	L Sum	\$ _____	\$ _____
13	Restoration of Construction Area	1	L Sum	\$ _____	\$ _____
14	Soil Erosion and Sedimentation Control (incl. permit fees)	1	L Sum	\$ _____	\$ _____
15	Construction Fencing and Pedestrian Traffic Control	1	L Sum	\$ _____	\$ _____
16	General Conditions, Permitting, & Testing	1	L Sum	\$ _____	\$ _____

ESTIMATED 2150 JACKSON (VETERAN’S PARK SHELTER) BID TOTAL

\$ _____

See next page for additional bid items.

315 Detroit (Farmer's Market) Unit Price Bid

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Price</u>
1	Mobilization, Max 5%	1	L Sum	\$ _____	\$ _____
2	Demolition and Disposal of Building and Appurtenant Slabs/Foundations. Incl. Capping of Utilities	1,176	Sft	\$ _____	\$ _____
3	Asbestos Abatement and Disposal	1	L Sum	\$ _____	\$ _____
4	Site Grading	1	L Sum	\$ _____	\$ _____
5	Path, Conc, Rem	46	Syd	\$ _____	\$ _____
6	Relocate Owner's Pod	1	L Sum	\$ _____	\$ _____
7	Aggregate Base (8 inch), CIP, 21AA Crushed Concrete	88	Syd	\$ _____	\$ _____
8	Conc Sidewalk, 4 inch, incl. Class II Subbase, CIP	418	Sft	\$ _____	\$ _____
9	Water Service Modifications	1	L Sum	\$ _____	\$ _____
10	3" Screened Topsoil, Seed-Impregnated Mulch Blanket over Compacted Backfill; 14-Day Watering	480	Sft	\$ _____	\$ _____
11	Electrical & Fiber Service Modifications	1	L Sum	\$ _____	\$ _____
12	Soil Erosion and Sedimentation Control (incl. permit fees)	1	L Sum	\$ _____	\$ _____
13	Construction Fencing and Pedestrian Traffic Control	1	L Sum	\$ _____	\$ _____
14	General Conditions, Permitting, & Testing	1	L Sum	\$ _____	\$ _____

ESTIMATED 315 DETROIT (FARMER'S MARKET) BID TOTAL

\$ _____

See next page for additional bid items.

415 W Washington Unit Price Bid

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Price</u>
1	Mobilization, Max 5%	1	L Sum	\$ _____	\$ _____
2	Demolition and Disposal of Buildings. Incl. Capping of Utilities	27,000	Sft	\$ _____	\$ _____
3	Asbestos Abatement and Disposal	1	L Sum	\$ _____	\$ _____
4	Allowance for Additional Quantities for Asbestos Pipe Insulation Removal (For Unforeseen Conditions Beyond Quantities Delineated in Haz Mat Reports)	350	Lft	\$ _____	\$ _____
5	Site Grading	1	L Sum	\$ _____	\$ _____
6	Compacted Class II Sand Backfill	400	Cyd	\$ _____	\$ _____
7	Chimney General Work	1	L Sum	\$ _____	\$ _____
8	Chimney Brick Repointing	450	Lft	\$ _____	\$ _____
9	Chimney Broken/Damaged Brick Replacement	150	Ea	\$ _____	\$ _____
10	Electrical & Fiber Service Modifications	1	L Sum	\$ _____	\$ _____
11	Restoration of Construction Area	1	L Sum	\$ _____	\$ _____
12	Soil Erosion and Sedimentation Control (incl. permit fees)	1	L Sum	\$ _____	\$ _____
13	Construction Fencing and Pedestrian Traffic Control	1	L Sum	\$ _____	\$ _____
14	General Conditions, Permitting, & Testing	1	L Sum	\$ _____	\$ _____

ESTIMATED 415 W WASHINGTON BID TOTAL

\$ _____

See next page for additional bid items.

721 N Main Unit Price Bid

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Price</u>
1	Mobilization, Max 5%	1	L Sum	\$ _____	\$ _____
2	Demolition and Disposal of Buildings. Incl. Capping of Utilities	26,000	Sft	\$ _____	\$ _____
3	Asbestos Abatement and Disposal	1	L Sum	\$ _____	\$ _____
4	Allowance for Additional Quantities for Asbestos Pipe Insulation Removal (For Unforeseen Conditions Beyond Quantities Delineated in Haz Mat Reports)	350	Lft	\$ _____	\$ _____
5	Site Grading	1	L Sum	\$ _____	\$ _____
6	Compacted Class II Sand Backfill	250	Cyd	\$ _____	\$ _____
7	3" Screened Topsoil, Seed- Impregnated Mulch Blanket over Compacted Backfill; 14-Day Watering	5,000	Sft	\$ _____	\$ _____
8	Permanent Fencing	75	Lft	\$ _____	\$ _____
9	Electrical & Fiber Service Modifications	1	L Sum	\$ _____	\$ _____
10	Restoration of Construction Area	1	L Sum	\$ _____	\$ _____
11	Soil Erosion and Sedimentation Control (incl. permit fees)	1	L Sum	\$ _____	\$ _____
12	Construction Fencing and Pedestrian Traffic Control	1	L Sum	\$ _____	\$ _____
13	General Conditions, Permitting, & Testing	1	L Sum	\$ _____	\$ _____
ESTIMATED 721 N MAIN BID TOTAL				\$ _____	

See next page for bid summary and alternate bid items.

Total Base Unit Price Bid

ESTIMATED 2150 JACKSON (VETERAN'S PARK SHELTER) BID TOTAL \$ _____

ESTIMATED 315 DETROIT (FARMER'S MARKET) BID TOTAL \$ _____

ESTIMATED 415 W WASHINGTON BID TOTAL \$ _____

ESTIMATED 721 N MAIN BID TOTAL \$ _____

ESTIMATED BASE BID TOTAL (SUM OF FOUR SITES) \$ _____

315 Detroit (Farmer's Market) Alternate Unit Price Bid Items

Do not include alternate bid items in base bid total.

<u>Item</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Price</u>
A1	In Lieu of Crushed Concrete Backfill (Item #7), Provide HMA Paving				
A1.1	Wearing Course (1.5 inch), HMA	88	Syd	\$ _____	\$ _____
A1.2	Base Course (2.5 inch), HMA	88	Syd	\$ _____	\$ _____
A1.3	Aggregate Base (8 inch), CIP, 21AA Crushed Limestone	88	Syd	\$ _____	\$ _____

ESTIMATED 315 DETROIT (FARMER'S MARKET) ALTERNATE BID TOTAL \$ _____

F. AUTHORIZED NEGOTIATOR / NEGOTIATIBLE ELEMENTS (ALTERNATES)

Include the name, phone number, and e-mail address of persons(s) in your organization authorized to negotiate the agreement with the City.

The 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 bidder 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 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 its proposed time for performance of the work.

Consideration for any proposed alternative items or time may be negotiated at the discretion of the City.

G. ATTACHMENTS

General Declaration, Legal Status of Bidder, Conflict of Interest Form, Living Wage Compliance Form, Prevailing Wage Compliance Form and the Non-Discrimination Form should be completed and returned with the proposal. These elements should be included as attachments to the proposal submission.

PROPOSAL EVALUATION

1. The selection committee will evaluate each proposal by the above-described criteria and point system. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested for evaluation. A proposal with all the requested information does not guarantee the proposing firm to be a candidate for an interview if interviews are selected to be held by the City. The committee may contact references to verify material submitted by the bidder.
2. The committee then will schedule interviews with the selected firms if necessary. The selected firms will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan (if applicable) and pricing.
3. The interview should include the project team members expected to work on the project, but no more than six members total. The interview shall consist of a presentation of up to thirty minutes (or the length provided by the committee) by the

bidder, including the person who will be the project manager on this contract, followed by approximately thirty minutes of questions and answers. Audiovisual aids may be used during the oral interviews. The committee may record the oral interviews.

4. The firms interviewed will then be re-evaluated by the above criteria and adjustments to scoring will be made as appropriate. After evaluation of the proposals, further negotiation with the selected firm may be pursued leading to the award of a contract by City Council, if suitable proposals are received.

The City reserves the right to waive the interview process and evaluate the bidder based on their proposal and pricing schedules alone.

The City will determine whether the final scope of the project to be negotiated will be entirely as described in this RFP, a portion of the scope, or a revised scope.

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.

Any proposal that does not conform fully to these instructions may be rejected.

PREPARATION OF PROPOSALS

Proposals should have no plastic bindings but will not be rejected as non-responsive for being bound. Staples or binder clips are acceptable. Proposals should be printed double sided on recycled paper.

Each person signing the proposal certifies that they are a person in the bidder's firm/organization responsible for the decisions regarding the fees being offered in the Proposal and has not and will not participate in any action contrary to the terms of this provision.

ADDENDA

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

Each bidder should acknowledge in its proposal all addenda it has received on the General Declarations form provided in the Attachments section herein. 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 official written addenda.

SECTION IV - ATTACHMENTS

Attachment A – Sample Standard Contract

Attachment B – General Declarations

Attachment C - Legal Status of Bidder

Attachment D – Prevailing Wage Declaration of Compliance Form

Attachment E – Living Wage Declaration of Compliance Form

Attachment F – Living Wage Ordinance Poster

Attachment G – Vendor Conflict of Interest Disclosure Form

Attachment H – Non-Discrimination Ordinance Declaration of Compliance Form

Attachment I – Non-Discrimination Ordinance Poster

Sample Certified Payroll Report Template

**ATTACHMENT A
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 **Demolition Projects, RFP# 24-41** 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 **Community Services Area**

Project means **Demolition Projects, RFP# 24-41**

Supervising Professional means the person acting under the authorization of the manager of the Administering Service Area/Unit. At the time this Contract is executed, the Supervising Professional is: **Adam Fercho** whose job title is **Park Planner /**

Landscape Architect. 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 by October 1, 2025. Intermediate completion dates shall be in accordance with the Detailed Specifications
- (C) Failure to mobilize and begin demolition services by September 16, 2024 of the 415 W. Washington building shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount equal to \$2000 for each calendar day of delay in the start of demolition 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.
- (D) 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 \$2000 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

Choose one only.

- (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 _____
City Administrator

By _____

Services Area Administrator

Approved as to form and content

Atleen Kaur, 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 RFP 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:

Atleen Kaur, 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 RFP 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)

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

Approved as to form:

Atleen Kaur, City Attorney

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, which, notwithstanding anything to the contrary herein, shall be maintained for three years from the date the Project is completed.

- (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.

Section 44

CONTRACTOR'S AFFIDAVIT

The undersigned Contractor, _____, represents that on _____, 20___, it was awarded a contract by the City of Ann Arbor, Michigan to _____ under the terms and conditions of a Contract titled _____. The Contractor represents that all work has now been accomplished and the Contract is complete.

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

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

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

Contractor Date

By _____
(Signature)

Its _____
(Title of Office)

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

Notary Public

_____ County, MI

My commission expires on:

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the 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

CONTRACT SPECIFICATIONS

Building Demolition

Projects



Prepared for:

City of Ann Arbor

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



Prepared By:

Hubbell, Roth & Clark, Inc.

Project Nos. 20220118, 20230292, & 20240292
ISSUED FOR BID - June 10, 2024

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NOTE: APPENDICES ARE LOCATED IN PLAN SET FILE
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SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.1 SCHEDULE FOR SUBMISSION

- A. Submittal procedures
- B. Submittal Review
- C. Proposed Products list
- D. Shop Drawings, Product Data, and Samples
- E. Manufacture's installation instructions
- F. Manufacture's certificates

1.2 RELATED SECTIONS

- A. General Conditions
- B. Standard Specifications
- C. Section 01400 - Quality Control
- D. Section 01700 - Contract Closeout

1.3 SCHEDULE FOR SUBMISSION

- A. Prior to submitting any shop drawings, product data, portfolios, samples, etc. the Contractor shall prepare a Schedule of Submittals, listing all items in the project which he will submit for review by the Engineer. Identify all critical path submittals.
- B. The summary shall be submitted within twenty (20) calendar days after receipt of Notice to Proceed and shall be updated once per month thereafter.
- C. The summary shall include the proposed dates for submittal for each item for control purposes. The summary shall be prepared in coordination with the Project Schedule for Construction and adequate time shall be allowed therein for review and possible resubmittal.
- D. The summary and schedule for submittals shall not relieve the Contractor of his obligation to comply with specification requirements for items not listed on the schedule.
- E. Nothing herein shall be construed as allowing additional time for completion of the project in the event resubmittal is required for shop drawings or the other items to be submitted.

1.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer approved transmittal form.
- B. Sequentially number the transmittal form. Re-submittals shall have original specification number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor and supplier; pertinent drawing and detail number, and specification section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to the Engineer in a manner to allow sufficient time for review and processing by the Engineer so as to not cause delays in the Work. Coordinate submission of related items.
- F. All drawings, information and documentation shall be prepared and submitted with all words in the English language and dimensions in American units. No foreign language or metric units will be permitted.
- G. Identify variations from Contract Documents and Products and system limitations which may be detrimental to successful performance of the completed work.
- H. Provide space for Contractor and Engineer review stamps.
- I. Revise and resubmit submittals as required and identify all changes made since previous submission.
- J. Distribute copies of reviewed submittals to all concerned and related parties. Instruct parties to promptly report any inability to comply with provisions.
- K. The Engineer reserves the right to refuse to check or review any submittal of a subcontractor or manufacturer which is not presented in compliance with the foregoing requirements.
- L. Electronic Submittals:
 - 1. All electronic submittals shall follow the procedures outlined above.
 - 2. Electronic submittal procedures are only applicable to Shop Drawings and product data submittals.
 - 3. Electronic submittals shall be made in .PDF format
 - 4. Reviewed submittals shall be returned in PDF electronic format for the Contractor's printing and distribution.

1.5 SUBMITTAL REVIEW

- A. All subcontractors and manufacturers' drawings shall first be sent directly to the Contractor, who shall keep a record of the drawing numbers and the dates of receipt. The Contractor shall check thoroughly all such drawings, as regards measurements, sizes of members, materials, and all other details to assure himself that they conform to the intent of the drawings and the

specification, and shall promptly return to the subcontractors and/or manufacturers for correction such drawings as are found inaccurate or otherwise in error.

- B. The Engineer will review the Contractor's, subcontractors' and manufacturers' drawings within a reasonable time after receipt thereof and will return one copy endeavoring to indicate, by notation thereon or written instructions, any correction which may be necessary to meet the Contract requirements. The Contractor shall then review such notations and/or instructions and if he concurs therein, shall make or have made such required corrections, and shall, when so noted on the drawings or requested by the Engineer, resubmit corrected drawings to the Engineer as soon as possible, for final review. Such further review by the Engineer will be limited to the corrections only, and the Contractor, by such re-submission shall be held to have represented that such drawings contain no other alterations, additions or deletions, unless the Contractor (in writing) directs the Engineer's specific attention to same. Should the Contractor question, or dissent from, such notations and/or instructions, he shall so inform the Engineer and request further clarification before resubmitting the drawings.
- C. The review of Contractor's, subcontractors', and manufacturers' drawings by the Engineer is for coordination and assistance, and the Engineer does not thereby assume responsibility for errors or omissions. Such errors or omissions must be made good by the Contractor, irrespective of the receipt, review of the drawings by the Engineer, and even though the work is done in accordance with such drawings.

1.6 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement submit list of all major products proposed for use, including those previously called for to be submitted in the Proposal, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.7 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. While the contract drawings and specifications propose to be complete in all respects as to layout, type of equipment and materials, they are not intended to serve as detailed installation drawings and the preparation of such drawings required or necessary for this purpose, or to set equipment accurately, shall be the responsibility of the Contractor.
- B. These Contract Documents shall be supplemented by other drawings, product data, samples and portfolios of all equipment, components, apparatus, materials, anchors/fasteners, etc. furnished by the Contractor and reviewed by the Engineer. All such supplementary drawings or instructions are intended to be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom. Therefore, no extra charge will be allowed on a claim that particular supplemental drawings or instructions differed from the Contract documents, incurring extra work, unless the Contractor has first brought the matter, in writing, to the Engineer's attention for proper adjustment before starting on the work covered by such and has received from the Engineer an order in writing to so proceed.

- C. These original and supplementary drawings constitute the drawings according to which the work is to be done. The Contractor shall keep at the site of the work, copies of all drawings and specifications and shall at all times give the Engineer or Owner access thereto.
- D. Shop Drawings are drawings, diagrams, schedules other data specifically prepared for the Work by the Contractor or a subcontractor, Subcontractor manufacturer, supplier or distributor to illustrate some portion of the Work.
- E. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of these submittals is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.
- F. Product Data are illustrations, standard schedules, performance charts, instructions, catalog cuts, brochures, diagrams, materials lists and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- G. Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.
- H. The Contractor shall review, approve, and submit to the Engineer, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents requested by the Engineer or Owner or otherwise necessary for the proper execution of the work, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents may be returned without action.
- I. The Contractor shall perform no portion of the Work requiring submittal, resubmittal, and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been reviewed by the Engineer. Such Work shall be in accordance with reviewed submittals.
- J. By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or contained within such submittals with the requirements of the Work and of the Contract Documents.
- K. The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Engineer's review of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and the Engineer has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data, Samples or similar submittals by the Engineer's review thereof, as the Engineer's review is intended to cover compliance with the Contract Document and not to enter into every detail of the shop work.
- L. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those required by the Engineer on previous submittals.

- M. When professional certification of performance criteria of materials systems or equipment is required by the Contract Documents, the Engineer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.
- N. Shop Drawings
 - 1. Submit in the form of legible PDFs
- O. Product Data
 - 1. Submit in the form of legible PDFs
 - 2. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
 - 3. Product data shall include an index sheet containing a space at least 5" x 8" for review stamps and notes.
 - 4. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700 - CONTRACT CLOSEOUT.
- P. Samples
 - 1. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 2. Submit samples of sufficient size and representative of finishes indicating textures, and patterns for Owner selection.
 - 3. Include identification on each sample, with full Project information.
 - 4. Submit the number of samples specified in individual specification sections; two of which will be retained by the Engineer.
 - 5. Reviewed samples which may be used in the work are indicated in individual specification sections.

1.8 MANUFACTURER INSTALLATION INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, operating, maintaining and finishing to the Engineer in quantities specified for Product Data.
- B. Identify conflicts between manufacturer's instructions and contract documents.

1.9 MANUFACTURER CERTIFICATES

- A. When specified in individual sections, submit certification by manufacturer to Engineer, in quantities specified for Product Data.
- B. Indicate material or Product meets or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances
- C. References.
- D. Inspecting and testing laboratory services.
- E. Manufacturers' field services and reports.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals: Submission of manufacturers' instructions and certificates.
- B. Section 01600 - Material and Equipment: Requirements for material and product quality.

1.3 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.4 TOLERANCES

- A. Monitor tolerance control of installed Products to produce acceptable Work. Do not permit tolerances to accumulate.

- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.5 REFERENCES

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date specified in the individual specification sections, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. The contractual relationship, duties, and responsibilities of the parties in Contract nor those of the Architect/Engineer shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.6 INSPECTING AND TESTING LABORATORY SERVICES

- A. The Contractor shall hire an approvable Material Testing firm to perform compaction and concrete tests
- B. Owner may appoint, employ, and pay for specified services of an independent firm to perform inspecting and testing, as required in addition to the material testing identified above..
- C. The independent firm will perform inspections, tests, and other services specified in individual specification sections and as required by the Engineer or the Owner.
- D. Inspecting, testing, and source quality control may occur on or off the project site. Perform off-site inspecting or testing as required by the Engineer or the Owner.
- E. Reports will be submitted by the independent firm to the Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- F. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Engineer and independent firm 48 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- G. Testing or inspecting does not relieve Contractor of performing Work to contract requirements.

- H. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for retesting will be charged to the Contractor by deducting inspecting or testing charges from the Contract Sum.

1.7 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report in duplicate within 30 days of observation to Engineer for information.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01600

MATERIALS, PRODUCTS AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General Provisions.
- B. Transportation and handling.
- C. Storage and protection.
- D. "Or Equal" Clause
- E. Product options.
- F. Substitutions.
- G. Installation of Equipment.
- H. Damage during tests and instruction period.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control: Product quality monitoring.

1.3 GENERAL PROVISIONS

- A. Products (including all materials, machinery, equipment, and systems) shall be carefully designed and installed to insure that all required functions are adequately performed within specified degrees of precision and that each unit shall operate with every other part, furnished or existing, to provide a complete integrated system which shall operate to the satisfaction of the Engineer. Any changes or revisions of existing work made necessary by the type and dimensions of furnished products shall be made at the expense of the Contractor, and he shall furnish detail drawings showing such changes or revisions for the approval of the Engineer.
- B. Submit to the Engineer ample proof that each and every part of the products to be furnished is of a reliable make and of a type which has been in successful operation within the continental United States. Installation of any experimental or untried type of apparatus, material, or machinery will not be allowed.
- C. Each major item of equipment shall have the manufacturer's nameplate securely affixed in a conspicuous place. The nameplate shall show the manufacturer's name, address, model number, rating, and any other pertinent data such as speed, horsepower, etc.
- D. All materials, equipment, and accessories shall be new and unused and shall be essentially the products of a manufacturer regularly engaged in the production of such material or equipment

and shall essentially duplicate material or equipment that has been in satisfactory operation at least 5 years.

- E. The owner reserves the right to reject any material or equipment manufacturer who, although he meets the above requirements, does not provide satisfactory evidence indicating adequate and prompt post-installation repair and maintenance service as required to suit the operational requirements of Owner. Items of any one type of materials or equipment shall be the product of a single manufacturer.
- F. All piping and equipment furnished under this contract shall be fabricated of such materials that under normal operating conditions harmful substances are not imparted to the water supply system.
- G. Except as otherwise specified or required, equipment shall be primed and finish painted at the factory in accordance with the recommendations or the approved manufacturer. All equipment supplied under this contract shall include at least one quart of finish paint used for touch-up at the completion of construction.
- H. Necessary field painting shall be in accordance with the requirements of Section 09900 - Painting. Any damage to shop coating shall be corrected to the satisfaction of the Engineer.
- I. Certification shall be provided that all materials which may come into contact with potable water meets the National Sanitation Foundation Standard 61 and all MDPH regulations in force at the time of submittals.

1.4 TRANSPORTATION AND HANDLING

- A. All parts of the equipment shall be carefully crated to facilitate shipping and handling. The crates shall be constructed to completely protect the equipment and shall be sufficiently strong to permit lifting and skidding without requiring additional bracing or reinforcement.
 - 1. Packages or materials showing evidence of damage or contamination, regardless of cause, will be rejected.
- B. Transport and handle Products in accordance with manufacturer's instructions.
- C. Transport and handle all materials in such a manner to avoid breakage, inclusion of foreign materials, and/or damage by water or other causes.
- D. Deliver packaged materials in original unopened containers. Packages or materials showing evidence of damage or contamination regardless of cause will be rejected.
- E. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- F. Repair or replace all items damaged or broken as a result of the Contractor's operation at no cost to the Owner.
- G. When specified in the individual Section, equipment shall be made available for conditional acceptance by the Engineer at the factory prior to shipment.

- H. Equipment shall not be delivered unless it can be immediately incorporated into the work or proper storage facilities are available.
- I. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.
- J. Notify the Engineer at least two days in advance of the delivery of equipment.

1.5 STORAGE AND PROTECTION

- A. All materials and equipment shall be handled in a manner to avoid damage, breakage, soiling, disfigurement, shock, denting, marring of surfaces or delay in the completion of the work.
 - 1. The Contractor shall coordinate delivery of equipment with his construction program so that an undue amount of storage space is not required. Space for contractor's use will be designated by the Owner.
 - 2. The Contractor shall exercise care in the protection of materials and equipment furnished and/or installed under this contract while they are in storage at the site and during and after installation prior to final acceptance.
 - 3. The Contractor shall repair or replace, without cost to the Owner and to the satisfaction of the Owner, all items damaged or broken as a result of his operation.
 - 4. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
 - 5. All materials which have been stored shall be subject to retest and shall meet the requirements of these Specifications at the time they are used in the work and at the time of final acceptance of the work.
 - 6. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.
- B. Store and protect Products in accordance with manufacturers' instructions, with seals and labels intact and legible.
 - 1. Store sensitive Products in weather tight, climate controlled enclosures.
 - 2. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of Product.
 - 3. All machined surfaces of the equipment subject to corrosion shall be protected by coating with grease immediately after finishing.
 - 4. All flanges shall be protected prior to installation by means of wooden flanges bolted in place.
 - 5. Pump casings shall be thoroughly drained of all water.
 - 6. All unpainted steel surfaces shall be prevented from rusting by an Owner approved method.
 - 7. Plate and sheet metal work shall be handled and stored with care to prevent permanent deformations or crimps in the material.
 - 8. Whenever the shop coat of protective paint is damaged, spot coating shall be made immediately to prevent rusting.
 - 9. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
 - 10. Equipment and materials stored outdoors shall be placed on sloped supports, up at least six inches above the ground.

- C. Openings in tanks, valves and pipe shall be kept covered to prevent dirt, rubbish or water from entering, with machined surfaces such as flange faces, pipe threads, machined weld ends of pipe, and fittings protected from corrosion by proper Owner approved compounds.

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with the provision "No Substitutions": Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for "or Equal" or Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article and Section 01300.

1.7 "OR EQUAL" CLAUSE

- A. Specifying an article, material, or piece of equipment by reference to a proprietary product or by using the name of a manufacturer or vendor followed by the clause "or equal" shall be understood to indicate the type, function, minimum standard of design, efficiency, and quality desired and shall not be construed in such a manner as to exclude products of comparable quality, design, and efficiency.
- B. Comparable products shall be capable of performing equal function and shall be compatible with other equipment, materials, or systems to which they connect or will become an integral part of.
- C. The clause "or approved equal" which may appear elsewhere in the documents shall mean the same as "or equal".
- D. Wherever in the documents an article, material, or piece of equipment is defined by specifying a proprietary product or using the name of a manufacturer or vendor the term "or equal" if not included shall be implied.
- E. Substitutions of "or equal" products are subject to approval of the Engineer.

1.8 SUBSTITUTIONS OR ALTERNATIVES

- A. For the purposes of this Specification, Alternatives and Substitutions are the same.
- B. Alternatives are required to be submitted in the Bid Form, Section 2 – Material, Equipment and Environmental Alternatives. Alternatives submitted on that form must follow the provisions herein, and will be evaluated following the Bid opening. (They will not be considered during the Bid process.) Alternatives proposed following the bid will not be considered.
- C. Refer also to Section 01300.

- D. Document each alternative identified on the Bid Form with complete data substantiating compliance of proposed Substitution with Contract Documents.
- E. Each request shall include the credit amount for the alternative. This amount must include all cost adjustments to any other trade as a result of this alternative.
- F. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 2. Will provide the same warranty for the Substitution as for the specified Product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- G. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- H. Substitution Submittal Procedure:
 - 1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Also provide information required by Section 01300 for substitutions. Burden of proof is on proposer.
 - 3. The Engineer will notify Contractor in writing of decision to accept or reject request.

1.9 INSTALLATION OF EQUIPMENT

- A. General
 - 1. Contractor shall have on hand sufficient personnel, proper equipment, and machinery of ample capacity to facilitate the work.
 - 2. Contractor shall be responsible for locating, aligning, and leveling all equipment.
 - 3. Complete manufacturer's installation instructions including permissible tolerances shall be furnished with each unit of equipment.
 - 4. All equipment shall be installed in accordance with the approved manufacturer's specifications, drawings, and tolerances under the direct supervision of the required manufacturer's engineer.
 - 5. Equipment shall be erected in a neat and workman-like manner on the foundations at the locations and elevations shown on the drawings unless directed otherwise by the Engineer during installation.
- B. Installation
 - 1. Special care shall be used in locating, aligning and, leveling all equipment and parts thereof to insure that each item is in the proper position relative to other equipment and that all parts are aligned within allowable tolerances. The Contractor shall be responsible for this accuracy and shall notify the Engineer of any conditions in prior work which would prevent this alignment before proceeding with the work. The Contractor shall employ a competent surveyor to set all lines and levels of equipment to the accuracy required.

2. All blocking and wedging required for the proper support and leveling of equipment during installation shall be furnished by the Contractor. All temporary supports shall be removed except steel wedges and bronze shims which may be left in place with the approval of the Engineer.
3. Each piece of equipment or supporting base bearing on concrete foundations shall be bedded in grout. The Contractor shall provide a minimum of 1-1/2" thick grouting or as indicated on Contract Drawings.

1.10 DAMAGE DURING TESTS AND INSTRUCTION PERIODS

- A. Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and he shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner formally takes over the operation thereof.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Equipment startup services.
- F. Substantial completion.
- G. Warranties.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals.

1.3 SUBMITTALS

- A. As-Built Drawings
- B. Final Change Order
- C. Final Application for Payment, including
 - 1. Waiver of Liens
 - 2. Contractor's Affidavit
 - 3. Contractors Declaration
 - 4. Release of Surety
- D. Manufacturers extended warranties, with the date of Substantial Completion and warranty end date identified
- E. Occupancy Permit (when required)
- F. Confirmation that all submittals were approved, and that no outstanding re-submittals are required
- G. Satisfactory evidence that all claims have been resolved

1.4 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Submit As-Built drawings to Engineer for scanning. Engineer to provide project AutoCAD Record Drawings

1.5 FINAL CLEANING

- A. Complete final cleaning and restoration prior to final project inspection.
- B. Remove all temporary labels, stains and foreign substances. Wash or clean by approved methods all surfaces on which dust and dirt has collected.
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Clean debris from drainage systems.
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste and surplus materials, rubbish, and construction facilities from the site.
- G. Restore disturbed area. Lawn area may be seeded unless otherwise noted. Paved area shall be restored to their original condition, compatible with the surrounding area, using like materials and workmanship.
- H. Touchup painted surface. Clean and repaint with matching color all scratched, marred or otherwise damaged painted surfaces of all equipment and enclosures.

1.6 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.7 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.

- B. As the work progresses, keep a complete and accurate record of all changes in the Contract Documents (including Drawings, Shop Drawings, Product Data, and Specifications) indicating the work as actually installed. All changes shall be neatly shown on blue-line prints of the drawings effected or in the specifications which shall be kept at the job site for inspection by the Owner and the Engineer.
- C. Ensure entries are complete and accurate, enabling future reference by Owner.
- D. Store record documents separate from documents used for construction.
- E. Record information concurrent with construction progress.
- F. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda, Field Modifications and Change Orders.
- G. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations, slabs, platforms in relation to finish main floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities, conduits and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract drawings.
- H. On completion of the work, prior to the Contractor's application for final payment and as a condition to its approval by the Engineer and Owner, the Contractor shall arrange such site records in order in accordance with the various sections of the specifications bind them together and index them and deliver them to the Engineer. In addition the Contractor shall request a complete set of reproducible contract Drawings, and transfer all as-built revisions and changes to them and deliver them to the Engineer. These drawings shall be dated and marked "As-Built".
- I. All reproducible tracings made by the Contractor, equipment manufacturers, and/or material suppliers shall be corrected to show the work as actually completed or installed and a reproducible copy of these drawings shall then be turned over to the Engineer.
- J. Written approval or other evidence satisfactory to the Engineer of the final conditions of the work shall be obtained from:
 - 1. Detroit Edison Company
 - 2. All public authorities or agencies having jurisdiction over any portion of the work
 - 3. Any others as requested by the Engineer in writing.
- K. All public authorities or agencies having jurisdiction over any part of the work shall be determined, and all the requirements of these authorities or agencies with respect to but not

limited to inspection, permits, fees, approval, and the like regardless of whether they are listed above or not shall be met.

- L. Submit all documents to Engineer for approval prior to submittal of final Application for Payment.

1.8 EQUIPMENT START-UP SERVICES

- A. Equipment start-up period for the training of plant personnel shall begin after satisfactory completion and acceptance of the field tests and coincidentally with the certified date of substantial completion for that part of the work for which the equipment is included. If the equipment is not covered by a certificate of substantial completion for a part of the work, the period shall begin upon substantial completion of the project.
- B. During the equipment start-up period, the Contractor shall furnish at no additional cost to the Owner the services of factory trained representatives of the equipment manufacturers for the equipment designated in the Specifications to:
 - 1. Assist in the start-up and operations of the equipment.
 - 2. Assist in the training of facility personnel, designated by the Owner, in the proper operation and maintenance of the equipment.
- C. The Owner shall:
 - 1. Provide the necessary personnel to be instructed in the operation and maintenance of the equipment. The Owner's personnel shall operate all equipment.
 - 2. Pay for all fuel, power and chemicals consumed beyond quantities specified or in the Contract Documents or required due to Contractor's fault. The Contractor shall pay for fuel, power, and chemicals consumed up to the date of "certified substantial completion" except as otherwise specified herein.
- D. Contractor shall be available to promptly repair all work during the start-up period so as to cause minimum disruption to the total facility operation.
- E. In the event a system, equipment, or component proves defective or is unable to meet specified performance criteria, the Contractor shall replace the defective item and the one year guarantee period for the item shall start after satisfactory replacement and testing of the item.

1.9 SUBSTANTIAL COMPLETION

- A. Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy and utilize the facilities for its intended use.
- B. When the Contractor considers that the Work, or portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's list, the Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Engineer's inspection discloses any item, whether or not included on the

Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall complete or correct such item upon notification by the Engineer. The Contractor shall then submit a request for another inspection by the Engineer to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the Engineer will prepare a Certificate of Substantial Completion which shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate.

1.10 WARRANTIES

- A. Provide duplicate copies of all extended warranties.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers with a Table of Contents in three D side ring binder with durable plastic cover.
- C. Submit warranty documents prior to final Application for Payment.
- D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.
- E. All parts of the work or equipment which is in the opinion of the Engineer prove defective in material, workmanship, or operation within the warranty period shall be removed and replaced or repaired in a manner satisfactory to the Engineer and at no cost to the Owner.
- F. Any service material or equipment required because of the defect shall be supplied without charge.
- G. All work specified to be designed by the Contractor shall be guaranteed to perform as specified.
- H. The Warranty period shall be one year from the date of Substantial Completion unless:
 - 1. A greater period is specified elsewhere.
 - 2. Owner chooses to take over and use a portion of the Work as provided for in the Specifications; in which case the warranty shall be one year from said takeover and use.
- I. Equipment or work replaced and/or repaired during the warranty period shall be guaranteed for one year from the date of acceptance of the repair or replacement or until expiration of the original warranty period whichever comes later.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 02050 –
DEMOLITION WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Demolition of designated structures and removal of materials from site.
- B. Demolition, removal, and disposal off-site of masonry block, concrete and all other debris created by the Work.
- C. Demolition removal and disposal of piping, equipment, and wiring unless same is called to be turned over to the Owner, disconnected and left in-place, or left in operation.
- D. Disconnecting and capping of identified utilities.

1.2 REGULATORY REQUIREMENTS

- A. Conform to all applicable Federal, State, County, and local codes and ordinances for demolition of structures, safety of adjacent structures, dust control, runoff control, disposal, and erosion control.
- B. Submit Regulatory Notifications for demolition work to authorities as required to perform the Work.
- C. Obtain required permits from authorities.
- D. The cost of all permits shall be included as part of the bid.
- E. Notify affected utility companies before starting work and comply with their requirements.
- F. Pay all costs incurred with terminating utility services on the site.
- G. If a particular utility company requires work to be done by their forces, the cost of this work shall be included in the base bid.
- H. Do not close or obstruct public roadways, sidewalks, and hydrants without permits.

1.3 PROJECT CONDITIONS

- A. The buildings to be demolished shall be considered turned over to the Contractor who shall assume full responsibility of, and liability for, the premises as though an Owner, immediately upon award of the Contract. The Owner, however, reserves the right to enter the properties for inspection purposes at any time.

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- B. Immediately after the contract is awarded, the Contractor will meet with the Owner's Engineer and prepare a schedule setting actual dates for starting and completion of the various parts of the work.
- C. The Contractor shall provide all toilet facilities required for the use of his personnel on the site. Any water, compressed air electric power, telephone, or other services required by this Contractor, will be furnished by him, the cost of which shall be included in his bid.
- D. Protection:
 - 1. Perform all demolition and removal work to prevent damage or injury to structures, occupants thereof and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
 - 2. The Contractor shall provide and install all necessary shoring and bracing required to support walls and other parts of existing buildings during demolition. All Contractor installed fences, barricades, shoring, etc. not essential for the further protection of property or personnel at the completion of the demolition work shall be removed by the Contractor.
 - 3. Closing or obstructing of roadways, sidewalks, and passageways adjacent to the work by the placement or storage of materials will not be permitted, and all operations shall be conducted with a minimum interference to traffic on these ways.
 - 4. Erect and maintain barriers, lights, sidewalk sheds, and other necessary protective devices.
 - 5. Repair damage to facilities to remain, or to any property belonging to the Owner or occupants of the facilities.
- E. It is the intent of this Section that the Demolition Work shall be complete whether or not specifically specified herein or shown on the Drawings, and all costs associated with the Demolition Work shall be included in the bid price.
- F. Explosives:
 - 1. The use of explosives will not be permitted.

1.4 COORDINATION OF THE WORK

- A. Contractor shall submit for approval, before commencing work:
 - 1. Schedule: Submit for approval, proposed methods, equipment, and operating sequences. Include coordination for shut-off, capping, temporary services, continuation of utility services, and other applicable items to ensure no interruption of Owner's operations.
 - 2. A detailed sequence of demolition and removal work to ensure uninterrupted of Owner's operation.
 - 3. Names and locations of proposed licensed disposal sites for all materials.
 - 4. Notify and schedule all demolition work through the Owner.

1.5 TESTING AND SAMPLING

- A. The Owner will provide and pay for all testing and sampling as per the General Conditions.

- B. The Contractor shall provide full access to all areas to the Independent Testing Laboratory selected by the Owner to perform tests, as outlined herein.

1.6 CONTRACTOR'S SUPERVISION

- A. Contractor's responsibility shall include a completely equipped first aid kit, provided and maintained at the site in a clean orderly condition and shall be readily accessible at all times to all the Contractor's employees.
- B. The Contractor shall designate certain employees who are properly instructed to be in charge of first aid. Contractor is fully responsible for site safety during the execution of the work.
- C. At least one such employee shall be available whenever work is in progress at the demolition site.
- D. Telephone call lists for summoning aids from outside sources, such as doctors, ambulances, pulmotor and rescue squads, shall be conspicuously posted at the site.

1.7 MAINTENANCE OF SERVICE

- A. Contractor shall note the present use and volume of traffic on adjacent roadways.
- B. Full protection shall be provided for these roadways and all work governed by this Proposal shall be coordinated in such a manner so as not to infringe on the full use of these roadways, as approved by the Engineer.
- C. Any and all operations within road rights-of-way shall be conducted in strict conformance with the Specifications and the Michigan Manual of Uniform Traffic Control Devices.
- D. The premature breaking up and removal of public sidewalks, streets, and other related pavements is not a part of this contract.
 - 1. The Contractor shall be responsible for the above items.
 - 2. To assure minimum damage during period of demolition and removal of existing buildings, the Contractor shall protect same with heavy timbers, meeting Engineer's approval, or use other means meeting Engineer's approval to maintain existing and construction traffic patterns, as required.
- E. Upon removal of all protection materials from the above described Municipality property, all shall be intact and capable of use by the public or other trades without recourse to repairs, the expense of which, if necessary, will be paid by the Contractor.
- F. Where additional removal is required after demolition of the buildings, said removal shall be accomplished as specified elsewhere herein in the chronological order indicated.
- G. Any damage by the Contractor to items not scheduled for demolition, shall be immediately repaired to a condition "As-Good-As", or "Better" at the Contractors sole expense.

1.8 SUBMITTALS

- A. Submit under provisions of Section 01300 of the specification.

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- B. Shop Drawings: Coordination schedule described above. Indicate demolition and removal sequence; and location and construction of barricades, fences, and temporary work.

1.9 SCHEDULING

- A. Schedule all work for protection, demolition removal, and salvage to comply with Special Project Requirements.
- B. Coordinate utility terminations where applicable with the Owner.
 - 1. The Contractor shall arrange for gas and electrical terminations with the local providers and Miss Dig as necessary to prepare the site for the demolition work.

1.10 PROJECT RECORD DOCUMENTS

- A. On completion of project, prior to receiving final payment, the Contractor shall prepare record Drawings, or record reproducible copies of the Contract Drawings provided to him by the Engineer, showing locations of existing utilities which are either left in operation or abandoned in place and exposed by his work.
- B. Accurately record locations of capped utilities, and subsurface obstructions encountered.

PART 2 GENERAL

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PART 3 EXECUTION

3.1 PREPARATION

- A. Prior to submitting his bid, the Contractor shall visit the site and determine the nature of the work.
- B. Provide, erect, and maintain temporary barriers and security devices at the site.
- C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as required.
- D. Mark location of all utilities.
- E. Contractor's responsibility shall include a completely equipped first aid kit, provided and maintained at the site in a clean orderly condition and shall be readily accessible at all time to all the Contractor's employees.
 - 1. The Contractor shall designate certain employees who are properly instructed to be in charge of first aid.
 - 2. At least one such employee shall be available whenever work is in progress.
- F. Telephone call lists for summoning aid from outside sources, such as doctors, ambulances, pulmonary and rescue squads, shall be conspicuously posted at the site.

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3.2 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent structures, occupancies, and roadways.
- B. Conduct demolition operations to ensure safety of all persons and to prevent damage to existing structures and utilities, construction in progress, and other property.
- C. Cease operations immediately if adjacent structures appear to be in danger. Notify Engineer immediately. Do not resume operations until permission has been granted by the Owner.
- D. Conduct operations with minimum interference to public or private accesses. Maintain protected egress and access at all times.
- E. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.
- F. All dumpsters supplied by the Contractor for use during the project shall be covered with tarps at all time when not being actively used.
- G. Sprinkle the work area with water to minimize dust.
 - 1. Provide hoses and water connections for this purpose.
 - 2. Contractor shall obtain a meter and backflow preventor from the local municipality and pay all fees related to rental of equipment and usage of water prior to final acceptance.

3.3 PARTIAL DEMOLITION

- A. Restrict demolition to comply with the limits of removal as shown on the Drawings.
- B. Protect adjacent members from any and all damage due to demolition operations.
- C. Sawcutting of concrete for removal shall stop at corners. Sawcutting shall not continue beyond limit of removal (corner) at either face of concrete.

3.4 DEMOLITION

- A. The work included under this Section consists of providing all labor, equipment, and services required to remove and dispose of demolition items as shown on the Drawings.
- B. The items of demolition and removal shown are not necessarily intended to be a complete detail of each and every item of work.
 - 1. The Contractor is required to carefully review the Drawings for all trades, as well as examine the actual sites of the various items of work so that he may include all items of demolition and removal work under this section.
 - 2. The Owner does not guarantee that the work was constructed in accordance with any drawings that are available.
 - 3. The Contractor shall make his own independent determination of the work by visiting and surveying the work sites.

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4. All information relative to existing conditions is shown to assist the Contractor in evaluation of the work, but with no specific representation, either expressed or implied, as to completeness or accuracy. The Contractor shall be responsible for any deductions or conclusions made on the basis of this information and that of any additional site inspections, if made.
 5. Location of existing underground utilities and subsurface obstructions are shown using the best information available but with no representation that the indicated locations are accurate or that lines other than shown may not be present.
- C. In general, the indicated removal of a piece of equipment shall include all steel supports, interconnecting pipe, fittings, valves, miscellaneous devices and electrical conduit and wiring unless otherwise called for.
- D. When a piece of equipment or device is removed the piping, and/or electrical, shall be removed back to the main line.
 1. Piping shall be capped at the main.
 2. Electrical conduit and wiring shall be removed back to the point of distribution.
- E. The Drawings are not intended to indicate precise details of all interconnecting items to be removed nor exact locations of items for demolition and removal.
 1. The Contractor shall visit the site prior to bidding to ascertain the scope of work and shall, if necessary, request written clarification of any items in doubt.
- F. Bracing and shoring shall be provided as necessary to prevent collapse due to removals of any part of any of the structures concerned with under this contract.
 1. Bracing and shoring shall be removed promptly when no longer required.
 2. Care shall be taken not to impair retained portions of existing structures during demolition and removal operations.
- G. All debris, scrap, etc., removed during demolition operations, unless specified otherwise hereinafter, shall become the Contractor's property and be legally disposed of or recycled promptly off the Owner's property.
 1. Only one day's accumulation of debris will be permitted at any job site unless the material is suspected to be hazardous/contaminated as determined in 3.05 of this Section.
 2. Such materials may be stored as indicated in 3.05 of this Section.
 3. All suspect materials shall be landfilled if not tested and approved for other disposal.
- H. Cleaning wastes (liquid or solid) shall be stored in container suitable for the type of material, tested and disposed of in an offsite facility that is appropriate for the type of tested material.
- I. Unless noted otherwise, all existing fence within the sites shall be removed in its entirety, including foundations.
- J. Existing trees on the site shall be protected against damage from operations governed by this work, subject to deposition under other specification sections herein.
- K. After storm and sanitary drain lines are disconnected, the Contractor shall remove them.

- L. In general, this Contractor will take possession of the buildings to be demolished and all of their contents, including all remaining plumbing fixtures, heating units, structural shapes, piping, radiators, and electrical installation of every description.
- M. All the contents are to be removed, the buildings demolished and sites cleared. Existing interior concrete slabs and asphalt pavement at existing grade levels shall also be removed as they may exist.
- N. All masonry walls and existing foundations shall be removed.
- O. All columns and existing interior concrete and masonry walls are to be removed.
- P. Concrete curbs, raised concrete bases, etc., within interior or exterior to existing buildings at grade shall be removed.
- Q. All pits and subgrade areas to be backfilled shall be cleaned free of all rubbish and loose material, subject to Engineer's inspection and subsequently filled, as specified herein.
- R. All pit and basement slabs shall be removed prior to backfill.
- S. All pit and subgrade areas, as they exist, shall be backfilled in compacted layers not exceeding 6" in thickness with approved back run sand in their entirety.
- T. Sand backfill material must be accepted by the Independent Testing Laboratory prior to backfilling with a report indicating approval, submitted to the Owner's Engineer.
1. All backfill material must meet 95% compaction, Modified Proctor, including bottom portion of fill as well as top layers.
 2. A representative of the Independent Testing Laboratory must be on the site continually during all phases of the backfilling operation to provide continuous inspection as well as tests.
 3. Individual tests shall consist of a minimum of one test per 1,000 sq. ft. per foot of lift in unconfined areas taken as a random pattern as the backfilling progresses or one test per foot of lift in each confined area 1,000 sq. ft. or less.
 4. All material shall be compacted to a minimum bearing value of at least 4,000 psf at optimum moisture.
- U. Trucks hauling loose materials from or to the sites shall be tight and their loads trimmed to prevent spillage on public streets.
1. The Contractor shall promptly clean streets dirtied by any cause arising from his operations.
- V. Wood, Glass and Plastic: Wood, glass and plastics must be landfilled.
- W. Tanks, piping and miscellaneous metals shall be landfilled or recycled.
1. Tanks, piping and miscellaneous metals may be required to be cleaned, characterized, tested and disposed of in accordance with the characterization or tests as required by State or Federal regulations.
- X. Asphalt: Asphalt materials may be recycled, or landfilled.

- Y. Concrete: Concrete may be recycled if there are no visible reinforcement bars. If concrete is stained, it must be tested prior to recycling and disposed of in accordance with the test results.
- Z. Electric lamps and devices containing elemental mercury shall be managed as a universal waste under the requirements of R 299.9109 and R 299.9228 of the Part 111 rules and 40 CFR Part 2734 as overseen by the appropriate governmental agency.
 - 1. Specific requirements for universal waste handlers, universal waste removal methods, storage and labeling of universal wastes, transportation of universal waste, and universal waste destination facilities.
- AA. Ballasts containing PCB's shall be disposed of under the requirements of the Federal Toxic Substances Control Act (TSCA).
 - 1. Ballasts shall be assumed to contain PCBs if it was manufactured prior to 1978 or the ballast does not contain the statement "No PCBs." Small capacitors with less than 3 pounds of fluid are generally not subject to TSCA disposal requirements.
 - 2. All leaking ballasts must be managed and disposed of as a PCB waste.
- BB. Care shall be taken that dust and debris do not in any way impair or damage the Owner's machinery or plant that has to be salvaged or remain in place.
 - 1. The work of this section shall take into consideration the protection of employees, buildings, machinery, and equipment.
 - 2. In line with this requirement, all necessary dust and weather protection, of a type meeting with the approval of the Owner, shall be provided for the time required, and promptly removed when no longer required.

3.5 HAZARDOUS/CONTAMINATED MATERIAL

- A. The following indicators shall be used by Owner onsite observers during demolition to identify materials suspected of being hazardous or contaminated and requiring disposal in a Type I or Type II landfill.
 - 1. Insulation or fibrous material that may contain asbestos.
 - 2. Flooring or ceiling tiles that may contain asbestos.
 - 3. Material that emits a chemical or petroleum odor.
 - 4. Based on these observations, materials in question shall be stockpiled separately, inspected, and representative samples should be collected and screened in the field.
 - 5. Materials should be stored in a manner consistent with the suspected nature of the waste, at a secure location at the Plant, designated by the Owner, until disposal is determined.
- B. Potentially hazardous materials should be screened in the field by qualified personnel for the presence of volatile organic compounds (VOC) using a photoionization (PI) meter.
 - 1. It is assumed that the presence of VOCs should provide a general indicator of the presence of other potentially hazardous chemicals.
 - 2. Materials to be subjected to further laboratory analysis should be selected based on the results of the field screening and observations made by the person monitoring the demolition.
- C. Based on the field screening and laboratory analysis, the Contractor will be advised by the Owner as to the required method of disposal.

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3.6 WASTE CHARACTERIZATION AND TESTING

- A. All material that is required to be tested in Section 3.4 and 3.5 shall be tested in accordance with the requirements for testing of the suspected hazardous or contaminated material.
- B. Materials sent to different disposal facilities shall meet have been tested in accordance with the testing requirements of that facility and shall meet the facilities material quality requirements.
- C. The Contractor is responsible testing and for submitting initial waste characterization data to the disposal of recycling facilities through the Owner.
- D. The Contractor shall be aware that the results of testing are expected to be available not less than ten (10) days after the samples have been taken.

3.7 DISPOSAL AND RECYCLING FACILITIES

- A. As part of the submittal process, the Contractor shall submit to the Owner a list of all landfills, recycling facilities, other disposal facilities, material transporters and intended items to be transported by or disposed of at each landfill or facility.
 - 1. The submittal shall include classifications for each transporter and facility and a copy of the license for each transporter and facility.
- B. No material shall be shipped to any landfill, disposed or recycling facility without prior approval of the Owner and a complete record shall be kept of such items.
 - 1. This record shall be turned over to the Owner upon completion of the demolition work.
- C. Materials that are transported from the Plant shall be transported by a transporter who meets applicable requirements of State and Federal law.
 - 1. The material shall be contained and transported in a manner that meets all applicable requirements of State and Federal law.
- D. Serial numbered and dated load tickets are required for all hazardous/contaminated material that leaves the construction site.
 - 1. The tickets will be generated by the Owners representative, in triplicate.
 - 2. One ticket will be kept and two will be given to the driver.
 - 3. The load tickets will show the destination of the material.
 - 4. The load ticket and the facility invoice must be included with any request for payment.
 - 5. These documents will be reconciled with the owner's copy of the load tickets before payment will be made to the contractor.
 - 6. The manifesting system shall meet the requirements of the appropriate State and Federal regulations for the waste material.

3.8 UTILITIES

- A. The Contractor shall notify all corporations, companies, individuals, or local authorities owning conduits, wire, or pipes running to and on the property.

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- B. The Contractor shall coordinate arrangements to cap all pipes and sewers scheduled for demolition at the curb line and removal of all wires running to or on the property. The City of Berkley's DPW will cap the services at the property line. A minimum of one week prior to planned demolition, the Contractor is to contact the DPW to request work orders for the disconnect of the services at the property line, which includes water, fire suppression and sewer leads. The Contractor is responsible for removing the existing leads from the property line back to the building.
- C. All gas services shall be terminated at the appropriate mains, meeting Engineer's approval.
- D. Existing telephone and electrical service to the buildings shall be removed in their entirety, back to the nearest service pole not conflicting with new construction.
- E. As specified, all water and electrical connections to be removed shall be removed by this Contractor. All required letters of clearance for the respective utilities and governing authorities, shall be obtained by this Contractor and costs for same included in the base bid.
- F. Where the respective utilities require that the work be done by their forces rather than the Contractor's forces, then the cost for same shall be included in the base bid.
- G. Contractor shall protect and maintain all conduits, drains, sewers, pipes, poles and wires that are to remain on the property.

3.9 WORK INCLUDED

- A. All debris shall be removed as directed by the Owner and disposed of off-site at the Contractor's expense.
- B. The Contractor shall be responsible for taking all necessary measures for safely removing, storing, transporting and disposal of materials.

END OF SECTION

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ASBESTOS REMEDIATION**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes removal and disposal of asbestos-containing materials by full enclosure, glove bag, or entire structures methods as applicable. Demolition and debris removal of all asbestos-containing materials identified by provisions of this Section, or shown on drawings, or identified at the site, shall be executed under the provisions of this Section, and other applicable sections of these specifications.
- B. Extent of asbestos removal work is as follows:
 - 1. Indicated on drawings.
 - 2. Surveyed and listed in "Schedule of Items Containing Asbestos" Article in Part 3 of this Section.
 - 3. Surveyed and listed in "Schedule of Items Containing Asbestos" Article in Part 3 of this Section, as specified in related sections, and as indicated on the drawings. Proceed with Work of this Section simultaneously, and in coordination with, remaining Work of the Project.

1.2 DEFINITIONS

- A. Asbestos Abatement Firm: Firm engaged to perform actual removal and disposal work, either as Contractor or subcontractor.
- B. Asbestos Containing Material: The term "asbestos containing material" is abbreviated ACM.
- C. Owner's Consultant: Firm engaged by Owner to identify and measure asbestos containing materials, or to inspect demolition operations, including monitoring of air quality.

1.3 SUBMITTALS

- A. Initial Submittals: Submit the following documents to Owner's Representative at the pre-abatement meeting:
 - 1. License from the State of Michigan in accordance with Act 135 P.A. 1986 (Asbestos Abatement Contractors Licensing Act).
 - 2. Copy of notification sent to appropriate federal, state, and local agencies.
 - 3. Schedule of removal, specifying work locations, length and number of shifts, foreman's name, and crew size.
- B. Waste Disposition Submittals: Submit to owner signed waste shipment record stating that asbestos waste has been properly disposed. Submit the following:
 - 1. Receipts (trip tickets) from approved landfill.
 - 2. Asbestos Waste Shipment Record: As follows:

1. Prior to removing asbestos-containing material from the project site, provide Owner's Representative or Owner's consultant with a completed waste shipment record fully complying with Section 61.150 of the NESHAP standard, and 49 CFR Part 172.200 of the U.S. Department of Transportation, and including all required information.
2. Ensure that the landfill operator provides a signed copy of the waste shipment record to owner within 35 days of the date that asbestos-containing material is removed from the project site. If waste is not transported directly from the project site to the landfill, the waste shipment record shall reflect each transfer.
3. The Owner will not make final payment prior to receipt of signed waste shipment record.

1.4 QUALITY ASSURANCE

- A. Engage one of the following firms to perform abatement of asbestos containing materials:
 1. Adrian Environmental, LLC
 2. Building Decommission Services, Inc.
 3. Certified Abatement Services, Inc.
 4. Environmental Maintenance Engineers, Inc.
 5. Environmental Specialty Services, Inc.
 6. Great Lakes Environmental Service, Inc.
 7. MIS Corporation-Michigan
 8. Next Generation Environmental, Inc.
 9. Pro-Tech Environmental, Inc.
 10. Professional Thermal Systems, Inc.
 11. Qualified Abatement Services, Inc.
 12. Quality Environmental Services, Inc.
 13. Sloan Environmental Services, Inc.
 14. Trust Thermal Abatement, Inc.
- B. Regulatory Requirements: Make all necessary notifications to the appropriate federal, state, and local agencies.
 1. The National Emission Standards for Hazardous Air Pollutants (NESHAP), Asbestos regulation 40 CFR 61, Sub-Part M requires that if at least 80 lin. meters (260 lin. ft.) of friable asbestos materials, at least 15 sq. meters (160 square feet), or 1 cu. meter (35 cu. ft.) of friable asbestos materials, or other facility components are stripped or removed while renovating a facility, all the requirements of section 61.147 apply.
 2. When applicable, notify the Michigan Department of Environment, Great Lakes, and Energy (EGLE), the Michigan Department of Licensing and Regulatory Affairs (MDLARA), and appropriate state and local regulatory agencies. No work shall be conducted without notification of authorities having jurisdiction.
- C. Pre-Abatement Meeting: Approximately 2 weeks prior to scheduled start of the abatement project, the Owner's Representative will hold a pre-abatement meeting with the individuals indicated below:
 1. Contractor representative.
 2. Asbestos Abatement Firm's representative.
 3. Owner's consultant.

4. Owner's Representative.
 5. Owner's building maintenance personnel.
- D. The meeting agenda will include:
1. Review of the scope of work.
 2. Removal methods to be used.
 3. Review of Contractor's initial submittals.
 4. A walk-through survey of the site, if appropriate.
- E. For small projects, the meeting may be suspended at the discretion of the Owner's Representative. If the meeting is suspended, deliver required initial submittals to the Owner's Representative's office 2 weeks prior to the start of work.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 ASBESTOS ABATEMENT, GENERAL

- A. Conduct asbestos abatement operations in a manner that fully protects Contractor's and subcontractor's employees, the general public, and building occupants from exposure to asbestos and other safety and health hazards.
1. Asbestos abatement projects shall be directly supervised by a competent person as described in 29 CFR 1926.1101.
 2. The supervisor/competent person must complete responsibility checklists throughout all phases of the project.
- B. Protect adjacent areas, materials and surfaces from damage due to demolition operations, including but not necessarily limited to the following:
1. Water damage.
 2. Dirt, dust and debris.
 3. Abrasion.
 4. Cuts and scratches.
 5. Holes from fasteners for temporary barriers.
- C. All asbestos work shall be conducted within a regulated area that complies with the following requirements:
1. Post a sufficient number of signs required by 29 CFR 1926.1101 at the asbestos abatement area and at every work area entrance, so that tenants, Owner's personnel, and other contractor's employees have an opportunity to take protective measures before exposing themselves to asbestos. Place banners if necessary to secure open areas. Include information on signs indicating location and quantity of asbestos-containing material.
 2. Allow only authorized, properly protected personnel to enter the regulated area. Immediately report unauthorized individuals entering the work area to Owner or the Owner's consultant.

- D. When required, provide employees and inspectors authorized to enter the regulated area with protective work clothing consisting of disposable Dupont "Tyvek" (or equivalent) full body coveralls, head covers, boots, and other necessary safety gear, including a hard hat and eye protection.
- E. Provide respiratory protection to employees as required by current OSHA regulations including 29CFR 1910.134 and 1926.1101.
1. Provide asbestos abatement workers with powered air purifying respirators (PAPR) with full facepiece and HEPA filters for adequate protection during asbestos material removal operations. Respiratory protection may be down-graded if negative exposure assessment indicates that less protection is required.
 2. A half-face respirator or PAPR must be worn while tearing down and setting up enclosures, while glovebagging, and during pre-cleaning and post-cleaning work.
 3. Do not allow respirators to be pulled away from faces while in the work area.
 4. Maintain an extra PAPR unit on site at all times for the duration of the abatement project.
 5. Provide full facepiece supplied-air respirators operated in pressure demand mode equipped with air auxiliary and pressure self-contained breathing apparatus or HEPA egress filters if required for measured fiber concentrations.
- F. Maintain at each job site and post the following documents:
1. Copy of EGLE/MDLARA notification.
 2. Employee respiratory protection program.
 3. Michigan Right-To-Know poster.
 4. Material Safety Data Sheet locator.
 5. Company standard operating procedure.
 6. This specification Section.
 7. Material Safety Data Sheets for products used on job.
 8. CFR 1926.1101.
 9. CFR, Part 61 (NESHAP).
 10. The foreman's or supervisor's Contractor/Supervisor Accreditation Certificate.
 11. State of Michigan Accreditation Certificates and Medical Approval for each worker.
- G. Use the following engineering controls and work practices for all asbestos abatement operations, regardless of measured exposure levels:
1. Vacuum cleaners equipped with HEPA filters to collect all asbestos-containing dust and debris.
 2. Wet methods to control exposures during asbestos removal and clean-up, except where proven to be infeasible.
 3. Prompt clean-up and disposal of asbestos-contaminated wastes and debris in leak-proof containers.
 4. Establish a decontamination area, adjacent and connected to the regulated area, if the Project requires the removal of more than 25 lin. ft., or 10 sq. ft. of thermal systems insulation or surfacing ACM.
 5. Establish an equipment area adjacent to the regulated area if the Project requires the removal of less than 25 lin. ft. or 10 sq. ft. of thermal systems insulation or surfacing ACM.

- H. Do not use any of the following equipment or work practices during asbestos abatement operations, regardless of measured exposure levels:
1. High-speed abrasive disc saws not equipped with point-of-cut HEPA ventilation or HEPA filtered exhaust air enclosures.
 2. Blowing with compressed air to remove asbestos-containing materials.
 3. Dry sweeping, shoveling, or other dry methods to clean up asbestos-containing dust and debris.
 4. Employee rotation as a means of reducing employee exposure to asbestos.

3.2 ASBESTOS REMOVAL BY FULL ENCLOSURE METHOD

- A. Preparation of the Work Area: Complete the following preparation work prior to beginning asbestos removal operations:
1. Install critical barriers over each opening into the regulated area. The following requirements are in addition to, not in lieu of, other indicated surface and object protection requirements:
 1. Seal each opening between the work area and adjacent areas with not less than 2 layers of 4-mil polyethylene sheeting. Use an expanding-polyurethane foam gun to seal areas with large numbers of pipes, conduits and beams. Openings include, but are not necessarily limited to, windows, skylights, doorways, elevator hoistway openings, corridor entrances, drains, ducts, grills, grates, and diffusers.
 2. Seal intake and exhaust vents and duct seams within the regulated area with not less than 2 layers of 6-mil polyethylene sheeting.
 2. HVAC System Shutdown: Owner's maintenance personnel will shut down heating, cooling, and air conditioning systems when necessary. Coordinate scheduling with Owner's personnel and provide 72 hours notice to the Owner's Representative prior to planned shut-down.
 3. Protection of Surfaces and Objects: The following requirements are in addition to, not in lieu of, indicated work area sealing requirements. Cover the following surfaces and objects as follows:
 1. Protect all surfaces beneath all removal activity. Remove moveable objects from the work area, and cover fixed objects with impermeable dropcloths or plastic sheeting with edges securely sealed with tape.
 2. Cover open tanks with plywood or other solid material.
 3. Provide clean, fresh air to mechanical equipment, where required to maintain proper performance of equipment.
 4. Fully pre-clean all covered surfaces with amended water and a HEPA vacuum.
 5. Cover walls with not less than 2 layers of 4-mil polyethylene sheeting. Construct free-standing enclosure walls of not less than 6-mil polyethylene sheeting, with supports spaced not more than 3 feet o.c.

6. Cover floors with not less than 2 layers of 6-mil polyethylene sheeting. Avoid seams where possible. If seams are necessary, overlap not less than 12 inches and tape joints. Extend sheeting 12 inches up the side walls leaving no seams at the wall and floor joint. Immediately repair punctures and leaks, and clean up seepage.
4. Cleaning: Do not use cleaning methods that raise dust, such as sweeping or using vacuum cleaners not equipped with HEPA filters. Do not disturb asbestos materials during pre-cleaning phases.
 1. Treat water removed from the enclosure as asbestos contaminated waste. Fully seal floor drains.
5. Deactivate or install ground-fault circuit interrupters on each electrical circuit within the enclosure.
6. Construct a three-chambered decontamination facility that is adjacent to and connected to the regulated area, and that consists of a dirty room, a shower room, and a clean room in series. Construct decontamination facilities that are exposed to weather of lumber and exterior grade plywood. Secure the facility when not in use.
 - 1) Supply the equipment room with properly labeled, impermeable bags and containers for the containment and disposal of contaminated protective equipment.
 - 2) Construct showers that comply with the requirements of 29 CFR 1910.141 (d) (3), with the shower room adjacent to both the equipment room and the clean room. Filter water waste and shower water through a 5 micron filter, or remove water from site as asbestos waste.
 - 3) Equip the clean room with a locker or appropriate storage container for each employee.
7. Employee Decontamination Facilities: Comply with the following requirements:
 1. Access the work area only through an approved decontamination system. Lock or block other entrances. Seal emergency exits (for use during a fire or accident) with polyethylene sheeting and tape.
 2. Seal the waste pass-out, except during the removal of asbestos waste from the enclosure.
 3. Entrance To The Regulated Area: Employees shall enter the decontamination area through the clean room, remove and store clothing, and put on protective clothing and respiratory protection before passing through to the equipment room.
 4. Exit From The Regulated Area: Employees shall exit the regulated area by removing gross contamination and debris from their protective clothing. The clothing shall be removed and disposed of in the equipment room into labeled impermeable bags or containers. Employees shall then shower and enter the clean room before changing into street clothes.
8. Local Exhaust Ventilation: Maintain portable air filtration units with a HEPA filter in use during asbestos abatement operations requiring enclosures. Units shall conform to OSHA Standard 1926.1101, Appendix F, and shall be designed in accordance with 40 CFR 61, Subpart M, Section 61.153.

1. Exhaust directly to building exterior. Provide a backup portable air filtration unit at each removal enclosure. Start up ventilation units prior to initiating asbestos removal operations and run until the Owner's consultant has approved their shut-down after cleaning, sampling, visual inspection, and tear-down.
2. Direct air movement within the enclosure away from the employees' work area and toward the air filtration device.
3. Provide not less than 4 air changes per hour within the enclosure.
4. Within the enclosure, through the period of its use, maintain a pressure differential of not less than minus 0.02 water gage with respect to ambient conditions outside the enclosure.
9. Visually inspect the enclosure for breeches and smoke-test for leaks before work begins, and before the start of each work shift. Make all modifications to the enclosure prior to starting removal work.

B. Asbestos Removal Operations: Comply with the following requirements for asbestos removal operations:

1. Immediately preceding asbestos removal, apply a fine mist of amended water (water and wetting agent) to the asbestos materials and the surrounding area. Keep surrounding areas wet by spraying periodically with amended water. Maintain a high humidity environment to assist in fiber settling.
2. Remove asbestos material using two-person teams, on staging platforms, if necessary.
3. Remove the wet asbestos material as intact sections or components. Carefully lower the material to the floor or place directly into container. Never drop or throw asbestos material on the floor.
4. At working heights between 15 and 50 feet above the floor, place removed asbestos materials in containers at the elevated levels and lower to floor, or place onto inclined chutes or scaffolding for subsequent collection and placement into containers. Clean all debris at the completion of each workday.
5. Once the asbestos material is at ground level, pack in labeled 6-mil polyethylene bags, wet and, if appropriate, hold in drums prior to starting the next section.
6. Use 2 sealed and labeled 6-mil thick bags for storage and transportation of asbestos waste. Standing water shall be in each bag
7. Wrap large components removed intact in two layers of 6-mil polyethylene sheeting, label, and secure with tape for transport to the landfill. Comply with all wetting requirements.
8. Treat wires, hangers, steel bands, nails, screws, metal lath, tin sheeting, and similar sharp objects removed with asbestos material as asbestos waste. Place in drums for disposal.
9. Label containerized asbestos waste in accordance with OSHA, EPA, and Department of Transportation regulations, as follows:
 1. Label each container with OSHA label that contains the following information:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG
DISEASE HAZARD

2. Label each container with Owner's and Asbestos Abatement Firm's names and addresses as required by NESHAP. Owner's address is 301 E. Huron, Ann Arbor, MI 48104.
 3. Label each container with Class 9 Label required by DOT and identify waste as "RQ, Asbestos NA 2212."
 10. Prepare a complete and accurate NESHAP Waste Shipment Record (special manifest). Assure all information required by the U.S. Department of Transportation regulation is included. Under "special handling instructions" provide the required DOT identification information: RQ Asbestos 9, NA 2212, PG III.
 1. Do not remove waste from site until Owner's Representative has signed and verified the shipment record.
 11. Remove containerized asbestos waste daily from site, or store on site in a locked or secured location until ready for final disposal. Obtain approval of Owner's Representative of the location of disposal containers. Outdoor waste containers shall be fully enclosed and locked. Mark vehicles used to transport waste during the loading and unloading of asbestos waste with a visible sign, as required by NESHAP.
 12. Each container shall have excess water evident, or the asbestos waste shall be mixed in a slurry.
- C. Post-Removal Operation Requirements: After completion of asbestos removal and clean-up operations, comply with the following requirements:
1. The Asbestos Abatement Firm representative, in presence of Owner's consultant, shall inspect the entire work area for asbestos. Include decontamination unit, all plastic sheeting, seals over doorways, windows, and all other openings.
 1. If any suspect asbestos is found, repeat final cleaning operation, until the visual inspection is satisfactory to the Owner's consultant and the asbestos removal firm. Asbestos not scheduled to be removed as part of the project is exempt.
 2. Encapsulate all walls, floors, ceilings, other exposed surfaces, and decontamination facilities after completing the work area inspection.
 1. Remove the inner polyethylene barrier that is not integral to maintaining negative pressure in the enclosure at this time, and post-abatement air samples will be collected by Owner's consultant. Immediately clean any asbestos-containing materials observed behind these secondary barriers.
 3. When post-abatement fiber levels are greater than either 0.01 fiber/cc or background level, repeat cleanup operation until the area is below either 0.01 fibers/cc or background level.
 4. When the post-abatement samples are in compliance, and the Owner's consultant has completed the visual inspection, the enclosure shall be removed.
 1. Turn off HEPA filter exhaust units only after all barriers have been removed.

2. A final visual inspection will then be conducted by the Owner's consultant before the Contractor is released from the removal site. The final inspection will include tape, polyethylene sheet, debris, and equipment.

3.3 REMOVAL BY NEGATIVE PRESSURE GLOVE BAG SYSTEMS

- A. Equipment and Materials: Use the following equipment and materials for each glovebag procedure:
 1. Glovebags fabricated of 6-mil thick plastic without seams at the bottom.
 2. HEPA vacuum system attached to the glovebag and run continuously during operation.
 3. Protective suits and respirators.
 4. Plastic sheeting.
 5. Wetting agent.
 6. Encapsulant.
- B. Procedures: Comply with the following glovebag method requirements:
 1. Wrap loose and friable material adjacent to the removal area in 2 layers of 6-mil thick plastic, or otherwise render intact.
 2. Place plastic sheeting on the floor and equipment beneath each glovebag.
 3. Wet-wipe or HEPA vacuum dust and dirt from insulation to be removed.
 4. Install glovebags to completely cover the circumference of pipe or other structure where work is to be done.
 5. Smoke-test glovebags for leaks. Seal leaks prior to use.
 6. Insert and seal equipment that penetrates the bag (spray wands, vacuum nozzles) before insulation is disturbed.
 7. Wet the insulation to be removed before, during, and after the removal.
 8. Provide only bags capable of withstanding constant wetting and evacuation through a HEPA filtered device.
 9. During the performance of glovebag operations removing thermal systems, insulation, or surfacing materials, employ not less than 2 persons, working simultaneously, for each task.
 10. Wipe insulation residue from the pipe prior to application of an encapsulant.
 11. Spray the pipe and glovebag with an encapsulant before the bag is removed from the pipe.
 12. Seal exposed insulation ends with a heavy grade mastic.
 13. Follow glovebag manufacturer's instructions.
 14. Comply with requirements for asbestos waste disposal indicated in "Removal by Full Enclosure Method" of this Section.
- C. Unacceptable Conditions and Procedures and Conditions: In general, do not use the glovebag method in conditions that prevent safe completion of the removal process. The following procedures are not allowed during glovebag removal:
 1. Removing severely damaged insulation.
 2. Overloading glovebag.
 3. Sliding or moving insulation or glovebag along pipe.
 4. Squeezing bags to remove air.
 5. Placing glovebags on pipes or other surfaces that exceed 150 deg. F.

6. Using a glovebag more than once.

3.4 REMOVAL BY ENTIRE STRUCTURES METHOD

- A. The removal of entire structures without disturbing the asbestos is encouraged. An example is removal of asbestos covered pipe fittings by cutting out the entire pipe section scheduled for demolition.
 1. Obtain Owner's Representative's approval of removal by entire structures method prior to starting the project.
- B. Required Procedures: Comply with the following requirements applicable to removal of entire structures:
 1. Properly wet all asbestos materials before starting procedure. Ensure that material stays adequately wet throughout the entire procedure by continuing application of water as needed.
 2. Properly and fully wrap and label the structure before it is moved or cut out.
 3. Provide the equipment necessary for asbestos debris cleaning on site during the procedure.
 4. Comply with requirements for asbestos waste disposal indicated in "Removal by Enclosure Full Method" Article of this Section.

3.5 FIELD QUALITY CONTROL

- A. Pre-Notification of Owner's Representative: To permit adequate time to schedule air monitoring, notify the Owner's representative not less than 10 calendar days prior to planned start of all removal operations.
- B. Air Monitoring: Except for roofing removal work Owner will retain a professional independent industrial hygiene consultant to collect air samples and oversee the project to insure that compliance with applicable codes, regulations, and ordinances, including 29 CFR 1926.1101, NESHAP, and P.A. 135. The consultant will collect background, contiguous, work area, personal, and post-abatement air samples. Owner will provide one copy of the report to the Contractor if requested.
 1. If contiguous sampling indicates airborne fiber concentrations above 0.01 fibers/cc or background level, work will be stopped unless otherwise approved by Owner. Work may resume when the source of contamination has been corrected and the contamination has been cleaned to the satisfaction of the Owner.
 2. Glovebag, entire structures, and full enclosure clearance sampling will be by the aggressive PCM method when feasible. Enclosures must be fully dry before sampling.
 3. Roofing removal Contractors may provide their own air monitoring in compliance with roofing removal requirements of this Section.
- C. Inspection: If during the project, Owner's representative or Owner's consultant determines that work practices either violate applicable rules and regulations or endanger employees, the Contractor's on-site representative shall stop operations immediately and take corrective action. Cooperate fully with Owner's representative and Owner's consultant.

3.6 REMOVAL OF NON-FRIABLE ASBESTOS-CONTAINING MATERIALS

- A. Removal of Non-Friable Materials, General: For each type of non-friable asbestos-containing material indicated, comply with the following requirements:
1. Comply with requirements of Article 3.1 of this Section.
 2. Conduct non-friable material removal operations to prevent the material from becoming friable during the removal and disposal process. No visible emissions are permitted. If the material does not remain substantially intact, comply with the requirements for friable asbestos removal specified in Articles 3.2 of this Section (except roofing removal).
 3. Place impermeable drop cloths on surfaces beneath removal activity.
 4. Do not conduct asbestos removal unless the Owner's Consultant is present at the site and Owner has been notified. For roofing removal projects, notify Owner prior to start of work.
 5. Labeling Containerized Waste: Comply with the requirements of Article 3.2, paragraphs B.9.a. through c. of this Section.
- B. Removal of Resilient Flooring Materials:
1. Prior to removal, critical barriers shall be placed over openings to the regulated area. During removal, air in the regulated area shall be filtered through the use of air filtration device(s).
 2. Removal of floor tile with an infrared heat machine eliminates the critical barrier and negative pressure requirements.
 3. Prior to removal, clean floors of dirt and debris with vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (brush tools are not permitted). Control odors and fumes with engineering controls.
 4. Sanding the floor or related backing is not permitted.
 5. Mechanical chipping of vinyl floor tile is prohibited, except when performed in a negative pressure enclosure.
 6. Thoroughly wet vinyl floor tile with amended water. Use a slip scraper or equivalent to loosen the floor tile from the floor. Remove the floor tile in an intact state. Keep the floor tile wet throughout the removal and cleanup.
 1. Removal of floor tile using an infrared heat machine eliminates the wetting requirement.
 7. Remove vinyl sheet flooring by cutting while wetting the snip-point. Wet sheet flooring during delamination. Rip-up of resilient flooring material is not permitted.
 8. Clean resilient flooring of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent and allow time to dry. Dry sweeping is prohibited.
 9. Place the resilient flooring material and debris in an asbestos disposal bag. Seal the bag and place it in a properly labeled drum or polyspun bag. Comply with the disposal and labeling requirements of this Section.
- C. Asbestos Mastic Removal:
1. Clean the floor of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent.

2. Remove as much mastic as possible using a solvent. Control odors and fumes with engineering controls.
 3. Perform scraping of residual adhesive and backing using wet methods.
 4. After all debris is removed, thoroughly mop the floor and allow time to dry.
 5. If shot blasting is used to remove mastic, comply with requirements for friable asbestos removal specified in Article 3.2 of this Section.
 6. Properly dispose of all asbestos and solvent waste according to all applicable regulations, and comply with the disposal and labeling requirements of this Section.
- D. Asbestos-Containing Siding, Transite Panels, and Laboratory Counter Tops: Remove non-friable asbestos-containing siding, shingles, transite panels, and laboratory counter tops using the following technique:
1. Cutting, abrading, or breaking material is not permitted.
 2. Wet material with amended water prior to removal.
 3. Carefully disassemble material such a manner as to prevent breakage.
 4. Wrap and seal material in two layers 6-mil thick polyethylene, asbestos disposal bags, or equivalent. Seal bags or packages and properly label them with appropriate asbestos warning signs as indicated in "Removal of Non-Friable Materials, General" Article of this Section.
 5. Immediately lower to the ground unwrapped or unbagged materials via covered, dust-tight chute, crane, or hoist; or place in an impervious waste bag or wrap in plastic sheet and lower to the ground no later than the end of the work shift.
 6. Clean the floor of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent and allow time to dry.
 7. Dispose of asbestos waste in accordance requirements of this Section.
- E. Non-Friable Asbestos-Containing Roofing Materials: Non-friable asbestos-containing roofing materials may be removed in a non-friable state. This specification does not apply to removal of intact cements, coatings, or mastics. Remove non-friable asbestos-containing roofing materials in using the following technique:
1. Each employee who is likely to disturb or handle asbestos material shall have completed an 8-hour training class, and the project shall be supervised by a competent person who has completed the appropriate contractor/supervisor course.
 2. Isolate roof level heating and ventilation air intake sources within the regulated area and others that will be affected; or arrange for shut-down the affected ventilation system during removal operations. Acceptable isolation techniques include the following:
 1. Use 20-foot or larger buffer zones.
 2. Installation of HEPA filters over the air intakes.
 3. Erection of horizontal or vertical extensions that relocate the opening of the intake outside or above the regulated area.
 4. Covering the intake with plastic sheeting or other appropriate barrier.

3. Personal protective equipment (PPE), including disposable coveralls and NIOSH approved appropriate high efficiency particulate absolute (HEPA) respirators, shall be worn by personnel if the asbestos containing material is not removed in an intact state.
 4. Remove roofing material in an intact state.
 5. Use wet methods to remove materials that are not intact, or that are rendered not intact during removal, except where wet methods will create a safety hazard or are otherwise not feasible.
 6. Continuously apply a water mist to the blade of power cutting tools, unless a competent person determines that misting will substantially decrease worker safety.
 7. When removing roofing felts, collect the dust generated by power roof cutters with a HEPA-filtered dust collector; or immediately vacuum using a HEPA-filtered vacuum along the cut line. For smooth surfaces only, gently sweep wet dust generated from cutting operations, and carefully and completely wipe up the still-wet dust and debris.
 8. For removal and repair operations of intact roofing less than 25 sq. ft. in area, the use of wet methods or HEPA vacuuming is not required, provided manual methods do not render the material non-intact and no visible dust is created.
 9. Do not drop or throw to the ground asbestos-containing roofing material that has been removed. As soon as practicable, but not later than the end of the work shift, lower debris to ground either by passing or carrying by hand, or by lowering to the ground in a covered, dust-tight chute, crane or hoist.
 1. While on the roof, keep non-intact asbestos-containing materials wet; or seal in impermeable waste bags, or wrap in plastic sheeting.
 2. While on the roof, intact asbestos-containing material is not required to be kept wet, bagged, or wrapped.
 10. Upon being lowered to the ground, transfer unwrapped material to a closed receptacle in manner that precludes the dispersion of dust. Dispose of the material in an asbestos-accepting Type II landfill. Notify the landfill that the roofing material contains asbestos and provide waste shipment records to Owner within 35 days.
 11. For removal of intact pipeline asphaltic wrap or roof flashings that contain asbestos, engage a competent person to examine the material and determine whether the material is intact and likely to remain intact during removal. Remove the material using manual methods. Sanding, grinding, or other abrading operations are not permitted. Do not throw or drop materials to the ground. Lower the material in a covered, dust-tight chute, crane, or hoist. Remove debris from the roof at the end of the work shift.
- F. Non-Friable Asbestos Containing Exterior Sealant, Caulk, Putty and Window Glazing: Remove exterior non-friable asbestos-containing sealants, caulk, putty and window glazing using the following technique:
1. Any existing loose material shall be HEPA vacuumed prior to removal.
 2. The material shall be thoroughly wetted prior to and during its removal.

3. The material should be removed as intact as possible. Manual methods such as scraping or raking shall be used, unless power tools are used that are equipped with HEPA ventilation. If power tools are used comply with Article 3.2 (Asbestos Removal by Full Enclosure Method) of this Section.
4. Asbestos containing materials removed, shall be immediately bagged or wrapped and kept wetted until transferred to a closed receptacle.
5. The removal of windows and other whole building components without disturbing the asbestos is encouraged. An example of this would be removing a window with asbestos containing glazing or caulk by cutting out the entire window scheduled for demolition. Comply with Article 3.4 (Removal by Entire Structures Method) of this Section when removing entire building components containing asbestos.
6. If the material becomes friable during the abatement process, comply with the requirements for friable asbestos removal specified in Article 3.2 (Asbestos Removal by Full Enclosure Method) of this Section.
7. Dispose of all asbestos containing materials, including those removed by the entire structures method, per the requirements of this Section.

3.7 SCHEDULE OF ITEMS CONTAINING ASBESTOS

- A. Bidding Requirements: Comply with the following requirements related to bidding:
 1. Survey quantities provided are approximate. Bidders are required to field investigate as necessary and assume all responsibility to verify the work required and quantities involved for complete asbestos abatement.
 2. The building is open for field inspection by all bidders during the bidding period.
 3. A "pre-bid orientation meeting" will be conducted to familiarize prospective bidders with site conditions and provide for verification of marked and scheduled quantities, as applicable.
 4. The below materials have been survey and determined to contain asbestos

415 W. Washington

1. Air Cell Straight Pipe Insulation - 800 l.f.
2. Mag Pipe Insulation - 310 l.f.
3. Mud Fittings - 50 l.f.
4. 12" x 12" Floor tile and mastic - 300 s.f.
5. 9" x 9" Floor Tile (mastic is neg) - 2,000 s.f.
6. Boiler Insulation b/w boiler plates - 80 s.f.
7. Boiler cement refractory - 30 s.f.
8. Matic for white wood paneling - 700 s.f.

721 N. Main Street

1. 9" x 9" Floor Tile (mastic is neg) - 460 s.f.
2. Aircell Pipe Insulation - 1,700 l.f.
3. Door Caulk - 280 l.f.
4. Exterior Wall Joint Caulk - 1,500 l.f.
5. Exterior Transite Wall Panel - 200 s.f.
6. Transite Backing Tar Paper - 200 s.f.
7. Wall Joint Caulk - 50 l.f.
8. Fire Doors (Assumed) - 4 doors

**LIMITED BUILDING MATERIAL SURVEY OF
SUSPECT ASBESTOS CONTAINING MATERIALS
CITY OF ANN ARBOR - Vets Mem Park Ramada Structure
INSPECTION DATE - 04/15/2022**

HA #	SAMPLE#	ROOM# / LOCATION	FLOOR	DESCRIPTION	POS or NEG	QUANTITY
1	1	Roof	1	Black Skylight Sealant	NEG	
2	2	Roof	1	Chimney Sealant	NEG	
3	3	Exterior Doors and Windows	1	Door Sealant	NEG	
4	4	Kitchen Wall	1	White Kitchen Sink Sealant	NEG	
5	5	Roof	1	White Sink and Toilet	NEG	
6	6	Exterior	1	Roof Shingles and Paper	NEG	
7	7	Exterior	1	Door Insulation/Filler	NEG	
8	8	Kitchen	1	12x12 Floor Tile Tan and Speckled	NEG	
9	9	Kitchen	1	12x12 Floor Tile White and Speckled	NEG	
9	9A	Kitchen	1	Yellow Mastic	NEG	
10	10	Kitchen	1	12x12 Floor Tile Blue and Speckled	NEG	
10	10A	Kitchen	1	Brown Adhesive	NEG	
11	11	Exterior Walls		Brick and Mortar	NEG	
12	12	Exterior Walls	1	Bathroom Sign Mastic Black	NEG	
12A	12A	Exterior Walls	1	Bathroom Sign Tan adhesive	NEG	
13	13	Ceiling	1	Light Insulation	NEG	
14	14	Exterior Walls	1	CMU and Mortar	NEG	
15	15	Exterior Wall	1	Wall Mastic	NEG	
16	16	Interior Walls	1	Drywall and Joint Compound	NEG	
16	16A	Interior Walls	1	Joint Compound	NEG	
17	17	Exterior Walls	1	Vermiculite Insulation	POS	836 sf/ 418 cf

**LIMITED BUILDING MATERIAL SURVEY OF
SUSPECT LEAD CONTAINING PAINTS, COATINGS & VARNISHES**

BUILDING/PROJECT NAME - PROJECT # - Vets Mem Park Ramada Structure

INSPECTION DATE - 04/15/2022

GROUP#	SAMPLE#	ROOM#/ LOCATION	FLOOR	COMPONENT	DESCRIPTION/COLOR	SUBSTRATE	% LEAD	POS or NEG
1	1	Exterior		Paint	Composite	Metal	0.37	POS

**LIMITED BUILDING MATERIAL SURVEY OF
 POTENTIAL REGULATED BUILDING MATERIALS**
BUILDING/PROJECT NAME - PROJECT # - Vets Mem Park Ramada Structure
INSPECTION DATE - 04/15/2022

ROOM# / LOCATION	FLOOR	REGULATED BUILDING MATERIAL DESCRIPTION	LOCATION	QUANTIFICATION	COMMENTS
Exterior		HID Light Balast and Bulbs	Vets Memorial Park	6	
Kitchen/Garage		Flourescent Ballast and Bulbs	Vets Memorial Park	4	
Kitchen		Fridge	Vets Memorial Park	1	

**LIMITED BUILDING MATERIAL SURVEY OF
SUSPECT ASBESTOS CONTAINING MATERIALS
CITY OF ANN ARBOR - FARMERS MARKET BUILDING
INSPECTION DATE - 04/18/2024**

HA #	ROOM# / LOCATION	FLOOR	DESCRIPTION	POS or NEG	QUANTITY
1	WOMEN'S RESTROOM	1	CERAMIC TILE GROUT	NEGATIVE	-
1	MEN'S RESTROOM	1	CERAMIC TILE GROUT	NEGATIVE	-
2	WOMEN'S RESTROOM	1	GLUEPODS BEHIND MIRROR	NEGATIVE	-
2	MEN'S RESTROOM	1	GLUEPODS BEHIND MIRROR	NEGATIVE	-
3	WOMEN'S RESTROOM	1	CERAMIC TILE GLUE	NEGATIVE	-
3	MEN'S RESTROOM	1	CERAMIC TILE GLUE	NEGATIVE	-
4	WOMEN'S RESTROOM	1	DRYWALL, TAPE & MUD	NEGATIVE	-
4	MEN'S RESTROOM	1	DRYWALL, TAPE & MUD	NEGATIVE	-
5	WOMEN'S RESTROOM	1	WHITE SINK CAULK	NEGATIVE	-
5	MEN'S RESTROOM	1	WHITE SINK CAULK	NEGATIVE	-
4	MECHANICAL ROOM	1	DRYWALL, TAPE & MUD	NEGATIVE	-
4	OFFICE	1	DRYWALL, TAPE & MUD	NEGATIVE	-
6	OFFICE	1	CARPET MASTIC	NEGATIVE	-
7	OFFICE	1	4" BROWN COVE BASE	NEGATIVE	-
7A	OFFICE	1	MASTIC, 4" BROWN COVE BASE	NEGATIVE	-
8	HALLWAY	1	WHITE WINDOW GLAZE (UPPER WINDOWS)	NEGATIVE	-
4	HALLWAY	1	DRYWALL, TAPE & MUD	NEGATIVE	-
10	EXTERIOR	1	SILICON SEALATN	NEGATIVE	-
12	EXTERIOR	1	BROWN SEALANT AROUND MEMORIAL SIGN	NEGATIVE	-
9	EXTERIOR	1	WHITE DOOR FRAME CAULK	POSITIVE	40 L.F.
11	EXTERIOR	1	WHITE WINDOW FRAME CAULK	POSITIVE	50 L.F.
13	EXTERIOR	1	WHITE SEALANT AROUND ROOFING TRIM	POSITIVE	125 L.F.

**LIMITED BUILDING MATERIAL SURVEY OF
POTENTIAL REGULATED BUILDING MATERIALS
CITY OF ANN ARBOR - FARMERS MARKET BUILDING
INSPECTION DATE - 04/18/2024**

ROOM# / LOCATION	FLOOR	REGULATED BUILDING MATERIAL DESCRIPTION	QUANTIFICATION	COMMENTS
Janitor Closet	1	Computer Equipment	3	Rear Wall
Janitor Closet	1	LED Bulbs	1	Ceiling
Hall	1	Photovoltaic System Inverter	2	South Wall
Hall	1	LED Bulbs	2	Ceiling
Hall	1	E-Waste	1	NE Corner
Storage Closet	1	Lights and Chemicals	Several	South Wall
Men's Room	1	Flouescent Light/Ballast	2	Restroom
Men's Room	1	Entrance Light	1	Restroom
Men's Room	1	Thermostat	1	Restroom
Ladies Room	1	Flourescent Lights/Ballast	3	Restroom
Ladies Room	1	Entrance Light	1	Restroom
Ladies Room	1	Thermostat	1	Restroom
Office	1	LED Bulbs	10	Ceiling
Office	1	E-waste White Box	1	Ceiling
Office	1	Smoke Detector	1	SE Wall Corner
Office	1	Security Camera	1	SW Wall Corner
West Exterior Wall	1	LED Bulbs	2	Exterior
East Exterior Wall	1	LED Bulbs	1	Exterior
NE Corner - Roof	1	Solar Panels	1	Roof



May 20, 2024

Mr. Doug Forsyth
Safety Compliance Specialist
City of Ann Arbor
301 E. Huron 6th Floor
Ann Arbor, MI 48107

RE: Projects #CI0168/WS101

Dear Mr. Forsyth:

Enclosed please find the results of the bulk sample(s) collected by Nova Environmental, Inc., from 415 W Washington St., on May 13, 2024. The samples were analyzed utilizing Polarized Light Microscopy (PLM), according to the EPA 600/R-93/116 Method.

If you have any questions or if I can be of further assistance, please feel free to contact me at (734) 930-0995.

Sincerely,

NOVA ENVIRONMENTAL, INC.

Kary S. Amin
President

KSA/fw

Enclosures



BULK SAMPLING INFORMATION

This form provides information regarding the collection of bulk samples, in accordance with 40 CFR, part 763.85(b)(vii)(B).

1. **Date(s) of Bulk Sampling (Project #CI0690/WS101):**

May 13, 2024

2. **Name of Accredited Inspector(s) who collected Bulk Sample(s):**

Kary S. Amin / Russell Love

3. **Signature of Accredited Inspector(s) who collected Bulk Sample(s):**

A handwritten signature in blue ink, appearing to read "Kary S. Amin" followed by "Russell Love".

4. **State of Accreditation of Inspector(s) who collected Bulk Sample(s):**

Michigan / Michigan

5. **Accreditation Number of Accredited Inspector(s) who collected Bulk Sample(s):**



A979 / A60073

Note: Description of the manner used to determine sample locations:

All Samples are collected in accordance with 40 CFR, Part 763.86 and the EPA's Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials.

State of Michigan
 Department of Labor and Economic Opportunity
 Michigan Occupational Safety & Health Administration - Asbestos Program

Asbestos Inspector

Kareem "Kary" S. Amin
 c/o Nova Environmental, Inc.
 5300 Plymouth Road
 Ann Arbor, MI 48105

Accreditation Number **Expiration Date**
 A979 10/11/2024

DOB: 11/27/1960

This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.

Accreditation card is not valid if altered. 167173

State of Michigan
 Department of Labor and Economic Opportunity
 Michigan Occupational Safety & Health Administration - Asbestos Program

Asbestos Management Planner




Kareem "Kary" S. Amin
 c/o Nova Environmental, Inc.
 5300 Plymouth Road
 Ann Arbor, MI 48105

Accreditation Number **Expiration Date**
 A979 10/11/2024



DOB: 11/27/1960

This individual has satisfactorily met or exceeded the requirements of Section 206 of the Toxic Substances Control Act to be accredited in the above discipline.

Accreditation card is not valid if altered. 167174

State of Michigan
 Department of Labor and Economic Opportunity
 Michigan Occupational Safety & Health Administration - Asbestos Program

Asbestos Project Designer

Kareem "Kary" S. Amin
 c/o Nova Environmental, Inc.
 5300 Plymouth Road
 Ann Arbor, MI 48105

Accreditation Number **Expiration Date**
 A979 10/11/2024

DOB: 11/27/1960

This individual has satisfactorily met or exceeded the requirements of Section 206 of the Toxic Substances Control Act to be accredited in the above discipline.

Accreditation card is not valid if altered. 167172

State of Michigan
 Department of Labor and Economic Opportunity
 Michigan Occupational Safety & Health Administration - Asbestos Program

Asbestos Contractor/Supervisor




Kareem "Kary" S. Amin
 c/o Nova Environmental, Inc.
 5300 Plymouth Road
 Ann Arbor, MI 48105

Accreditation Number **Expiration Date**
 A979 10/11/2024


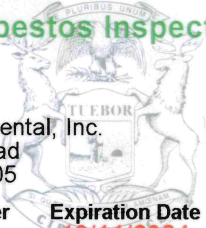

DOB: 11/27/1960

This individual has satisfactorily met or exceeded the requirements of Section 206 of the Toxic Substances Control Act to be accredited in the above discipline.

Accreditation card is not valid if altered. 167175

State of Michigan
Department of Labor and Economic Opportunity
Michigan Occupational Safety & Health Administration - Asbestos Program

Asbestos Inspector



Russell Love
c/o Nova Environmental, Inc.
5300 Plymouth Road
Ann Arbor, MI 48105

Accreditation Number
A60073

Expiration Date
10/11/2024

DOB: 06/22/1996

This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.

Accreditation card is not valid if altered. 167191



LABORATORY INFORMATION

1. **Name of Laboratory:**

PEL Laboratories

2. **Address of Laboratory:**

674 S Wagner Rd, Ann Arbor, MI 48103

3. **Name of Analyst:**

Ryan Shannon

4. **Signature of Analyst:**

See Attached Laboratory Results Sheet

5. **Date(s) of Analysis:**

May 14, 2024

6. **National Voluntary Laboratory Accreditation Program (NVLAP) Number:**

600205-0

7. **Applicable Requirements Statement:**

Samples are analyzed for asbestos by laboratories accredited under the National Voluntary Laboratory Accreditation Program (NVLAP), in accordance with 40 CFR, Part 763.87(a). This program is provided under the auspices of the United States Department of Commerce National Institute of Standards and Technology. Question #6 provides the NVLAP Accreditation Number for the laboratory, which performed the asbestos bulk analysis on the samples collected.



BULK SAMPLE RESULTS

CLIENT: Ann Arbor housing Commission

BUILDING: 415 W Washington St.

PROJECT #: CI0690/WS101

TYPE OF ANALYSIS: PLM

<u>SAMPLE I.D.</u>	<u>MATERIAL DESCRIPTION</u>	<u>CLASS</u>	<u>LOCATION OF SAMPLE</u>	<u>SAMPLE CONDITION</u>	<u>ASBESTOS DETECTED</u>	<u>%/TYPE</u>	<u>NON-ASBESTOS MATERIAL</u>
CI0690/WS101-001	Cementitious Coating	Misc.	High Bay Garage Exterior, South Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-002	Concrete – Vertical	Misc.	High Bay Garage Exterior, South Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-003	Red Brick	Misc.	South Garage Exterior, North Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-004	Red Brick Mortar	Misc.	South Garage Exterior, North Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-005	Light Brick	Misc.	South Garage Exterior Column, North Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-006	Light Brick Mortar	Misc.	South Garage Exterior Column, North Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-007	Window Glaze - White	Misc.	South Garage Exterior, North Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-008	Cinderblock	Misc.	High Bay Garage Exterior, Northeast Corner	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-009	Cinderblock Mortar	Misc.	High Bay Garage Exterior, Northeast Corner	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-010	Pliable Interior Window Glaze	Misc.	South Garage, West Windows	Non-Friable	None Detected	---	Refer to Analytical Report
**CI0690/WS101-011	Brittle Interior Window Glaze	Misc.	South Garage, West Windows	Non-Friable	Yes	<1% Chrysotile POINT COUNT: 0.75%	Refer to Analytical Report
CI0690/WS101-012	Interior Window Caulk	Misc.	High Bay Garage, West Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-013	Interior Window Glaze	Misc.	High Bay Garage, East Side	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-014	Cementitious Wall Material	Misc.	Carpentry Shop, South Wall	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-015	Construction Mastic for Wood Paneling	Misc.	First Floor Offices, North Side	Non-Friable	None Detected	---	Refer to Analytical Report

****samples containing <1% asbestos follow the OSHA Asbestos Construction Standard**



BULK SAMPLE RESULTS

CLIENT: Ann Arbor housing Commission

BUILDING: 415 W Washington St.

PROJECT #: CI0690/WS101

TYPE OF ANALYSIS: PLM

<u>SAMPLE I.D.</u>	<u>MATERIAL DESCRIPTION</u>	<u>CLASS</u>	<u>LOCATION OF SAMPLE</u>	<u>SAMPLE CONDITION</u>	<u>ASBESTOS DETECTED</u>	<u>%/TYPE</u>	<u>NON-ASBESTOS MATERIAL</u>
CI0690/WS101-016A-B	Interior Window Caulk – Cream	Misc.	Room 4, North Wall	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-017	Interior Window Glaze – Cream	Misc.	Room 4, North Wall	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-018	Wallboard Material	Misc.	Second Floor Hallway	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-019	Construction Mastic for White Wood Wall	Misc.	Room 10	Non-Friable	Yes	15% Chrysotile	Refer to Analytical Report
CI0690/WS101-020A-D	Built-Up Roof – Top Layer	Misc.	High Bay Garage, South Center	Non-Friable	Yes	35% Chrysotile	Refer to Analytical Report
CI0690/WS101-021A-C	Built-Up Roof – Middle Layer	Misc.	High Bay Garage, South Center	Non-Friable	Yes	30% Chrysotile	Refer to Analytical Report
CI0690/WS101-022A-C	Built-Up Roof – Bottom Layer	Misc.	High Bay Center, South Center	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-023	Perimeter Flashing	Misc.	High Bay Center, South Center	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-024A-B	Built-Up Roof – Top Layer	Misc.	Above Offices	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-025	Built-Up Roof – Bottom Layer	Misc.	Above Offices	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-026	Rubber Roof Membrane	Misc.	West Garage Roof	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-027A-B	Roof Insulation	Misc.	West Garage Roof	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-028	Built-Up Roof – Top Layer	Misc.	South Garage	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-029A-B	Built-Up Roof – Middle Layer	Misc.	South Garage	Non-Friable	None Detected	---	Refer to Analytical Report
CI0690/WS101-030	Built-Up Roof – Bottom Layer	Misc.	South Garage	Non-Friable	None Detected	---	Refer to Analytical Report

42 samples total – Refer to Analytical Report

****samples containing <1% asbestos follow the OSHA Asbestos Construction Standard**



600 South Wagner Road | Ann Arbor, MI 48103 | 877.220.3528

Client:	Nova Environmental	PEL Client No.:	24
Project Name:	CI0168/WS101	PEL Work Order No.:	22405050
Project Address:	City of Ann Arbor	Date Received:	5/13/2024
Project No.:	415 W. Washington	Date Analyzed:	5/14/2024
Methodology:	EPA-600/M4-82-020 and EPA-600/R-93-116	Received By:	Kaylee Guzi
T/A Time:	24-Hour	Analyzed By:	Ryan Shannon
Project Contact :	Kary Amin	Sample Date:	-

PEL Sample No.	Client Sample No.:	Composition	Color	Description	Asbestos Presence/Absence & Type (if present)	%	Non-Asbestos Fiber Type	%	Non-Fibrous Matrix Types		
1	CI0168/WS101-001	Homogeneous	Grey		No Asbestos Detected				Quartz		
2	CI0168/WS101-002	Homogeneous	Grey		No Asbestos Detected				Quartz		
3	CI0168/WS101-003	Homogeneous	Orange		No Asbestos Detected						
4	CI0168/WS101-004	Homogeneous	Tan		No Asbestos Detected				Quartz		
5	CI0168/WS101-005	Homogeneous	Brown		No Asbestos Detected				Quartz		
6	CI0168/WS101-006	Homogeneous	Grey		No Asbestos Detected				Quartz		
7	CI0168/WS101-007	Homogeneous	White		No Asbestos Detected						
8	CI0168/WS101-008	Homogeneous	Grey		No Asbestos Detected				Quartz		
9	CI0168/WS101-009	Homogeneous	Grey		No Asbestos Detected						
10	CI0168/WS101-010	Homogeneous	White		No Asbestos Detected						
11	CI0168/WS101-011	Homogeneous	Grey		Chrysotile - CVE Chrysotile - 400 PtCt	<1 0.75	Wollastonite	1			
12	CI0168/WS101-012	Homogeneous	Brown		No Asbestos Detected						
13	CI0168/WS101-013	Homogeneous	Grey		No Asbestos Detected		Wollastonite	<1			
14	CI0168/WS101-014	Homogeneous	Grey		No Asbestos Detected				Quartz		
15	CI0168/WS101-015	Homogeneous	Tan		No Asbestos Detected						
16A	CI0168/WS101-016A	Homogeneous	White	Plaster	No Asbestos Detected						
16B	CI0168/WS101-016B	Homogeneous	Brown	Adhesive	No Asbestos Detected						
17	CI0168/WS101-017	Homogeneous	Off-White		No Asbestos Detected						



600 South Wagner Road | Ann Arbor, MI 48103 | 877.220.3528

Client:	Nova Environmental	PEL Client No.:	24
Project Name:	CI0168/WS101	PEL Work Order No.:	22405050
Project Address:	City of Ann Arbor	Date Received:	5/13/2024
Project No.:	415 W. Washington	Date Analyzed:	5/14/2024
Methodology:	EPA-600/M4-82-020 and EPA-600/R-93-116	Received By:	Kaylee Guzi
T/A Time:	24-Hour	Analyzed By:	Ryan Shannon
Project Contact :	Kary Amin	Sample Date:	-

PEL Sample No.	Client Sample No.:	Composition	Color	Description	Asbestos Presence/Absence & Type (if present)	%	Non-Asbestos Fiber Type	%	Non-Fibrous Matrix Types	
18	CI0168/WS101-018	Homogeneous	Grey		No Asbestos Detected		Cellulose	98		
19	CI0168/WS101-019	Homogeneous	Brown		Chrysotile	15.00				
20A	CI0168/WS101-020A	Composite	Black	Roofing Top Layer	No Asbestos Detected		Synthetic Fiberglass	15 5		
20B	CI0168/WS101-020B	Composite	Black	Roofing Second Layer	No Asbestos Detected		Fiberglass	5		
20C	CI0168/WS101-020C	Homogeneous	Black	Tar Paper	Chrysotile	35.00	Cellulose	50		
20D	CI0168/WS101-020D	Homogeneous	Black	Tar	Chrysotile	4.00				
21A	CI0168/WS101-021A	Homogeneous	Black	Tar	No Asbestos Detected					
21B	CI0168/WS101-021B	Composite	Black	Built-Up Roofing	No Asbestos Detected		Cellulose	30		
21C	CI0168/WS101-021C	Homogeneous	Beige	Tar Paper	Chrysotile	30.00	Cellulose	55		
22A	CI0168/WS101-022A	Composite	Black	Roofing	No Asbestos Detected		Cellulose	15		
22B	CI0168/WS101-022B	Homogeneous	Black	Tar Paper	No Asbestos Detected		Cellulose	50		
22C	CI0168/WS101-022C	Homogeneous	Black	Tar	No Asbestos Detected					
23	CI0168/WS101-023	Homogeneous	Black		No Asbestos Detected		Cellulose	40		
24A	CI0168/WS101-024A	Composite	Black	Roofing	No Asbestos Detected		Cellulose	10		
24B	CI0168/WS101-024B	Homogeneous	Black	Tar	No Asbestos Detected		Cellulose	35		
25	CI0168/WS101-025	Composite	Black		No Asbestos Detected		Cellulose	30		
26	CI0168/WS101-026	Homogeneous	Beige		No Asbestos Detected					
27A	CI0168/WS101-027A	Homogeneous	Grey	Wrap	No Asbestos Detected		Fiberglass	50		



600 South Wagner Road | Ann Arbor, MI 48103 | 877.220.3528

Client:	Nova Environmental	PEL Client No.:	24
Project Name:	CI0168/WS101	PEL Work Order No.:	22405050
Project Address:	City of Ann Arbor	Date Received:	5/13/2024
Project No.:	415 W. Washington	Date Analyzed:	5/14/2024
Methodology:	EPA-600/M4-82-020 and EPA-600/R-93-116	Received By:	Kaylee Guzi
T/A Time:	24-Hour	Analyzed By:	Ryan Shannon
Project Contact :	Kary Amin	Sample Date:	-

PEL Sample No.	Client Sample No.:	Composition	Color	Description	Asbestos Presence/Absence & Type (if present)	%	Non-Asbestos Fiber Type	%	Non-Fibrous Matrix Types		
27B	CI0168/WS101-027B	Homogeneous	Brown	Foam	No Asbestos Detected						
28	CI0168/WS101-028	Composite	Black		No Asbestos Detected		Synthetic	5			
							Cellulose	5			
29A	CI0168/WS101-029A	Composite	Beige	Roofing	No Asbestos Detected		Cellulose	20			
29B	CI0168/WS101-029B	Homogeneous	Brown	Insulation	No Asbestos Detected		Cellulose	55	Perlite		
30	CI0168/WS101-030	Homogeneous	Beige		No Asbestos Detected		Cellulose	55	Perlite		

Analyst
 Signature:  _____ Date of Report : _____ 5/14/2024

Reviewer
 Signature:  _____ Date of Report : _____ 5/14/2024

PEL Laboratories is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) 600205-0, for performing polarized light microscopy (PLM) analyses under methods known as App. E to Sub. E of 40 CFR Part 762 and EPA/600/R-93/116. This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. These results relate only to the samples tested and must not be reproduced, except in full, without the approval of the laboratory. Although PLM analysis is commonly performed to determine the presence or absence of asbestos in building materials, the EPA methods acknowledge that analysis by PLM is subject to limitations and for certain materials, such as vermiculite and vinyl floor tiles, a more sophisticated methodology may be necessary.



April 22, 2013

Matthew Naud
City of Ann Arbor
Environmental Coordinator
301 E. Huron
Ann Arbor, Michigan 48107-8647

**Re: Hazardous Materials Survey
415 W. Washington Street, Ann Arbor, Michigan**

Dear Mr. Naud:

Tetra Tech is pleased to present the results of the Hazardous Materials Survey of the buildings located at 415 W. Washington Street in Ann Arbor, Michigan. The building consists of a U-shaped structure divided into 4 general areas as described below and depicted in **Figures 1 and 2**:

- 12,034 square-foot North Garage, which includes a 3,920 square-foot High-Bay Garage, Boiler Room, office space, restrooms, and a stairwell to second floor offices;
- 8,060 square-foot Second Floor Offices, which includes multiple offices, storage rooms, restrooms, a former paint booth, and a sign shop;
- 4,400 square-foot West Garage, which includes a radio repair area, mower repair area, and carpentry shop; and
- 9,921 square-foot South Garage, which includes a chemical storage area, salt storage area, and open sheds.

All areas of the facility were included in the assessment with the exception of the remediation shed and the roof. The assessment included the following components:

1. A comprehensive survey of potential asbestos-containing material (ACM);
2. A limited scope lead-based paint assessment; and
3. An inventory of other hazardous materials on the property that may require special handling if relocated, recycled, donated, or disposed.

Each component is described in detail in the following sections.

SURVEY OF POTENTIAL ASBESTOS-CONTAINING MATERIAL

Tetra Tech conducted a comprehensive survey of potential ACM and collected samples of each material to identify ACM at the facility for management options and logistical considerations for potential occupation, renovation, or demolition. Tetra Tech completed the ACM assessment pursuant to the United States Environmental Protection Agency (U.S. EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) promulgated under the Clean Air Act (40 CFR Part 61). The ACBM assessment included a visual inspection, sample collection, and laboratory analysis. Information presented in this report includes sample descriptions, sample locations, and material condition.

ASBESTOS CONTAINING MATERIALS REGULATION

Asbestos is a naturally occurring silicate mineral that is readily separated into fibers that are durable, heat resistant, and chemically stable. These fibers were added to a wide variety of building materials such as glues, binders, fabric, insulation, wallboard, roofing, vinyl, linoleum, cement, and plaster to enhance strength and provide fire resistivity. More than 3,000 products have been identified as containing asbestos. The U.S. EPA

defines ACM as any material comprised of 1% or more asbestos by volume as determined by polarized light microscopy (PLM).

Typically, potential ACMs are identified as homogeneous areas (HA) if they appear to be similar in terms of material, color, texture, age, and application within a single functional space.

Three categories of ACM are identified by the U.S. EPA and are used for building inspections. Each type of ACM has specific sampling requirements based on the amount of material.

- Surfacing materials (S): ACM that is sprayed or troweled on surfaces, including plaster and fireproofing insulation.
- Thermal System Insulation (TSI): Insulation to inhibit heat transfer on pipes, boilers, tanks, and ducts. TSI includes pipe wrap, block, batt and blanket insulation, cements and muds, and a variety of other materials.
- Miscellaneous Materials (MM): All other materials such as floor tile, ceiling tile, roofing materials, siding, fabrics, etc.

The U.S. EPA classifies ACM as either friable or non-friable. Friable materials can be crumbled, pulverized, or reduced to powder by hand when dry. Subpart M of the U.S. EPA NESHAP regulations specify the following as regulated ACM (RACM):

- Friable asbestos material
- Category I non-friable ACM that has become friable (including all resilient flooring coverings and roofing materials)
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or
- Category II non-friable ACM (such as asbestos cement products) that has a high probability of becoming friable or has become friable by the forces expected to act on the material in the course of demolition or renovation operations.

In accordance with federal and state air quality statutes, all RACM must be removed from any structure prior to demolition if the combined amount of RACM is at least 260 linear feet on pipes or 160 square feet on other facility components, and disposed of at a licensed Type II landfill. Only notification requirements must be met if the RACM quantities are below these thresholds. Non-friable ACMs may remain in place and disposed of as construction waste as long as it will not become friable during demolition.

ACM SAMPLING METHODS AND RESULTS

Mr. Daniel Sopoci of Tetra Tech completed the ACM survey on January 15 and 16, 2013. Mr. Sopoci is a Certified Hazardous Materials Manager (#15065), Registered Environmental Manager (#12295), and State of Michigan Asbestos Inspector (#A40698). Bulk samples of suspected ACM were collected to determine applicable requirements and guidelines of the U.S. EPA, Occupational Safety and Health Administration (OSHA), and State of Michigan during potential occupancy, renovation, or demolition work where materials containing asbestos are to be disturbed or removed. Sample collection was biased towards areas already disturbed.

Tetra Tech identified 51 homogenous areas (HA) and collected a total of 66 samples for analysis by PLM or transmission electron microscopy (TEM) using U.S. EPA Method 600/R-93/116. The laboratories used maintain current National Institute for Standards and Technology (NIST, formerly the National Bureau of Standards) National Voluntary Laboratory Accreditation Program (NVLAP) accreditation. The laboratory analyzed a total of 81 samples because some materials were multi-layered (i.e., tile and mastic) requiring

additional analysis. **Table 1** in **Attachment A** provides a summary of sample names, the type and description of materials, and analytical results. Photographs of identified ACM are also presented in **Attachment A**, as well as the laboratory report. Eleven (11) different materials contained asbestos above 1% as presented in the table below:

Summary of Asbestos Containing Materials

HA	HA Description and Location	Material Type ¹	Condition ²	F/NF ³	Footage/Area	Asbestos Result
HA-04	Pipe straight insulation consisting of corrugated paper material, observed in North Garage in the High Bay, office area, and restrooms. Also observed on the Second Floor offices near the elevator.	TSI	Good	F	800 LF	10%
HA-05	Pipe joint insulation associated with HA-04.	TSI	Good	F	50 LF	20%
HA-06	Pipe straight insulation consisting of fibrous material, observed in North Garage in the High Bay, restrooms, and overhead piping in Boiler Room (same as HA-23)	TSI	Good	F	250 LF	20%
HA-09	Mastic beneath 12" x 12" floor tile with brown streaks in northwest hallway of North Garage near offices	MM	Damaged	NF	300 ft ²	4%
HA-17	Reddish brown 9" x 9" floor tile in the Millet Office on the west side of the North Garage	MM	Damaged	NF/I	150 ft ²	3%
HA-19	White insulation material between boiler plates in Boiler Room	MM	Good	F	80 ft ²	13%
HA-21	Refractory cement observed inside boiler in Boiler Room	MM	Good	NF/II	30 ft ²	2%
HA-23	Pipe straight insulation consisting of fibrous material, observed in Boiler Room (same as HA-06)	TSI	Damaged	F	60 LF	12%
HA-33	Red 9" x 9" floor tile with tan streaks in Second Floor hallway	MM	Damaged	NF/I	1,500 ft ²	3%
HA-34	Dark red 9"x 9" floor tile with tan and red streaks in Second Floor offices	MM	Damaged	NF/I	250 ft ²	4%
HA-42	Gray 9"x 9" floor tile on landing of staircase, Second Floor offices	MM	Good	NF/I	100 ft ²	3%

- Notes: 1. TSI (thermal system insulation); MM (miscellaneous material)
 2. Condition – Good (no or little damage); Damaged (<10% if evenly distributed or <25% if localized area)
 3. F (friable); NF (non-friable); I (Category I non-friable); II (Category II non-friable)
 LF = Linear Feet

Matthew Naud

April 2013

Page 4 of 6

Several bituminous materials such as mastics, caulk and floor tile were found to be negative for asbestos content by PLM. A higher magnification using Transmission Light Microscopy (TEM) analytical methods can be completed to detect small or thin asbestos fibers in several non-friable bituminous materials. However, this analysis is not required under NESHAP or Michigan OSHA (MIOSHA).

ACM SURVEY CONCLUSIONS AND RECOMMENDATIONS

The ACM survey identified several friable ACMs, Category I non-friable ACMs, and one Category II ACM, which are considered regulated ACM (RACM). MIOSHA requires that a certified asbestos abatement contractor remove any RACM prior to renovation or demolition if they are in poor condition or are friable. Tetra Tech recommends that all RACM identified at the facility be removed prior to renovation or demolition, due to the relatively low quantity and ease of management in conjunction with identified RACM.

Tetra Tech also recommends that the floor tile mastic (HA-09) and associated floor tile be removed by a certified asbestos abatement contractor. Although the floor tile does not contain asbestos above 1%, the mastic will adhere to the floor tile as it is removed. Therefore, a certified asbestos abatement contractor must remove the overlying floor tile. Furthermore, removing the floor tile and mastic reduces training and monitoring requirements and management considerations of the renovation or demolition contractor.

The MDEQ and MIOSHA require completion of a *NOTIFICATION OF INTENT TO RENOVATE/DEMOLISH* form (form EQP 5661, MIOSHA-CSH 142) at least ten days in advance of any renovation or demolition activities. The notification is used to demonstrate the presence or absence of ACM. Tetra Tech recommends submitting the Notification to the NESHAP Asbestos Program and to MIOSHA.

There are no additional MDEQ or MIOSHA obligations or required analysis regarding asbestos.

Although not required under NESHAPs or MIOSHA, a higher magnification using TEM analytical methods can be used to determine a more accurate asbestos content in non-friable or bituminous materials. Detectable asbestos was not observed above 1% in several bituminous materials using PLM analytical methods. However, if analyzed using TEM, asbestos content above 1% may potentially be observed in these materials. Tetra Tech recommends that the demolition contractor is notified of the presence of these non-friable materials, and the results of PLM analysis.

LIMITED ASSESSMENT OF LEAD IN PAINT

Tetra Tech completed a limited scope lead in paint assessment to provide notification of the presence or probable absence of lead containing paint to the City, and is not intended to provide clearance or level of risk with regards to occupancy. Inspections intended to determine if housing is lead-safe for occupancy must be completed in accordance with the requirements of the U.S. Department of Housing and Urban Development (HUD, 24 CFR, Part 35) and Michigan Department of Community Health regulations (P.A. 368 of 1978, Sections 5451 to 5477, MCL 333.5451 to 333.5477), and be completed by a licensed lead-based paint inspector or risk assessor as defined by the U.S. EPA (40 CFR part 745). There is no regulatory requirement to conduct a lead based paint inspection as the building does not represent target housing or a child occupied facility.

LEAD IN PAINT REGULATION

Lead-based paint is defined by Toxic Substances Control Act (TSCA) as containing 0.5% lead by weight (The Lead Exposure Reduction Act, Section 401, Title IV, TSCA amendment, Public Law 102-550, 1992; Title X of the 1992 Housing and Community Development Act). The Consumer Product Safety Commission (CPSC) defines lead-containing paint as containing 0.06% lead by weight (Consumer Product Safety Act, CPSA 15 USC 2057-8, 1978t). However, any detectable quantity of lead in paint is considered lead-containing paint according to the OSHA Lead in Construction Standard 29 CFR 1926.62.

LEAD IN PAINT SAMPLING METHODS AND RESULTS

Field personnel collected nineteen (19) bulk paint chip samples in general accordance with TSCA Section 403 guidance document, published by the Office of Pollution Prevention and Toxics, U.S. EPA, June 3, 1998. **Table 2 in Attachment B** summarizes samples collected, colors, locations, condition, and results. Samples were submitted for lead analysis by U.S. EPA methods 0200.2-M and 6020A. Detection limits varied between 0.00010% and 0.011% dry weight. The laboratory report is included in **Attachment B**.

All paint chip samples contained some amount of lead, ranging from 0.0005% to 26%. Seven (7) paint chip samples exceed 0.5% and meet the definition of lead-based paint as defined by TSCA, which are presented below:

Summary of Lead-Based Paint

Sample	Paint Description and Location	Color	Condition¹	Lead Result
P-05	Second Floor Offices, on concrete floor in Room 17	Dark gray over light gray and brick red	Damaged	2.7%
P-10	Second Floor Offices, on walls in Room 26	Green	Damaged	3.1%
P-13	Second Floor Offices, on railing in front of elevator	Yellow	Damaged	7.0%
P-14	Second Floor Offices, Room 25	Gray over yellow	Damaged	3.8%
P-17	West Garage Bay Doors, on framing	Orange over yellow over gray	Severely Damaged	13%
P-18	West Garage Bay Doors, on concrete	Gray/Silver	Severely Damaged	26%
P-19	South Garage Bay Doors, on framing	Yellow/orange	Damaged	3.2%

Notes: 1. Condition – Good (no or little damage); Damaged (<10% if evenly distributed or <25% if localized area); Severely Damaged (>10%)

In several areas, layers of paint were observed during sampling. Due to the condition of each layer and the difficulty of collecting distinct samples of individual layers, paint chip samples were not exclusive to the outermost paint layer. Therefore, it cannot be determined if the lead detected is representative of a single layer or multiple layers. However, any paint disturbance is likely to impact all paint layers.

LEAD IN PAINT CONCLUSIONS AND RECOMMENDATIONS

The limited scope lead in paint assessment indicates that some paint in the building is above 0.5%, exceeding the applicable standard for occupancy or disclosure. However, as stated above, inspections intended to determine if housing is lead-safe for occupancy must be completed in accordance with the requirements of the U.S. Department of Housing and Urban Development (HUD, 24 CFR, Part 35) and Michigan Department of Community Health regulations (P.A. 368 of 1978, Sections 5451 to 5477, MCL 333.5451 to 333.5477), and be completed by a licensed lead-based paint inspector or risk assessor as defined by the U.S. EPA (40 CFR part 745).

All painted surfaces containing lead could result in elevated airborne lead levels when disturbed in the event of renovation or demolition. Therefore, the contractor should be notified of the lead content in paints so that all necessary precautions can be taken to comply with the provisions of the OSHA standard 29 CFR 1926.62 and

Michigan Lead Exposure Construction Standard, Part 603 during all paint disturbing activities. Specifically, contractors are required to make a determination if worker exposure to airborne lead during demolition practices exceeds the action level of 30 ug/m³ as a time weighted average. Until such a determination is conducted, the contractor must implement employee protective measures by providing respirators, personal protective clothing, change areas, hand washing facilities, biological monitoring, and training.

OTHER HAZARDOUS BUILDING MATERIALS

Tetra Tech completed an inventory of other hazardous materials on the property that may require special handling if relocated, recycled, donated, or disposed. The tables in **Attachment C** provide information regarding the following:

- Equipment containing chlorofluorocarbons (CFC) (**Table 3**);
- Devices containing radioactive materials (**Table 4**);
- Universal waste (**Table 5**); and
- Lab-pack materials such as cleaners, solvents, paints, and electronic wastes (**Table 6**).

There are regulatory requirements regarding the management of these materials if they are disturbed, relocated, or disposed during renovation or demolition of the buildings. Tetra Tech is pleased to provide further guidance for each material by request.

We appreciate the opportunity to continue to provide our services. Please call Daniel Sopoci at 734.213.4073 or e-mail at daniel.sopoci@tetrattech.com if you have any questions or comments regarding this report.

Sincerely,



Daniel Sopoci, CHMM
Senior Scientist

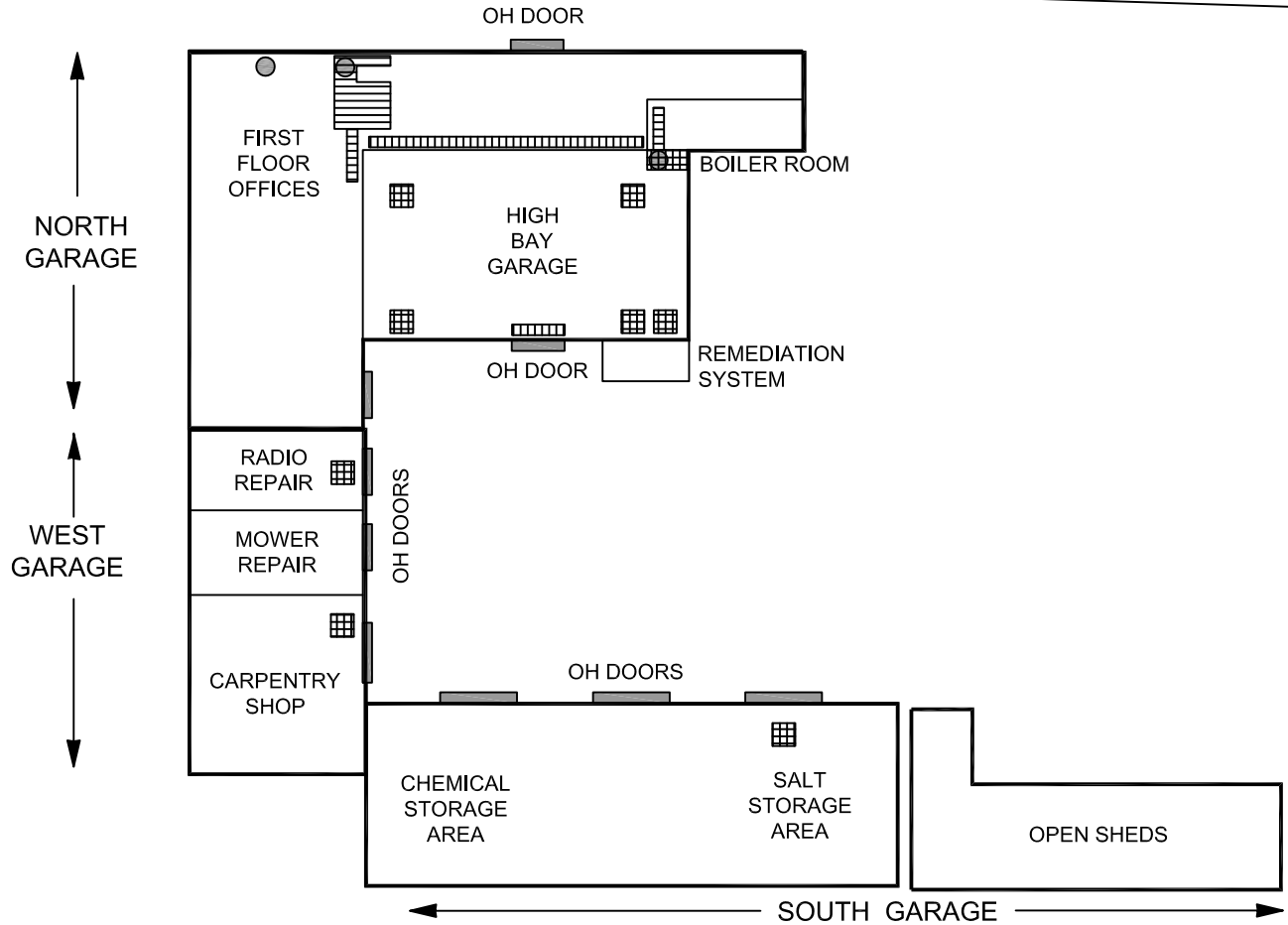


Patti McCall
Senior Geologist

Attachments: Figures
 Attachment A: Asbestos Information
 Attachment B: Lead Information
 Attachment C: Hazardous Building Materials Information

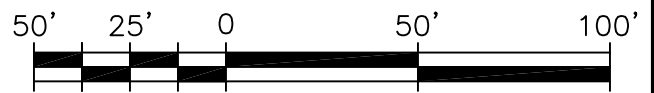
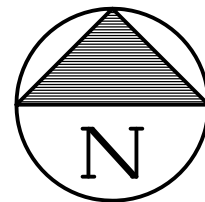
FIGURES

W. WASHINGTON STREET



LEGEND

- OVERHEAD DOOR
- FLOOR DRAIN
- ▤ TRENCH
- SUMP



SCALE: 1" = 50'



TETRA TECH

HAZARDOUS MATERIALS SURVEY
415 W. WASHINGTON STREET
ANN ARBOR, MICHIGAN 48103

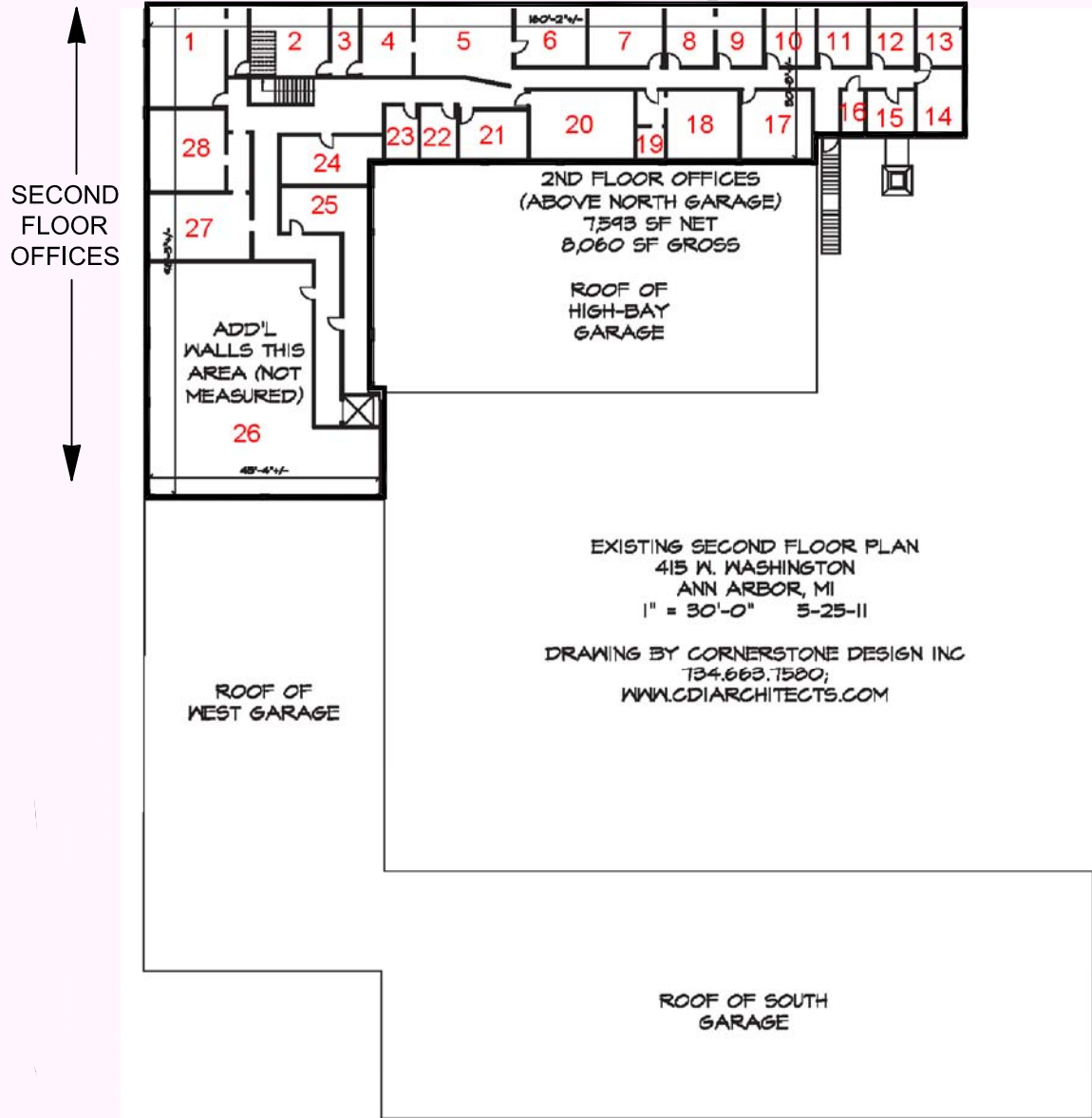
FIGURE

1

GROUND FLOOR BUILDING LAYOUT

DESIGNED: AGO

DATE: 4/18/13

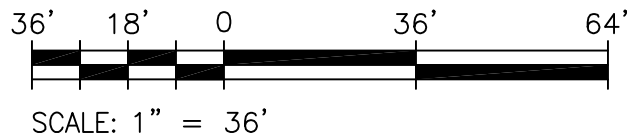
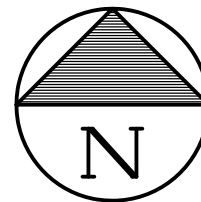


EXISTING SECOND FLOOR PLAN
 415 W. WASHINGTON
 ANN ARBOR, MI
 1" = 30'-0" 5-25-11
 DRAWING BY CORNERSTONE DESIGN INC
 734.663.7500;
 WWW.CDIARCHITECTS.COM

LEGEND

ROOM NUMBER

NOTE: ROOM 14 IS ALSO REFERRED TO AS MILLETT'S OFFICE.



HAZARDOUS MATERIALS SURVEY
 415 W. WASHINGTON STREET
 ANN ARBOR, MICHIGAN 48103

FIGURE

2

SECOND FLOOR BUILDING LAYOUT

DESIGNED: AGO

DATE: 4/18/13

ATTACHMENT A
ASBESTOS INFORMATION

Table 1
Suspect Asbestos-Containing Material Sample Summary
415 W. Washington Street
Ann Arbor, Michigan 48103

HA	HA Description:	HA Location	Material Type ¹	Condition ²	F/NF	Accessibility	Sample #	Sample Location	Layers?	Asbestos Result ^{4,5}	Footage/Area
HA-01	Window caulk	Exterior walls of North and West Garage	MM	S. Damaged	F	Moderate	HA-01-01	South wall of North Garage	N	NAD	--
							HA-01-02	North wall of North Garage	N	NAD	--
							HA-01-03	East wall of North Garage	N	NAD	--
HA-02	Cementous seal of door	South pedestrian door of North Garage	MM	Good	F	High	HA-02-01	South pedestrian door of North Garage	N	NAD	--
HA-03	Sheet rock	Window covering on east wall of North Garage	MM	Good	F	High	HA-03-01	East wall of North Garage	N	NAD	--
HA-04	Pipe straight insulation	Southernmost EW overhead pipe in North Garage, secondmost southern overhead EW pipe in North Garage; two NS pipe from North Garage to West Garage; also observed in first floor restrooms and second floor near elevator	TSI	Good	F	Moderate	HA-04-01A	East side of North Garage	White canvass wrap	NAD	--
							HA-04-01B		Corr. paper insulation	10%	800 LF
							HA-04-02A	East of North Garage	White canvass wrap	--	--
							HA-04-02B		Corr. paper insulation	--	--
							HA-04-03A	West side of North Garage	White canvass wrap	--	--
							HA-04-03B		Corr. paper insulation	--	--
HA-05	Pipe joint insulation	Joint fittings of HA-04	TSI	Good	F	Moderate	HA-05-01A	East side of North Garage	White fibrous mat'l	20%	50 LF
							HA-05-01B		Gray insulation	NAD	--
							HA-05-02A	Center of North Garage	White fibrous mat'l	--	--
							HA-05-02B		Gray insulation	--	--
							HA-05-03A	West side of North Garage	White fibrous mat'l	--	--
							HA-05-03B		Gray insulation	--	--
HA-06	Pipe straight insulation	Third most southern overhead EW pipe in North Garage; also observed in restrooms and overhead piping in boiler room (same as HA-23)	TSI	Good	F	Moderate	HA-06-01A	East side of North Garage	Canvas	NAD	--
							HA-06-01B		Insulation	20%	250 LF
							HA-06-02A	Center of North Garage	Canvas	--	--
							HA-06-02B		Insulation	--	--
							HA-06-03A	West side of North Garage	Canvas	--	--
							HA-06-03B		Insulation	--	--
HA-07	Drywall	NW enclosure in North Garage	MM	Damaged	F	High	HA-07-01	South wall of drywall in North Garage	N	NAD	--
HA-08	Drywall joint compound	NW enclosure in North Garage	MM	Good	F	High	HA-08-01	SE corner inside enclosure	N	NAD	--
HA-09	Floor tile - 12"x12", Tan with brown streaks	NW hallway tiles near offices	MM	Damaged	NF	High	HA-09-01A	NW corner hallway of north garage	Tile	NAD	--
							HA-09-01B		Mastic	4%	300 ft ²
HA-10	Ceiling tile - pinholes and fissures	NW corner office	MM	Damaged	F	Moderate	HA-10-01	NW corner office	N	NAD	--
HA-11	Cove moulding	NW corner office	MM	Good	NF	High	HA-11-01A	NW corner office - NE corner	Vinyl	NAD	--
							HA-11-01B		Mastic	NAD	--

Notes:

1. TSI (thermal system insulation); S (surfacing material); MM (miscellaneous material)

2. Condition – Good (no or little damage); Damaged (<10% if evenly distributed or <25% if a localized area); S.(significantly) damaged; potential to become damaged

3. NA = Not analyzed or not available

4. NAD = No Asbestos Detected

5. All detected asbestos was Chrysotile

6. N = No

7. Corr = Corrigated

8. F = Friable

9. NF = Non Friable

10. HA = Homogenous

11. LF = Linear Fee

12. ft² = square feet

Table 1
Suspect Asbestos-Containing Material Sample Summary
415 W. Washington Street
Ann Arbor, Michigan 48103

HA	HA Description:	HA Location	Material Type ¹	Condition ²	F/NF	Accessibility	Sample #	Sample Location	Layers?	Asbestos Result ^{4,5}	Footage/Area
HA-12	Carpet	NW corner office	MM	Damaged	NF	High	HA-12-01A	East side of room	Carpet	NAD	--
							HA-12-01B		Backing	NAD	--
HA-13	Cove moulding	Office south of NW corner office	MM	Good	NF	High	HA-13-01A	NW corner of room	Vinyl	NAD	--
							HA-13-01B		Mastic	NAD	--
HA-14	Carpet - green	Office south of NW corner office	MM	Damaged	NF	High	HA-14-01	East side of room	N	NAD	--
HA-15	Fiberboard - black	West of north garage - small room	MM	Good	F	High	HA-15-01	Board in small room	N	NAD	--
HA-16	Ceiling tile - 2'x4', large and small pinholes	Office on west wall, west of bay area	MM	Good	F	Moderate	HA-16-01	North side of room	N	NAD	--
HA-17	Floor tile - 9"x9", reddish brown	Millett office	MM	Damaged	NF	High	HA-17-01A	East side of room	Tile	3%	150 ft ²
							HA-17-01B		Mastic	NAD	--
HA-18	Fibrous insulation, yellow and black	Chemical storage room west of high bay area	MM	Good	F	Moderate	HA-18-01A	East wall of room	Yellow-black fibers	NAD	--
							HA-18-01B		Brown mastic	NAD	--
HA-19	Boiler insulation - white, fibrous	Boiler room	MM	Good	F	Low	HA-19-01	Between plates in boiler	N	13%	80 ft ²
HA-20	Fireproofing mortar	Boiler room	S	Good	F	Moderate	HA-20-01	5th easternmost beam	N	NAD	--
							HA-20-02	4th easternmost beam	N	NAD	--
							HA-20-03	5th easternmost beam	N	NAD	--
HA-21	Refractory cement	Boiler room	MM	Damaged	NF	Low	HA-21-01	Inside boiler	N	2%	30 ft ²
HA-22	Insulation - yellow	Boiler room	MM	Damaged	F	High	HA-22-01	Inside boiler	N	NAD	--
HA-23	Pipe straight insulation	Boiler room	TSI	Damaged	F	Moderate	HA-23-01	Eastern side of pipe	N	12%	60 LF
							HA-23-02	Center of pipe	N	--	--
							HA-23-03	Western side of pipe	N	--	--
HA-24	Vinyl - gray	Staircase	MM	Damaged	NF	High	HA-24-01A	Staircase cover	Vinyl	NAD	--
							HA-24-01B		Mastic	NAD	--
HA-25	Ceiling tile - 2'x4'	Second floor, Room 14	MM	Damaged	F	High	HA-25-01	Room 14	N	NAD	--
HA-26	Carpet - brown	Second floor, Room 14 and hallway	MM	Damaged	NF	High	HA-26-01	Room 14	N	NAD	--
HA-27	Window caulk - elastic	Second floor, Room 13	MM	Damaged	NF	High	HA-27-01	Room 13	N	NAD	--
HA-28	Window caulk - crumbly	Second floor windows	MM	Damaged	F	High	HA-28-01	Room 13	N	NAD	--
							HA-28-02	Window caulk, 2nd floor permit office	N	NAD	--
HA-29	Ceiling tiles - smooth	Second floor ceiling	MM	Damaged	F	High	HA-29-01	Room 13	N	NAD	--
HA-30	Pinboard	Second floor, Room 14 and hallway	MM	Damaged	F	High	HA-30-01	Room 14	N	NAD	--

Notes:

1. TSI (thermal system insulation); S (surfacing material); MM (miscellaneous material)

2. Condition – Good (no or little damage); Damaged (<10% if evenly distributed or <25% if a localized area); S.(significantly) damaged; potential to become damaged

3. NA = Not analyzed or not available

4. NAD = No Asbestos Detected

5. All detected asbestos was Chrysotile

6. N = No

7. Corr = Corrugated

8. F = Friable

9. NF = Non Friable

10. HA = Homogenous

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12. ft² = square feet

Table 1
Suspect Asbestos-Containing Material Sample Summary
415 W. Washington Street
Ann Arbor, Michigan 48103

HA	HA Description:	HA Location	Material Type ¹	Condition ²	F/NF	Accessibility	Sample #	Sample Location	Layers?	Asbestos Result ^{4,5}	Footage/Area
HA-31	Carpet - Lt. brown/gray	Second floor	MM	Damaged	NF	High	HA-31-01	Room 9	N	NAD	--
HA-32	Floor tile - 12"x12", taupe	Second floor, east wing	MM	Damaged	NF	High	HA-32-01A	Room 16	Tile	NAD	--
							HA-32-01B		Mastic	NAD	--
HA-33	Floor tile - 9"x9", red with tan streaks	Second floor hallway	MM	Damaged	NF	High	HA-33-01A	Second floor hallway	Tile	3%	1,500 ft ²
							HA-33-01B		Mastic	NAD	--
HA-34	Tile - 9"x9", dark red w/ tan and red streaks	Second floor offices	MM	Damaged	NF	High	HA-34-01A	Room 19	Tile	4%	250 ft ²
							HA-34-01B		Mastic	NAD	--
HA-35	Ceiling tile - 1'x1', large/med holes	Second floor	MM	Damaged	F	Moderate	HA-35-01	Room 7	N	NAD	--
HA-36	Window caulk - white, brittle	Second floor	MM	Damaged	F	High	HA-36-01	Room 6	N	NAD	--
HA-37	Window caulk - elastic, replacement windows	Second floor, Room 5	MM	Good	NF	High	HA-37-01	Room 5 - north side	N	NAD	--
HA-38	Panel flooring - 2'x2', vinyl surface	Second floor, Room 20	MM	Good	NF	High	HA-38-01	Floor tiles in CTCS	N	NAD	--
HA-39	Drywall	Second floor	MM	Damaged	F	High	HA-39-01	Room 3	N	NAD	--
							HA-39-02	Room 26	N	NAD	--
HA-40	Drywall joint compound	Second floor	MM	Good	F	High	HA-40-01	Room 5	N	NAD	--
							HA-40-02	Room 26	N	NAD	--
HA-41	Laminate surface	Second floor unisex restroom sink	MM	Good	NF	High	HA-41-01	Room 23	N	NAD	--
HA-42	Floor tile - 9"x9", gray	Second floor staircase landing	MM	Good	NF	High	HA-42-01A	Doorway east of stairs	Tile	3%	100 ft ²
							HA-42-01B		Mastic	NAD	--
HA-43	Ceiling tile - 2'x4', craters	Second floor, Room 28	MM	Damaged	F	High	HA-43-01	Room 28 - near doorway	N	NAD	--
HA-44	Ceiling tile - 4'x8', smooth	Second floor meeting room	MM	Damaged	F	Moderate	HA-44-01	Room 25 - corner near windows	N	NAD	--
HA-45	Ceiling tile - 4'x4'	Room off sign shop	MM	Good	F	Moderate	HA-45-01	Room 26 - corner near light	N	NAD	--
HA-46	Floor tile - 12"x12", square pattern	West offices of West Garage	MM	Damaged	NF	High	HA-46-01	West office floor	N	NAD	--
HA-47	Floor tile - 12"x12", tan with brown speckles	West offices of West Garage	MM	Damaged	NF	High	HA-47-01	West office floor	N	NAD	--
HA-48	Floor tile - 12"x12", tan with divots	West offices of West Garage	MM	Damaged	NF	High	HA-48-01A	West office floor	Tile	NAD	--
							HA-48-01B		Backing	NAD	--
HA-49	Floor tile - 12"x12", "sandstone"	West offices of West Garage	MM	Damaged	NF	High	HA-49-01	West office floor	N	NAD	--
HA-50	Cove moulding - black	West offices of West Garage	MM	Good	NF	High	HA-50-01	West office floor	N	NAD	--
HA-51	Ceiling tile - 2'x4', "popcorn" surface	Small office in West Garage	MM	Damaged	F	High	HA-51-01	Small office in west garage	N	NAD	--

Notes:

1. TSI (thermal system insulation); S (surfacing material); MM (miscellaneous material)

2. Condition – Good (no or little damage); Damaged (<10% if evenly distributed or <25% if a localized area); S.(significantly) damaged; potential to become damaged

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4. NAD = No Asbestos Detected

5. All detected asbestos was Chrysotile

6. N = No

7. Corr = Corrigated

8. F = Friable

9. NF = Non Friable

10. HA = Homogenous

11. LF = Linear Fee

12. ft² = square feet

Attachment A
Select Photographs of ACM
415 W. Washington Street
Ann Arbor, Michigan 48103



Photo #: 1	
Direction: Looking North	
Description: HA-04: Pipe straight insulation in North Garage area, observed in the High Bay, restrooms, and second floor near the elevator (outer wrap did not contain asbestos)	
10% Asbestos	
Sample HA-04-01	
Date: 1/15/2013	

Photo #: 2	
Direction: Looking North	
Description: HA-05: Pipe joint insulation (associated with HA-04) in North Garage area, observed in the High Bay, restrooms, and second floor near the elevator (outer wrap did not contain asbestos).	
20% Asbestos	
Sample HA-05-01	
Date: 1/15/2013	



Attachment A
Select Photographs of ACM
415 W. Washington Street
Ann Arbor, Michigan 48103



Photo#: 3	
Direction: Looking North	
Description: <u>HA-06:</u> Pipe straight insulation in North Garage area, observed in the High Bay, restrooms, and overhead piping boiler room (same as HA-23) (outer wrap did not contain asbestos).	
20% Asbestos	
Sample HA-06-01	
Date: 1/15/2013	

Photo #: 4	
Direction: NA	
Description: <u>HA-09:</u> Mastic beneath 12" x 12" tan floor tile with brown streaks in northwest hallway of North Garage near offices (floor tile did not contain asbestos).	
4% Asbestos (mastic layer only)	
Sample HA-09-01	
Date: 1/15/2013	



Attachment A
Select Photographs of ACM
415 W. Washington Street
Ann Arbor, Michigan 48103



Photo #: 5	
Direction: NA	
Description: <u>HA-17</u> : Reddish brown 9" x 9" floor tile in the Millet Office on the west side of the North Garage (mastic layer did not contain asbestos)	
3% Asbestos Sample HA-17-01	
Date: 1/15/2013	

Photo #: 6	
Direction: Looking West	
Description: <u>HA-19</u> : White insulation material between boiler plates, Boiler Room.	
13% Asbestos Sample HA-19-01	
Date: 1/15/2013	



Attachment A
Select Photographs of ACM
415 W. Washington Street
Ann Arbor, Michigan 48103



Photo #: 7	
Direction: Looking West	
Description: <u>HA-21</u> : Refractory cement inside boiler, Boiler Room, observed on upper and lower perimeter of boiler plates. 2% Asbestos Sample HA-21-01	
Date: 1/15/2013	

Photo #: 8	
Direction: Looking South	
Description: <u>HA-23</u> : Pipe straight insulation in Boiler Room of North Garage area (same as HA-06)(outer wrap did not contain asbestos). 12% Asbestos Sample HA-06-01	
Date: 1/15/2013	



Attachment A
Select Photographs of ACM
415 W. Washington Street
Ann Arbor, Michigan 48103




Photo #: 9	
Direction: NA	
Description: <u>HA-33</u> : Red 9" x 9" floor tile with tan streaks in Second Floor hallway (mastic layer did not contain asbestos)	
3% Asbestos	
Sample HA-33-01	
Date: 1/15/2013	

Photo #: 10	
Direction: NA	
Description: <u>HA-34</u> : Dark red 9" x 9" floor tile with tan and red streaks in Second Floor offices (mastic layer did not contain asbestos)	
4% Asbestos	
Sample HA-34-01	
Date: 1/15/2013	



Attachment A
Select Photographs of ACM
415 W. Washington Street
Ann Arbor, Michigan 48103

Photo #: 11	
Direction: NA	
Description: <u>HA-42</u> : Gray 9" x 9" floor tile on landing of staircase, Second Floor Offices (mastic layer did not contain asbestos) 3% Asbestos Sample HA-42-01	
Date: 1/16/2013	



BULK SAMPLE ANALYTICAL REPORT

Fibertec IHS Project #32713-1
NVLAP Accreditation #101510-0

Client Name: Tetra Tech
Project Name: 415 W. Washington, 117-1054011.03
Summary: 59 Submitted Bulk Samples, 81 Sample Layers Analyzed.

Date Sampled: 1/15-16/2013 Client P.O. #: N/A
Date Submitted: 1/21/2013 C.O.C. #: ACM01 - ACM07
Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos Containing Portion	Analyst
HA-01-01	HA-01-01	Gray tabular material, caulk.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
HA-01-02	HA-01-02	Gray tabular material, caulk.	NAD	Non-fibrous material 95% Cellulose fibers 5%	JAW
HA-01-03	HA-01-03	Gray tabular material, caulk.	NAD	Non-fibrous material 96% Cellulose fibers 4%	JAW
HA-02-01	HA-02-01	Gray cementitious material, cementitious seal of door.	NAD	Non-fibrous material >99% Cellulose fibers <1%	JAW
HA-03-01	HA-03-01	White tabular material, sheet rock.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
HA-04-01	HA-04-01	White fibrous material, pipe straight insulation. Layer 1 of 2.	Chrysotile 10%	Non-fibrous material 80% Cellulose fibers 10%	JAW
HA-04-02	HA-04-02	Brown fibrous material, pipe straight insulation. Layer 2 of 2.	NAD	Non-fibrous material 65% Cellulose fibers 35%	JAW

BULK SAMPLE ANALYTICAL REPORT

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Client Name: Tetra Tech
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Summary: 59 Submitted Bulk Samples, 81 Sample Layers Analyzed.

Date Sampled: 1/15-16/2013 Client P.O. #: N/A
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Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-05-01	HA-05-01	White fibrous material, pipe joint insulation. Layer 1 of 2.	Chrysotile 20%	Non-fibrous material 70% Cellulose fibers 10%	JAW
HA-05-01	HA-05-01	White tabular material, pipe joint insulation. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
HA-06-01	HA-06-01	White fibrous material, pipe straight insulation. Layer 1 of 2.	Chrysotile 20%	Non-fibrous material 80%	JAW
HA-06-01	HA-06-01	Brown fibrous material, pipe straight insulation. Layer 2 of 2.	NAD	Cellulose fibers 75% Non-fibrous material 25%	JAW
HA-07-01	HA-07-01	White tabular material, drywall. Layer 1 of 3.	NAD	Non-fibrous material 94% Cellulose fibers 6%	JAW
HA-07-01	HA-07-01	Brown fibrous material, drywall. Layer 2 of 3.	NAD	Cellulose fibers 86% Non-fibrous material 14%	JAW
HA-07-01	HA-07-01	Gray tabular material, drywall. Layer 3 of 3.	NAD	Non-fibrous material 95% Cellulose fibers 5%	JAW

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Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-08-01	HA-08-01	White rubbery material, drywall joint compound.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
HA-09-01	HA-09-01	Gray tabular material, floor tiles. Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-09-01	HA-09-01	Gray rubbery material, floor tiles mastic. Layer 2 of 2.	Chrysotile 4%	Non-fibrous material 96%	CBD
HA-10-01	HA-10-01	Gray fibrous material, 2' x 4' ceiling tile.	NAD	Cellulose fibers 70% Fibrous glass 20% Non-fibrous material 10%	CBD
HA-11-01	HA-11-01	Gray tabular material, cove molding. Layer 1 of 2.	NAD	Non-fibrous material 100%	CBD
HA-11-01	HA-11-01	Gray rubbery material, cove molding mastic. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-12-01	HA-12-01	Blue fibrous material, carpet. Layer 1 of 2.	NAD	Synthetic fibers 97% Non-fibrous material 3%	CBD

BULK SAMPLE ANALYTICAL REPORT

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Client Name: Tetra Tech
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Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-12-01	HA-12-01	Gray rubbery material, carpet backing. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-13-01	HA-13-01	Black tabular material, cove molding. Layer 1 of 2.	NAD	Non-fibrous material 100%	CBD
HA-13-01	HA-13-01	Gray rubbery material, cove molding mastic. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-14-01	HA-14-01	Brown fibrous material, green carpet. Layer 1 of 2.	NAD	Synthetic fibers 97% Non-fibrous material 3%	CBD
HA-14-01	HA-14-01	Tan rubbery material, green carpet backing. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-15-01	HA-15-01	Black fibrous material, black fiber board.	NAD	Non-fibrous material 60% Cellulose fibers 40%	JAW
HA-16-01	HA-16-01	White fibrous material, 2' x 4' ceiling tile.	NAD	Non-fibrous material 60% Cellulose fibers 30% Fibrous glass 10%	JAW

BULK SAMPLE ANALYTICAL REPORT

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Summary: 59 Submitted Bulk Samples, 81 Sample Layers Analyzed.

Date Sampled: 1/15-16/2013 Client P.O. #: N/A
Date Submitted: 1/21/2013 C.O.C. #: ACM01 - ACM07
Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-17-01	HA-17-01	Brown tabular material, 9" x 9" floor tile.	Chrysotile 3%	Non-fibrous material 97%	JAW
HA-17-01	HA-17-01	Black asphaltic material, 9" x 9" floor tile.	NAD	Non-fibrous material 96% Cellulose fibers 4%	JAW
HA-18-01	HA-18-01	Yellow and black fibrous material, fibrous insulation. Layer 1 of 2.	NAD	Cellulose fibers 75% Non-fibrous material 25%	JAW
HA-18-01	HA-18-01	Brown brittle material, fibrous insulation. Layer 2 of 2.	NAD	Non-fibrous material 85% Cellulose fibers 15%	JAW
HA-19-01	HA-19-01	Brown fibrous material, boiler insulation.	Chrysotile 13%	Non-fibrous material 87%	JAW
HA-20-01	HA-20-01	Gray granular material, fireproofing mortar.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-20-02	HA-20-02	Gray granular material, fireproofing mortar.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD

BULK SAMPLE ANALYTICAL REPORT

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Date Sampled: 1/15-16/2013 Client P.O. #: N/A
 Date Submitted: 1/21/2013 C.O.C. #: ACM01 - ACM07
 Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-20-03	HA-20-03	Gray granular material, fireproofing mortar.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-21-01	HA-21-01	Gray cementitious material, refractory cement.	Chrysotile 2%	Non-fibrous material 98%	JAW
HA-22-01	HA-22-01	Yellow fibrous material, yellow insulation.	NAD	Fibrous glass 92% Non-fibrous material 8%	JAW
HA-23-01	HA-23-01	White fibrous material, pipe straight insulation.	Chrysotile 12%	Non-fibrous material 88%	JAW
HA-24-01	HA-24-01	Gray tabular material, gray vinyl. Layer 1 of 2.	NAD	Non-fibrous material 100%	CBD
HA-24-01	HA-24-01	Tan rubbery material, gray vinyl mastic. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-25-01	HA-25-01	Gray fibrous material, 2' x 4' ceiling tile.	NAD	Cellulose fibers 70% Fibrous glass 20% Non-fibrous material 10%	CBD

BULK SAMPLE ANALYTICAL REPORT

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NVLAP Accreditation #101510-0

Client Name: Tetra Tech
 Project Name: 415 W. Washington, 117-1054011.03
 Summary: 59 Submitted Bulk Samples, 81 Sample Layers Analyzed.

Date Sampled: 1/15-16/2013 Client P.O. #: N/A
 Date Submitted: 1/21/2013 C.O.C. #: ACM01 - ACM07
 Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-26-01	HA-26-01	Brown fibrous material, brown carpet. Layer 1 of 2.	NAD	Synthetic fibers 97% Non-fibrous material 3%	CBD
HA-26-01	HA-26-01	Tan rubbery material, brown carpet backing. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-27-01	HA-27-01	Gray rubbery material, white caulk (elastic).	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-28-01	HA-28-01	Tan granular material, white caulk (crumbly). Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-28-02	HA-28-02	Tan granular material, white caulk (crumbly). Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-29-01	HA-29-01	Gray fibrous material, 2' x 4' ceiling tile.	NAD	Cellulose fibers 97% Non-fibrous material 3%	CBD
HA-30-01	HA-30-01	Gray fibrous material, pinboard.	NAD	Cellulose fibers 70% Fibrous glass 20% Non-fibrous material 10%	CBD

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Summary: 59 Submitted Bulk Samples, 81 Sample Layers Analyzed.

Date Sampled: 1/15-16/2013 Client P.O. #: N/A
Date Submitted: 1/21/2013 C.O.C. #: ACM01 - ACM07
Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-31-01	HA-31-01	Brown fibrous material, light brown/gray carpet. Layer 1 of 2.	NAD	Synthetic fibers 97% Non-fibrous material 3%	CBD
HA-31-01	HA-31-01	Tan rubbery material, light brown/gray carpet backing. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	CBD
HA-32-01	HA-32-01	Beige tabular material, 12" x 12" floor tile (taupe). Layer 1 of 2.	NAD	Non-fibrous material 96% Cellulose fibers 4%	JAW
HA-32-01	HA-32-01	Brown rubbery material, 12" x 12" floor tile (taupe) mastic. Layer 2 of 2.	NAD	Non-fibrous material 94% Cellulose fibers 6%	JAW
HA-33-01	HA-33-01	Red tabular material, 9" x 9" floor tile (red). Layer 1 of 2.	Chrysotile 3%	Non-fibrous material 97%	JAW
HA-33-01	HA-33-01	Black asphaltic material, 9" x 9" floor tile (red) mastic. Layer 2 of 2.	NAD	Non-fibrous material 92% Cellulose fibers 8%	JAW
HA-34-01	HA-34-01	Red tabular material, 9" x 9" floor tile (dark red). Layer 1 of 2.	Chrysotile 4%	Non-fibrous material 96%	JAW

BULK SAMPLE ANALYTICAL REPORT

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Client Name: Tetra Tech
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Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-34-01	HA-34-01	Black asphaltic material, 9" x 9" floor tile (dark red) mastic. Layer 2 of 2.	NAD	Non-fibrous material 95% Cellulose fibers 5%	JAW
HA-35-01	HA-35-01	Brown fibrous material, 1' x 1' ceiling tile.	NAD	Cellulose fibers 93% Non-fibrous material 7%	JAW
HA-36-01	HA-36-01	White tabular material, white caulk (brittle).	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
HA-37-01	HA-37-01	White rubbery material, white caulk (elastic).	NAD	Non-fibrous material >99% Cellulose fibers <1%	JAW
HA-38-01	HA-38-01	Brown fibrous material, 2' x 2' panel flooring. Layer 1 of 2.	NAD	Cellulose fibers 70% Non-fibrous material 30%	JAW
HA-38-01	HA-38-01	Brown brittle material, 2' x 2' panel flooring. Layer 2 of 2.	NAD	Non-fibrous material 94% Cellulose fibers 6%	JAW
HA-39-01	HA-39-01	White tabular material, drywall. Layer 1 of 2.	NAD	Non-fibrous material 93% Cellulose fibers 7%	JAW

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Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-39-01	HA-39-01	Brown fibrous material, drywall. Layer 2 of 2.	NAD	Cellulose fibers 90% Non-fibrous material 10%	JAW
HA-39-02	HA-39-02	White tabular material, drywall. Layer 1 of 2.	NAD	Non-fibrous material 95% Cellulose fibers 5%	JAW
HA-39-02	HA-39-02	Brown fibrous material, drywall. Layer 2 of 2.	NAD	Cellulose fibers 86% Non-fibrous material 14%	JAW
HA-40-01	HA-40-01	White brittle material, drywall joint compound. Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH
HA-40-02	HA-40-02	White brittle material, drywall joint compound. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH
HA-41-01	HA-41-01	Black fibrous material, laminate surface.	NAD	Cellulose fibers 100%	JH
HA-42-01	HA-42-01	Tan tabular material, 9" x 9" gray floor tile. Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH

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Date Analyzed: 1/23-25/2013

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-42-01	HA-42-01	Black fibrous material, 9" x 9" gray floor tile mastic. Layer 2 of 2.	Chrysotile 3%	Cellulose fibers 95% Non-fibrous material 2%	JH
HA-43-01	HA-43-01	Tan fibrous material, 2' x 4' ceiling tile.	NAD	Cellulose fibers 80% Fibrous glass 10% Non-fibrous material 10%	JH
HA-44-01	HA-44-01	Tan fibrous material, 4' x 8' ceiling tile.	NAD	Cellulose fibers 100%	JH
HA-45-01	HA-45-01	Tan fibrous material, 4' x 4' ceiling tile.	NAD	Cellulose fibers 100%	JH
HA-46-01	HA-46-01	Tan tabular material, 12" x 12" floor tile.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH
HA-47-01	HA-47-01	Tan tabular material, 12" x 12" floor tile (tan).	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH
HA-48-01	HA-48-01	Tan tabular material, 12" x 12" floor tile (tan-divets). Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH

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Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
HA-48-01	HA-48-01	Black rubbery material, 12" x 12" floor tile (tan-divets) mastic. Layer 2 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH
HA-49-01	HA-49-01	White granular material, 12" x 12" floor tiel (sandstone).	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH
HA-50-01	HA-50-01	Black rubbery material, cove molding.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JH
HA-51-01	HA-51-01	Yellow fibrous material, 2' x 4' ceiling tile (popcorn).	NAD	Fibrous glass 100%	JH

Comments

Bulk samples are analyzed using the USEPA Test Method EPA/600/R-93/116. The constituent percent reported represents an estimate of the area percent of the component. The test report relates only to items tested. This report is not intended to be used as a product endorsement by NVLAP or any agency of the U.S. Government. Fine fibers like those in floor tile may not be discernible by this method. This report shall not be reproduced, except in full, without the written approval of the laboratory. Individual sample layers are homogeneous, unless otherwise noted. Test items were received in acceptable condition. Revision 4.0 dated 12/8/2010.

If no asbestos was/were detected in the sample/samples the acronym NAD (no asbestos detected) will appear in the Asbestos Type column of the report.



Approved Signatory: _____

Date: 1/28/2013



Analytical Laboratory
 1914 Holloway Drive 8640 S. Mackinaw Trail
 Holt, MI 48842 Cadillac, MI 49601
 Phone: 517 699 0345 Phone: 231 775 8368
 Fax: 517 699 0388 Fax: 231 775 8584
 email: lab@fibertec.us

Industrial Hygiene Services, Inc.
 1914 Holloway Drive
 Holt, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0382
 email: asbestos@fibertec.us

Geoprobe
 11766 E. Grand River
 Brighton, MI 48116
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
 00001 ACM 01
 PAGE 1 of 7

Client Name: TETRA TECH				MATRICES (see separate case) # OF CONTAINERS PRESERVED (Y/N) PLM	PARAMETERS						Turnaround <input type="checkbox"/> 24 hour RUSH surcharge applies <input type="checkbox"/> 48 hour RUSH surcharge applies <input type="checkbox"/> 72 hour RUSH surcharge applies <input checked="" type="checkbox"/> Standard 3-7 day turn <input type="checkbox"/> Other specify	Matrix Code S Soil G4 Ground Water W Water S1 Surface Water A Air W4 Waste Water O4 <input checked="" type="checkbox"/> Other specify F Waste ACM
Contact Person: DANIEL SOPOCI												
Project Name/ Number: 415 W. Washington 117-1054011.03												
Purchase Order #												
Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor							Remarks	
o	1/15/13	9:00	HA-01-01	ceiling	X		N	X				
o	1/15/13	9:05	HA-01-02	ceiling	X		N	X				
o	1/15/13	9:10	HA-01-03	ceiling	X		N	X				
o	1/15/13	9:15	HA-02-01	concrete seal of door	X		N	X				
o	1/15/13	9:40	HA-05-01	sheet rock	X		N	X				
o	1/15/13	10:20	HA-04-01	pipe straight insulation	X		N	X			2 layers - canvas + pipe insulation	
o	1/15/13	11:10	HA-04-02	pipe straight insulation	X		N	X			2 layers - canvas + pipe insulation	
o	1/15/13	10:55	HA-04-03	pipe straight insulation	X		N	X			2 layers - canvas + pipe insulation	
o	1/15/13	10:15	HA-05-01	pipe joint insulation	X		N	X			2 layers - white plaster + pipe insulation	
o	1/15/13	10:20	HA-05-02	pipe joint insulation	X		N	X			2 layers - white plaster + pipe insulation	
Comments: PLEASE E-MAIL REPORT TO: daniel.sopoci@tetratech.com. DO NOT SEND PAPER REPORT. PLEASE USE FIRST-POSITIVE METHOD.												
Released By: Daniel Sopoci				Date/Time: 1/16/13 4:30	Received By: FedEx							
Released By:				Date/Time:	Received By:							
Released By:				Date/Time:	Received By Laboratory:							
LAB USE ONLY: Fibertec project number: Laboratory Tracking: Temperature at Receipt:												

COC Revision: April 2006

TERMS & CONDITIONS ON BACK



Analytical Laboratory
 1914 Holloway Drive
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 Phone: 517 699 0345
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 email: lab@fibertec.us

Industrial Hygiene Services, Inc
 1914 Holloway Drive
 Hall, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0382
 email: asbestos@fibertec.us

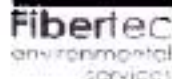
Geoprobe
 11756 E. Grand River
 Brighton, MI 48116
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
 0001 ACM 0 2
 PAGE 2 of 7

Client Name: TETRA TECH					MATRIX (per 40 CFR 191.16) # OF CONTAINERS PRESERVED (Y/N)	PCN	PARAMETERS							Turnaround	Matrix Code											
Contact Person: DANIEL SOPOCI							X	N	X						24-hour R20K (surcharge applies)	<input type="checkbox"/> Soil	<input type="checkbox"/> Ground water									
Project Name/ Number: 415 W. Washington 117-1054011.03															X	N	X							<input type="checkbox"/> 48-hour R20K (surcharge applies)	<input type="checkbox"/> Water	<input type="checkbox"/> Surface water
Purchase Order #																								X	N	X
					X	N	X									<input checked="" type="checkbox"/> Standard (3-5 day issue)	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Other: ACM								
																X	N	X								
Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor																						
	1/15/13	1030	HA-05-03	pipe joint insulation	X	N	X																			
	1/15/13	1125	HA-06-01	pipe straight insulation	X	N	X																			
	1/15/13	1130	HA-06-01	pipe straight insulation	X	N	X																			
	1/15/13	1135	HA-06-03	pipe straight insulation	X	N	X																			
	1/15/13	1150	HA-07-01	drywall	X	N	X																			
	1/15/13	1200	HA-08-01	dry wall joint compound	X	N	X																			
	1/15/13	1210	HA-09-01	Floor tiles	X	N	X																			
	1/15/13	1225	HA-10-01	2x4 ceiling tile	X	N	X																			
	1/15/13	1230	HA-11-01	COVE moulding	X	N	X																			
	1/15/13	1235	HA-12-01	carpet	X	N	X																			
Comments: PLEASE E-MAIL REPORT TO: daniel.sopoci@tetratech.com. DO NOT SEND PAPER REPORT. PLEASE USE FIRST POSITIVE METHOD.																										
Relinquished By: <i>[Signature]</i>					Date/Time: 1/16/13 4:30			Received By: Fed Ex																		
Relinquished By:					Date/Time:			Received By:																		
Relinquished By:					Date/Time:			Received By Laboratory:																		
LAB USE ONLY: Fibertec project number: Laboratory Tracking: Temperature of Receipt:																										

COC Revision April 2006

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Analytical Laboratory
 1914 Holloway Drive
 Holt, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0388
 email: lab@fibertec.us

Industrial Hygiene Services, Inc
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 Holt, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0382
 email: asbestos@fibertec.us

Geoprobe
 11766 E. Grand River
 Brighton, MI 48116
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
 00001 ACM04
 PAGE 4 of 7

Client Name: <u>TETRA TECH</u>				MATRIX (per container) # OF CONTAINERS PRESERVED (Y/N)	PRM	PARAMETERS										Turnaround		Matrix Code		
Contact Person: <u>DANIEL SOPCI</u>																	24 hour RUSH in-chARGE cost:	<input type="checkbox"/> SOH	<input type="checkbox"/> GW	Ground Water
Project Name/ Number: <u>415 W. Washington</u> <u>117-1054011.03</u>																	48 hour RUSH in-chARGE cost:	<input type="checkbox"/> SW	<input type="checkbox"/> SW	Surface Water
Purchase Order #																	72 hour RUSH in-chARGE cost:	<input type="checkbox"/> AW	<input type="checkbox"/> AW	Innate Water
Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor																
	1/15/13	1400	WA-21-01	refractory cement	X															
	1/15/13	1405	WA-22-01	yellow insulation?	X															
	1/15/13	1410	WA-23-01	PIPE straight insulation	X															
	1/15/13	1415	WA-24-01	pipe straight insulation	X															
	1/15/13	1420	WA-25-01	pipe straight insulation	X															
	1/15/13	1525	WA-26-01	gray vinyl	X														2 layers vinyl + mastic	
	1/15/13	1530	WA-27-01	2x4 ceiling tile	X															
	1/15/13	1535	WA-28-01	brown carpet	X														2 layers: Carpet + backing	
	1/15/13	1540	WA-29-01	white caulk (elastic)	X															
	1/15/13	1545	WA-30-01	white caulk (crumbly)	X															
Comment: <u>PLEASE E-MAIL REPORT TO: daniel.sopci@tetratech.com. NO PAPER REPORT.</u> <u>PLEASE USE FIRST-POSITIVE METHOD.</u>																				
Relinquished By: <u>Daniel Sopci</u>				Date/Time: <u>1/18/13 4:30</u>	Received By: <u>FedEx</u>															
Relinquished By:				Date/Time:	Received By:															
Relinquished By:				Date/Time:	Received By Laboratory:															
LAB USE ONLY: Fibertec project number: Laboratory Tracking: Temperature of Receipt:																				
TERMS & CONDITIONS ON BACK															DOC Revision: April 2006					



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 1914 Holloway Drive 8660 S. Mackinaw trail
 Holt, MI 48842 Cadillac, MI 49601
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 Fax: 517 699 0368 Fax: 231 775 8584
 email: lab@fibertec.us

Industrial Hygiene Services, Inc.
 1914 Holloway Drive
 Holt, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0368
 email: asbestos@fibertec.us

Geoprobe
 11766 E. Grand River
 Brighton, MI 48116
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
 00001 **ACMOS**
 PAGE **5** of **7**

Client Name: TETRA TECH				MATRIX (per test) (max 1000) # OF CONTAINERS PRESERVED (Y/N) ALM	PARAMETERS						Turnaround <input type="checkbox"/> 24 hour RUSH (surcharge applies) <input type="checkbox"/> 48 hour RUSH (surcharge applies) <input type="checkbox"/> 72 hour RUSH (surcharge applies) <input checked="" type="checkbox"/> Standard (5-7 business days) <input type="checkbox"/> Other (specify)	Matrix Code <input type="checkbox"/> Soil <input type="checkbox"/> Gnd Ground Water <input type="checkbox"/> Water <input type="checkbox"/> Sn Surface Water <input type="checkbox"/> Air <input type="checkbox"/> Inhabitable Water <input type="checkbox"/> ODE <input checked="" type="checkbox"/> Other (specify) ACM <input type="checkbox"/> Other							
Contact Person: DANIEL SOPOCI											Remarks								
Project Name/ Number: 415 W. Washington 117-1054011.03																			
Purchase Order #																			
Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor	MATRIX (per test) (max 1000)	# OF CONTAINERS	PRESERVED (Y/N)												
	1/16/13	9:00	1054011-01	white caulk (crumbly)	X	1	N	X											
	1/15/13	11:00	1054011-02	2x4 ceiling tile	X	1	N	X											
	1/15/13	11:10	1054011-03	Pinboard	X	1	N	X											
	1/15/13	11:30	1054011-04	lt. brown/gray carpet	X	1	N	X											
	1/15/13	11:35	1054011-05	12x12 floor tile (tange)	X	1	N	X											2 layers tile and mastic
	1/15/13	11:40	1054011-06	9x9 floor tile (red)	X	1	N	X											2 layers tile and mastic
	1/15/13	11:45	1054011-07	9x9 floor tile (dk red)	X	1	N	X											2 layers tile and mastic
	1/15/13	11:50	1054011-08	1x1 ceiling tile	X	1	N	X											
	1/16/13	8:40	1054011-09	white caulk (brittle)	X	1	N	X											
	1/16/13	8:45	1054011-10	white caulk (elastic)	X	1	N	X											
Comments: PLEASE SEND E-MAIL REPORT TO: daniel.sopoci@tetratech.com. NO PAPER REPORT PLEASE & TOP AT FIRST POSITIVE.																			
Relinquished By: <i>[Signature]</i>				Date/Time: 1/16/13 14:30	Received By: FedEx														
Relinquished By:				Date/Time:	Received By:														
Relinquished By:				Date/Time:	Received By (laboratory):														
LAB USE ONLY: Fibertec project number: Laboratory Tracking: Temperature at Receipt:																			

TERMS & CONDITIONS ON BACK

COC Revision: April, 2006



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Industrial Hygiene Services, Inc.
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 Phone: 517 699 0345
 Fax: 517 699 0362
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Geoprobe
 11746 E. Grand River
 Brighton, MI 48116
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
 00001 **ACMCK**
 PAGE **6** of **7**

Client Name: TETRA TECH				MATRIX (per 101.11) (per 101.12) # OF CONTAINERS PRESERVED (Y/N) PLM		PARAMETERS						Background		Matrix Code																					
Contact Person: DANIEL SOPOCI						<table border="1"> <tr><td>24 hour PCM purchase order:</td><td>1</td><td>Soil</td><td>Ign Ground Water</td></tr> <tr><td>48 hour PCM average tested:</td><td>0</td><td>Water</td><td>Sw. Sample Water</td></tr> <tr><td>72 hour PCM average tested:</td><td>0</td><td>Air</td><td>Wettable Water</td></tr> <tr><td>Granuloid (3-100 mic)</td><td><input checked="" type="checkbox"/></td><td>CM</td><td>Other: Soil</td></tr> <tr><td>Other: Specify _____</td><td></td><td>P</td><td>ACM</td></tr> </table>						24 hour PCM purchase order:	1	Soil	Ign Ground Water	48 hour PCM average tested:	0	Water	Sw. Sample Water	72 hour PCM average tested:	0	Air	Wettable Water	Granuloid (3-100 mic)	<input checked="" type="checkbox"/>	CM	Other: Soil	Other: Specify _____		P	ACM	Remarks			
24 hour PCM purchase order:	1	Soil	Ign Ground Water																																
48 hour PCM average tested:	0	Water	Sw. Sample Water																																
72 hour PCM average tested:	0	Air	Wettable Water																																
Granuloid (3-100 mic)	<input checked="" type="checkbox"/>	CM	Other: Soil																																
Other: Specify _____		P	ACM																																
Project Name/ Number: 415 W. Washington 117-1054011-03																																			
Purchase Order # _____																																			
Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor	MATRIX	# OF CONTAINERS	PRESERVED (Y/N)	PLM	PARAMETERS	PARAMETERS	PARAMETERS	PARAMETERS	PARAMETERS	PARAMETERS	PARAMETERS	PARAMETERS																			
	1/16/13	850	101-13-01	2x2 panel flooring	X	1	N	X																											
	1/16/13	905	101-13-01	drywall	X	1	N	X																											
	1/16/13	1000	101-13-01	drywall	X	1	N	X																											
	1/16/13	910	101-13-01	drywall joint compound	X	1	N	X																											
	1/16/13	1005	101-13-01	drywall joint compound	X	1	N	X																											
	1/16/13	915	101-13-01	laminated surface	X	1	N	X																											
	1/16/13	920	101-13-01	9x9 gray floor tile	X	1	N	X								2 layers tile and mastic																			
	1/16/13	925	101-13-01	2x4 ceiling tile	X	1	N	X																											
	1/16/13	940	101-13-01	4x3 ceiling tile	X	1	N	X																											
	1/16/13	950	101-13-01	4x4 ceiling tile	X	1	N	X																											
Comments: PLEASE E-MAIL REPORT TO daniel.sopoci@tetratech.com. NO PAPER REPORT. PLEASE STOP AT FIRST POSITIVE.																																			
Relinquished By: Daniel Sopoci				Date/Time: 1/16/13 4:30				Received By: FedEx																											
Relinquished By:				Date/Time:				Received By:																											
Relinquished By:				Date/Time:				Received By Laboratory:																											
LAB USE ONLY: Fibertec project number: Laboratory Tracking: Temperature at Receipt:																																			

TERMS & CONDITIONS ON BACK

COC Revision: April 2006



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 Phone: 517 699 0345
 Fax: 517 699 0382
 email: asbestos@fibertec.us

Geoprabe
 11764 E. Grand River
 Brighton, MI 48114
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
 00001 ACMC7
 PAGE 7 of 7

Client Name: <u>TETRA TECH</u>				MATRIX (matrix collection data)	# OF CONTAINERS	PRESERVED (Y/N)	PARAMETERS										Turnaround	Matrix Code		
Contact Person: <u>DANIEZ SOPOCI</u>																			24 hour RUSH Surcharge applies	S Soil <input type="checkbox"/> G Ground water
Project Name/ Number: <u>415 W. Washington</u> <u>117-105401 03</u>																			48 hour RUSH surcharge applies	V Water <input type="checkbox"/> S Surface water
Purchase Order #																			72 hour RUSH surcharge applies	A Air <input type="checkbox"/> W Waste water
LDD Sample #	Date	Time	Client Sample #	Client Sample Descriptor													Standard (if box checked)	C Cell <input checked="" type="checkbox"/> Other Leach		
																		P Price <u>ACM</u>		
Comments: <u>PLEASE E-MAIL REPORT TO: daniel.sopoci@tetratech.com NO PAPER PLEASE</u> <u>PLEASE STOP AT FIRST POSITIVE RESULT.</u>																				
Relinquished By: <u>[Signature]</u>					Date/Time: <u>1/16/13 4:30</u>			Received By: <u>FedEx</u>												
Relinquished By:					Date/Time:			Received By:												
Relinquished By:					Date/Time:			Received By Laboratory:												
LAB USE ONLY: Fibertec project number: Laboratory Tracking: Temperature at Receipt:																				

TERMS & CONDITIONS ON BACK

COC Revision, April 2006

ATTACHMENT B
LEAD INFORMATION

Table 2
Paint Chip Sample Summary
415 W. Washington Street
Ann Arbor, Michigan 48103

Sample #	Location	Color	Condition	Evidence of layers	Laboratory Lead Result (%)
P-01	Second floor, walls near stairwell	White w/ Green and Blue on back	Damaged	Y	0.049
P-02	Second floor, ceiling near stairwell	Taupe w/ Yellow on Back	Damaged	Y	0.011
P-03	Second floor, Room 14	White	Good	N	0.0009
P-04	Second floor, Room 2, 10	Black	Damaged	N	0.097
P-05	Second floor, concrete floor in Room 17	Dark Gray over Light Gray and Brick Red	Damaged	Y	2.7
P-06	Second floor, doorway trim of Room 22	Lt. Brown over Lt. Green	Good	Y	0.46
P-07	Second floor, windows and radiator trim in Room 5	Lt. Pink/Purple over Black	Good	Y	0.032
P-08	Second floor, doorway trim in Room 8	Green over Black	Good	Y	0.12
P-09	Second floor, walls in Room 27	Lt. Blue	Good	N	0.018
P-10	Second floor, walls in Room 26	Green	Damaged	N	3.1
P-11	Second floor, cabinets/doors/trim outside Room 26	Brown w/ White	Good	Y	0.0014
P-12	Second floor, floor in Room 25	Red	Good	N	0.088
P-13	Second floor, railing on front of elevator	Yellow	Damaged	N	7.0
P-14	Second floor, Room 25	Gray over Yellow	Damaged	Y	3.8
P-15	First floor, NW Corner Office	Pink	Good	N	0.0031
P-16	First floor, NW Corner Office	Dark Gray	Good	N	0.0005
P-17	West Garage Bay Doors	Orange over Yellow over Gray	S. damaged	Y	13
P-18	West Garage Bay Doors - Concrete	Gray/Silver	S. damaged	N	26
P-19	South Garage Bay Doors	Yellow/Orange	Damaged	Y	3.2

Notes: 1) NS = Not sampled for bulk analysis.
2) S. damaged = severely damaged
3) See Figure 2 for Room numbers.



Friday, January 25, 2013

Fibertec Project Number: 53993
Project Identification: 415 W. Washington /117-1054011.03
Submittal Date: 01/21/2013

Mr. Daniel Sopoci
Tetra Tech GEO
710 Avis Drive
Ann Arbor, MI 48108

Dear Mr. Sopoci,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note samples will be disposed of 30 days after reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

A handwritten signature in black ink, appearing to read "Daryl Strandbergh", written in a cursive style.

Daryl P. Strandbergh
Laboratory Director

DPS/kc
Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-001

Order: 53993
Page: 2 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: white-green-blue	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-01	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 11:55

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-001		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.049		%	0.00017	340	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-002

Order: 53993
Page: 3 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: taupe-yellow	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-02	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 11:57

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-002		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.011		%	0.00013	260	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-003

Order: 53993
Page: 4 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: white	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-03	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-003		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.00090		%	0.00010	58	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-004

Order: 53993
Page: 5 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: black	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-04	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:05

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-004		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.097		%	0.00016	310	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-005

Order: 53993
Page: 6 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: dk.gray-lt.gray	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-05	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-005		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	2.7		%	0.0017	3400	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-006

Order: 53993
Page: 7 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: lt. brown-lt. green	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-06	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:25

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)	Aliquot ID: 53993-006			Matrix: Other (Solid)		Analyst: JLP			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.46		%	0.00032	630	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-007

Order: 53993
Page: 8 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: lt. pink/purple-black	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-07	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-007		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.032		%	0.00017	340	01/22/13	PT13A22D	01/22/13	T213A22A

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-008

Order: 53993
Page: 9 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: green-black	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-08	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-008		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.12		%	0.00017	340	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-009

Order: 53993
Page: 10 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: lt. blue	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-09	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-009			Matrix: Other (Solid)	Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.018		%	0.00015	300	01/22/13	PT13A22D	01/22/13	T213A22A

1914 Holloway Drive	Holt, MI 48842	T: (517) 699-0345	F: (517) 699-0388
11766 E. Grand River	Brighton, MI 48116	T: (810) 220-3300	F: (810) 220-3311
8660 S. Mackinaw Trail	Cadillac, MI 49601	T: (231) 775-8368	F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-010

Order: 53993
Page: 11 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: green	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-10	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 12:55

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-010		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	3.1		%	0.0018	3600	01/22/13	PT13A22D	01/22/13	T213A22A

1914 Holloway Drive	Holt, MI 48842	T: (517) 699-0345	F: (517) 699-0388
11766 E. Grand River	Brighton, MI 48116	T: (810) 220-3300	F: (810) 220-3311
8660 S. Mackinaw Trail	Cadillac, MI 49601	T: (231) 775-8368	F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-011

Order: 53993
Page: 12 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: brown-white	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-11	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-011		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.0014		%	0.00010	66	01/22/13	PT13A22D	01/23/13	T213A23A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-012

Order: 53993
Page: 13 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: red	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-12	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:05

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-012		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.088		%	0.00036	720	01/22/13	PT13A22D	01/22/13	T213A22A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-013

Order: 53993
Page: 14 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: yellow	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-13	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-013			Matrix: Other (Solid)	Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	7.0		%	0.0039	7800	01/22/13	PT13A22D	01/23/13	T213A23A

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-014

Order: 53993
Page: 15 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: gray-yellow	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-14	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-014		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	3.8		%	0.0031	6300	01/22/13	PT13A22D	01/23/13	T213A23A

1914 Holloway Drive	Holt, MI 48842	T: (517) 699-0345	F: (517) 699-0388
11766 E. Grand River	Brighton, MI 48116	T: (810) 220-3300	F: (810) 220-3311
8660 S. Mackinaw Trail	Cadillac, MI 49601	T: (231) 775-8368	F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-015

Order: 53993
Page: 16 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: pink	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-15	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:25

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-015		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.0031		%	0.00013	260	01/22/13	PT13A22D	01/23/13	T213A23A

1914 Holloway Drive	Holt, MI 48842	T: (517) 699-0345	F: (517) 699-0388
11766 E. Grand River	Brighton, MI 48116	T: (810) 220-3300	F: (810) 220-3311
8660 S. Mackinaw Trail	Cadillac, MI 49601	T: (231) 775-8368	F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-016

Order: 53993
Page: 17 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: dk. Gray	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-16	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)	Aliquot ID: 53993-016	Matrix: Other (Solid)	Analyst: JLP						
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	0.00049		%	0.00026	510	01/22/13	PT13A22D	01/23/13	T213A23A

<i>1914 Holloway Drive</i>	<i>Holt, MI 48842</i>	<i>T: (517) 699-0345</i>	<i>F: (517) 699-0388</i>
<i>11766 E. Grand River</i>	<i>Brighton, MI 48116</i>	<i>T: (810) 220-3300</i>	<i>F: (810) 220-3311</i>
<i>8660 S. Mackinaw Trail</i>	<i>Cadillac, MI 49601</i>	<i>T: (231) 775-8368</i>	<i>F: (231) 775-8584</i>



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-017

Order: 53993
Page: 18 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: orange-yellow-gray	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-17	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:35

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-017			Matrix: Other (Solid)	Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	13		%	0.011	21000	01/22/13	PT13A22D	01/23/13	T213A23A

1914 Holloway Drive	Holt, MI 48842	T: (517) 699-0345	F: (517) 699-0388
11766 E. Grand River	Brighton, MI 48116	T: (810) 220-3300	F: (810) 220-3311
8660 S. Mackinaw Trail	Cadillac, MI 49601	T: (231) 775-8368	F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-018

Order: 53993
Page: 19 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: gray-silver	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-18	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-018			Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch	
1. Lead	26	E	%	0.011	23000	01/22/13	PT13A22D	01/23/13	T213A23A	

1914 Holloway Drive	Holt, MI 48842	T: (517) 699-0345	F: (517) 699-0388
11766 E. Grand River	Brighton, MI 48116	T: (810) 220-3300	F: (810) 220-3311
8660 S. Mackinaw Trail	Cadillac, MI 49601	T: (231) 775-8368	F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 53993
Laboratory Sample Number: 53993-019

Order: 53993
Page: 20 of 21
Date: 01/25/13

Client Identification: Tetra Tech GEO	Sample Description: yellow-orange	Chain of Custody: NA
Client Project Name: 415 W. Washington	Sample No: P-19	Collect Date: 01/16/13
Client Project No: 117-1054011.03	Sample Matrix: Other (Solid)	Collect Time: 13:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Lead Content (Paint) (EPA 0200.2-M/EPA 6020A)				Aliquot ID: 53993-019		Matrix: Other (Solid)		Analyst: JLP	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	3.2		%	0.0026	5300	01/22/13	PT13A22D	01/23/13	T213A23A

1914 Holloway Drive	Holt, MI 48842	T: (517) 699-0345	F: (517) 699-0388
11766 E. Grand River	Brighton, MI 48116	T: (810) 220-3300	F: (810) 220-3311
8660 S. Mackinaw Trail	Cadillac, MI 49601	T: (231) 775-8368	F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QA limits

Exception Summary:



1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory
 1914 Holloway Drive Holt, MI 48842
 Phone: 517 699 0345 Fax: 517 699 0388
 email: lab@fibertec.us

8660 S. Mackinaw Trail
 Cadillac, MI 49601
 Phone: 231 775 8368 Fax: 231 775 8584

Industrial Hygiene Services, Inc.
 1914 Holloway Drive Holt, MI 48842
 Phone: 517 699 0345 Fax: 517 699 0382
 email: asbestos@fibertec.us

Geoprobe
 11766 E. Grand River
 Brighton, MI 48116
 Phone: 810 220 3300 Fax: 810 220 3311

Chain of Custody #
 00001 **PAINT01**
 PAGE 1 of 2

Client Name: TETRA TECH					MATRIX (SEE RIGHT CORNER FOR CODE) # OF CONTAINERS PRESERVED (Y/N) Lead EPA609-4 Lead content	PARAMETERS										Turnaround	Matrix Code	
Contact Person: DANIEL SOPOCI						<input type="checkbox"/> 24 hour RUSH (surcharge applies) <input type="checkbox"/> 48 hour RUSH (surcharge applies) <input type="checkbox"/> 72 hour RUSH (surcharge applies) <input checked="" type="checkbox"/> Standard (5-7 bus. days) <input type="checkbox"/> Other: Specify _____											<input type="checkbox"/> S Soil <input type="checkbox"/> W Water <input type="checkbox"/> A Air <input type="checkbox"/> C Oil <input type="checkbox"/> P Wipe	<input type="checkbox"/> GW Ground Water <input type="checkbox"/> SW Surface Water <input type="checkbox"/> WW Waste Water <input checked="" type="checkbox"/> Other: Specify PAINT
Project Name/ Number: 415 W. Washington 117-105401.03																		
Purchase Order#																		
Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor												Remarks:		
	1/16/13	1155	P-01	P-01 white-green-blue	X	N	X											
	1/16/13	1157	P-02	taupe-yellow	X	N	X											
	1/16/13	1200	P-03	white	X	N	X											
	1/16/13	1205	P-04	black	X	N	X											
	1/16/13	1220	P-05	dk. gray - lt. gray	X	N	X											
	1/16/13	1225	P-06	lt. brown - lt. green	X	N	X											
	1/16/13	1230	P-07	lt. pink/purple - black	X	N	X											
	1/16/13	1240	P-08	green - black	X	N	X											
	1/16/13	1245	P-09	lt. blue	X	N	X											
	1/16/13	1255	P-10	green	X	N	X											
Comments: PLEASE E-MAIL REPORT TO: daniel.sopoci@tetratech.com, DO NOT SEND PAPER REPORT.																		
Relinquished By: <i>Daniel Sopoci</i>					Date/ Time: 1/16/13 4:30			Received By: FedEx										
Relinquished By: Fed ex					Date/ Time:			Received By: Fed ex										
Relinquished By: Fed ex					Date/ Time: 1-21-13			Received By Laboratory: <i>[Signature]</i>										
LAB USE ONLY: Fibertec project number: Laboratory Tracking: 1202p Temperature at Receipt:																		

TERMS & CONDITIONS ON BACK

53993



Analytical Laboratory
 1914 Holloway Drive 8660 S. Mackinaw Trail
 Holt, MI 48842 Cadillac, MI 49601
 Phone: 517 699 0345 Phone: 231 775 8368
 Fax: 517 699 0388 Fax: 231 775 8584
 email: lab@fibertec.us

Industrial Hygiene Services, Inc.
 1914 Holloway Drive
 Holt, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0382
 email: asbestos@fibertec.us

Geoprobe
 11766 E. Grand River
 Brighton, MI 48116
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
 00001 **PAINT02**
 PAGE 2 of 2

Client Name: TETRA TECH					MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PRESERVED (Y/N)	Lead EPA 6020A	Lead content	PARAMETERS										Turnaround	Matrix Code	
Contact Person: DANIEL SOPOCI																				24 hour RUSH (surcharge applies)	S Soil	GW Ground Water
Project Name/ Number: 415 W. WASHINGTON 117-1054011.03																				48 hour RUSH (surcharge applies)	W Water	SW Surface Water
Purchase Order#																				72 hour RUSH (surcharge applies)	A Air	WW Waste Water
Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor														<input checked="" type="checkbox"/> Standard (5-7 bus. days)	C Oil	<input checked="" type="checkbox"/> Other: Specify		
	1/16/13	1300	P-11	brown - white	X	N	X											<input type="checkbox"/> Other: Specify	P Wipe	PAINT		
	1/16/13	1305	P-12	red	X	N	X															
	1/16/13	1315	P-13	yellow	X	N	X															
	1/16/13	1320	P-14	gray - yellow	X	N	X															
	1/16/13	1325	P-15	pink	X	N	X															
	1/16/13	1330	P-16	dk. gray.	X	N	X															
	1/16/13	1335	P-17	orange - yellow - gray	X	N	X															
	1/16/13	1340	P-18	gray - silver	X	N	X															
	1/16/13	1345	P-19	yellow - orange	X	N	X															
	HTB																					
Comments: PLEASE E-MAIL REPORT TO: daniel.sopoci@tetratech.com. DO NOT SEND PAPER REPORT.																						
Relinquished By: Daniel Sopoci					Date/ Time: 1/16/13 4:30					Received By: Fed Ex												
Relinquished By: fed ex					Date/ Time: 1-21-13					Received By: fed ex												
Relinquished By: fed ex					Date/ Time: 1-21-13					Received By: [Signature]												
LAB USE ONLY:																						
Fibertec project number:					53993					1202pr												
Laboratory Tracking:																						
Temperature at Receipt:																						
COC Revision: April, 2006																						

TERMS & CONDITIONS ON BACK

ATTACHMENT C
HAZARDOUS BUILDING MATERIALS INFORMATION

Table 3
CFC-Containing Units
415 W. Washington Street
Ann Arbor, Michigan 48103

Revision Date: January 17, 2012
 Personnel completing this form: Daniel Sopoci, Tetra Tech

Item	Manufacturer	Model Number	Refrigerant	Capacity (oz.)	Location	Condition
Air Conditioner	Panasonic	CW-C121MU	R22	20.1	First floor, NW office	Poor
Air Conditioner	Whirlpool	ac-0052x	--	--	First floor, far NW corner	Poor
Air Conditioner	Amana	5P2MW	R22	14	First floor, Millett Room	Poor
Air Conditioner	Amana	--	--	--	Second Floor Offices	Poor
Air Conditioner	Whirlpool	ACM052XA0	R22	11.5	Second Floor Offices	Poor
Air Conditioner	Whirlpool	ACM052XA0	R22	11.5	Second Floor Offices	Poor
Air Conditioner	Amana	AAC081SRA	R22	25.8	Second Floor Offices	Poor
Air Conditioner	Goldstar	RS207Y3	R22	7.8	Second Floor Offices	Poor
Air Conditioner	Carrier	51ES114301	R22	21.5	Second Floor Offices	Poor
Air Conditioner	Whirlpool	--	--	--	Second Floor Offices	Poor
Air Conditioner	Whirlpool	X05002XD6	R22	11.25	Second Floor Offices	Poor
Air Conditioner	Whirlpool	ACQ082XD0	--	--	Second Floor Offices	Poor
Air Conditioner	Panasonic	CW-XC183EU	R22	22.6	Second Floor Offices	Poor
Air Conditioner	Whirlpool	ACM122XF0	R22	21	Second Floor Offices	Poor
Air Conditioner	Comfort-Aire	BE-93	R22	26.5	Second Floor Offices	Poor
Air Conditioner	Kelvinator	MH418F2SG	R22	39	Second Floor Offices	Poor
Air Conditioner	--	WV253HE	R22	40	Second Floor Offices	Poor
Air Conditioner	Sears	106-73045	R22	20	Second Floor Offices	Poor
Air Conditioner	Panasonic	CW-C200NU	R22	29.7	Second Floor Offices	Poor
Air Conditioner	Kenmore	2537215200	R22	37.5	First floor, Radio Offices	Poor
Air Conditioner	Panasonic	--	R22	small	First floor, Radio Offices	Poor
Air Conditioner	Fedders	A200SF2A	R22	9.25	Small office off West Garage	Poor
Drinking Fountain	Halsey Taylor	5300-2D-1	R12	3.25	Second Floor Offices	Poor
Drinking Fountain	--	--	--	--	First floor, under stairwell by North Garage	Poor
Refrigerator	Magic Chef	MCWC52B	R134a	3.52	First floor, Millett Room	Poor

Table 4
Radioactive Materials
415 W. Washington Street
Ann Arbor, Michigan 48103

Revision Date: January 17, 2012
 Personnel completing this form: Daniel Sopoci, Tetra Tech

Item	Manufacturer	Model Number	Isotope	Amount Present (uCurie)	Location	Condition
Smoke detector	Notifier	NK-24	²⁴¹ Am	0.8	Radio offices	Good
Smoke detector	Notifier	NK-24	²⁴¹ Am	0.8	Radio offices	Good
Smoke detector	Notifier	NK-24	²⁴¹ Am	0.8	Second floor, Room 20	Good
Smoke detector	Notifier	NK-24	²⁴¹ Am	0.8	Second floor, Room 20	Good
Smoke detector	Notifier	NK-24	²⁴¹ Am	0.8	Second floor, Room 27	Good
Refractory Cement	--	--	--	--	Boiler interior in Boiler Room	Good

Notes:

1. 241 Am = Americium 241.
2. See Figures 1 and 2 for locations and room numbers

Table 5
Universal Waste
415 W. Washington Street
Ann Arbor, Michigan 48103

Revision Date: January 17, 2012
 Personnel completing this form: Daniel Sopoci, Tetra Tech

Item	Quantity	Location	Condition
Fluorescent lights	200	Throughout Building	Good
Lightbulbs	200	West of High Bay area in North Garage above Millett Office	Good
Fluorescent lights/flood lights	150	Northwest corner of North Garage in storage room	Good
Thermostat	2	Northeast corner of North Garage	Good
Thermostat	1	Second floor, Room 9	Good
Thermostat	1	Second floor, Room 20	Good
Thermostat	1	Second floor, Room 26	Good

Notes:

1. See Figures 1 and 2 for locations and room numbers

Table 6
Lab-Pack Materials
415 W. Washington Street
Ann Arbor, Michigan 48103

Revision Date: January 17, 2012
 Personnel completing this form: Joy Gryzenia, Tetra Tech

Description	Quantity	Capacity and Container Type	Phase	Notes
Antifreeze	1	1-gallon container	Liquid	Full
Non-Butyl Industrial Detergent Complex	4	5-gallon bucket	Liquid	Open
De-Icing Salt	1040	50-lb bags	Solid	South Garage, east side
Portable Fuel storage tank, gasoline	1	100-gallon	Liquid	South Garage, east side
Unlabeled Drums	2	40-gallon Drum	Liquid	South Garage
Unlabeled Drums	3	55-gallon Drum	Liquid	South Garage, Near salt storage
Drum labeled "TACK"	1	55-gallon Drum	Liquid	South Garage, Near salt storage
Compound Cleaning Liquid	1	55-gallon Drum	Liquid	South Garage, west side
Urethane Primer and Epoxy Hardener	23	5-gallon	Liquid	Corrosive label
Epoxy Primer	20*	1-5 gallon buckets	Liquid	South Garage, west side
Paint cans/buckets	100	1-5-gallon buckets	Liquid	South Garage, west side
Elastomeric concrete aggregate and activators	17	1-5 gallon bucket	Liquid/Solid	South Garage, west side
Repair Mortar	6	50-lb bag	Solid	South Garage, west side
Urethane Deck Coating	2	55-gallon Drum	Liquid	South Garage, west side
Sealants, adhesives, floor finish	30-40	1-5 gallon containers	Liquid	South Garage, west side
Portable Fuel Tank	1	50-gallon	Liquid	South Garage, west side
Concrete	12	50-lb bags	Solid	South Garage, west side
Xylene	2	55-gallon Drum	Liquid	South Garage, west side
Hydraulic Fluid	5	5-gallon bucket	Liquid	South Garage, west side
Portable Fuel Tank	3	100-gallon	Liquid	South Garage, west side
Corrosion inhibitor	1	55-gallon Drum	Liquid	South Garage, west side
Propane Tanks	3	--	Gas	South Garage, west side

* = estimated quantity

ACM Sample #	FS#	FS Description	Homogeneous Area Description	HA#	F/NF	#	S/TSI/M	Sample Location	Asbestos Result
CI0168/*162- 001	26	Exterior	Exterior Brick	40	NF	1	M	Southwest Corner	None Detected
CI0168/*162- 002	26	Exterior	Exterior Brick Mortar	41	NF	2	M	Southwest Corner	None Detected
CI0168/*162- 003	26	Exterior	Exterior Wall Joint Caulk - Gray	38	NF	3	M	Left of Office Entrance	7% Chrysotile
CI0168/*162- 004	26	Exterior	Exterior Foam Window Covering	39	NF	4	M	Center of Garage	None Detected
CI0168/*162- 005A	26	Exterior	Exterior Wall Panel - Yellow	45	NF	5	M	Main Bay East Wall	17% Chrysotile
CI0168/*162- 005B	26	Exterior	Transite Backing Tar Paper	46	NF	5	M	Main Bay East Wall	<1% Chrysotile Point Count - 1.5%
CI0168/*162- 006	26	Exterior	Exterior Concrete	42	NF	6	S	Center, West Wall	None Detected
CI0168/*162- 007	26	Exterior	Exterior Door Caulk - White	44	NF	7	M	South Door, West Wall	None Detected
CI0168/*162- 008	26	Exterior	Exterior Garage Door Caulk - Gray	43	NF	8	M	Center, South Wall	None Detected
CI0168/*162- 009A	19	Conference Room	12"x12" Floor Tile - Brown Mottled	28	NF	9	M	Center of Room	2% Chrysotile Point Count - 0.25%
CI0168/*162- 009B	19	Conference Room	Mastic for 12"x12" Floor Tile - Brown Mottled	29	NF	9	M	Center of Room	None Detected
CI0168/*162- 010A	15	Locker Room	9"x9" Floor Tile - Tan w/Brown & White Streaks	23	NF	10	M	Center, North Wall	8% Chrysotile
CI0168/*162- 010B	15	Locker Room	Mastic for 9"x9" Floor Tile - Tan w/Brown & White Streaks	24	NF	10	M	Center, North Wall	None Detected
CI0168/*162- 011	16	Men's Restroom	Window Caulk - Gray	32	NF	11	M	Center of Window	None Detected
CI0168/*162- 012A	24	Street Division Office	4" Cove Base - Brown	36	NF	12	M	Northwest Corner	None Detected
CI0168/*162- 012B	24	Street Division Office	Mastic for 4" Cove Base - Brown	37	NF	12	M	Northwest Corner	None Detected
CI0168/*162- 013A	19	Conference Room	4" Cove Base - Black	30	NF	13	M	Southwest Corner	None Detected
CI0168/*162- 013B	19	Conference Room	Mastic for 4" Cove Base - Black	31	NF	13	M	Southwest Corner	None Detected
CI0168/*162- 014	20	Office 3	2'x4' Ceiling Panel - Dots & Small Gouges	35	F	14	M	Center of Room	None Detected
CI0168/*162- 015	19	Conference Room	Tectum Deck	22	NF	15	M	Center of Room	None Detected
CI0168/*162- 016	21	Office 4	2'x4' Ceiling Panel - Random Micro-Dots	34	F	16	M	Center of Room	None Detected
CI0168/*162- 017	18	Custodial Storage	2'x4' Ceiling Panel - Dots & Gouges	4	F	17	M	Center of Room	None Detected
CI0168/*162- 018	19	Conference Room	Aluminum Duct Insulation	33	F	18	M	Center of Room	None Detected
CI0168/*162- 019	19	Conference Room	Cinderblock	2	NF	19	M	Center, South Wall	None Detected
CI0168/*162- 020	19	Conference Room	Cinderblock Mortar	3	NF	20	M	Center, South Wall	None Detected
CI0168/*162- 021	19	Conference Room	Drywall	5	NF	21	M	Southeast Corner	None Detected
CI0168/*162- 022	19	Conference Room	Drywall Mud	6	NF	22	M	Southeast Corner	None Detected
CI0168/*162- 023	19	Conference Room	Drywall Tape	7	NF	23	M	Southeast Corner	None Detected
CI0168/*162- 024	11	Main Garage Bay	Window Glaze - White	25	NF	24	M	Center, North Wall	<1% Chrysotile Point Count - 0.50%
CI0168/*162- 025A	11	Main Garage Bay	Rough Plaster - Finish Coat	18	NF	25	S	Center, South Wall	None Detected
CI0168/*162- 025B	5	Office 2	Rough Plaster - Brown Coat	19	NF	25	S	Center, South Wall	None Detected
CI0168/*162- 026	13	Bay 2	Brick	26	NF	26	M	Northeast Corner	None Detected
CI0168/*162- 027	13	Bay 2	Brick Mortar	27	NF	27	M	Northeast Corner	None Detected
CI0168/*162- 028	11	Main Garage Bay	Door Caulk - Gray	21	NF	28	M	East Door	7% Chrysotile
CI0168/*162- 029	10	East Stairwell	Wall Joint Caulk - Gray	20	NF	29	M	Left of 2nd Floor Door	8% Chrysotile
CI0168/*162- 030	9	Storage	Fiberglass Pipe Insulation	16	F	30	TSI	Southeast Corner	None Detected
CI0168/*162- 031	4	Office 1	Floor Leveling Compound - White	15	NF	31	M	Doorway	None Detected
CI0168/*162- 032A	5	Office 2	12"x12" Floor Tile - Beige w/Brown & White Streaks	12	NF	32	M	Southwest Corner	2% Chrysotile Point Count - 0.50%
CI0168/*162- 032B	5	Office 2	Mastic for 12"x12" Floor Tile - Beige w/Brown & White Streaks	13	NF	32	M	Southwest Corner	None Detected
CI0168/*162- 033	5	Office 2	Carpet Glue - Yellow	14	NF	33	M	Southwest Corner	None Detected
CI0168/*162- 034	8	Parts Room	Aircell Pipe Insulation	9	F	34	TSI	Center, South Wall	75% Chrysotile
CI0168/*162- 035	13	Bay 2	Concrete	1	NF	35	S	Southwest Corner	None Detected
CI0168/*162- 036	7	Tool Room	Vibration Dampener - Black	17	NF	36	M	Center, South Wall	None Detected

City of Ann Arbor
721 N. Main
List by Homogeneous Area

FS#	FS Description	Homogeneous Area Description	HA#	Amount	Units	Asbestos
1	Employee Locker Room	Concrete	1	320	sq.ft.	Negative
2	Restroom	Concrete	1	48	sq.ft.	Negative
3	West Stairwell	Concrete	1	240	sq.ft.	Negative
4	Office 1	Concrete	1	120	sq.ft.	Negative
5	Office 2	Concrete	1	200	sq.ft.	Negative
6	Entrance/Reception	Concrete	1	320	sq.ft.	Negative
7	Tool Room	Concrete	1	144	sq.ft.	Negative
8	Parts Room	Concrete	1	288	sq.ft.	Negative
9	Storage	Concrete	1	900	sq.ft.	Negative
10	East Stairwell	Concrete	1	112	sq.ft.	Negative
11	Main Garage Bay	Concrete	1	5,000	sq.ft.	Negative
12	Fuel Bay	Concrete	1	450	sq.ft.	Negative
13	Bay 2	Concrete	1	5,625	sq.ft.	Negative
14	Boiler Room	Concrete	1	1,200	sq.ft.	Negative
15	Locker Room	Concrete	1	400	sq.ft.	Negative
16	Men's Restroom	Concrete	1	450	sq.ft.	Negative
17	Janitorial Closet	Concrete	1	20	sq.ft.	Negative
18	Custodial Storage	Concrete	1	96	sq.ft.	Negative
19	Conference Room	Concrete	1	660	sq.ft.	Negative
20	Office 3	Concrete	1	80	sq.ft.	Negative
21	Office 4	Concrete	1	112	sq.ft.	Negative
22	Office 5	Concrete	1	112	sq.ft.	Negative
23	Office 6	Concrete	1	112	sq.ft.	Negative
24	Street Division Office	Concrete	1	432	sq.ft.	Negative
25	Garage	Concrete	1	7,200	sq.ft.	Negative
1	Employee Locker Room	Cinderblock	2	900	sq.ft.	Negative
2	Restroom	Cinderblock	2	300	sq.ft.	Negative
3	West Stairwell	Cinderblock	2	500	sq.ft.	Negative
5	Office 2	Cinderblock	2	600	sq.ft.	Negative
6	Entrance/Reception	Cinderblock	2	500	sq.ft.	Negative
7	Tool Room	Cinderblock	2	100	sq.ft.	Negative
8	Parts Room	Cinderblock	2	520	sq.ft.	Negative
9	Storage	Cinderblock	2	1,400	sq.ft.	Negative
10	East Stairwell	Cinderblock	2	450	sq.ft.	Negative
11	Main Garage Bay	Cinderblock	2	3,000	sq.ft.	Negative
12	Fuel Bay	Cinderblock	2	900	sq.ft.	Negative

City of Ann Arbor
721 N. Main
List by Homogeneous Area

FS#	FS Description	Homogeneous Area Description	HA#	Amount	Units	Asbestos
13	Bay 2	Cinderblock	2	750 sq.ft.		Negative
15	Locker Room	Cinderblock	2	800 sq.ft.		Negative
16	Men's Restroom	Cinderblock	2	900 sq.ft.		Negative
17	Janitorial Closet	Cinderblock	2	200 sq.ft.		Negative
18	Custodial Storage	Cinderblock	2	500 sq.ft.		Negative
19	Conference Room	Cinderblock	2	800 sq.ft.		Negative
20	Office 3	Cinderblock	2	100 sq.ft.		Negative
21	Office 4	Cinderblock	2	80 sq.ft.		Negative
22	Office 5	Cinderblock	2	80 sq.ft.		Negative
23	Office 6	Cinderblock	2	80 sq.ft.		Negative
24	Street Division Office	Cinderblock	2	800 sq.ft.		Negative
25	Garage	Cinderblock	2	500 sq.ft.		Negative
1	Employee Locker Room	Cinderblock Mortar	3	900 sq.ft.		Negative
2	Restroom	Cinderblock Mortar	3	300 sq.ft.		Negative
3	West Stairwell	Cinderblock Mortar	3	500 sq.ft.		Negative
5	Office 2	Cinderblock Mortar	3	600 sq.ft.		Negative
6	Entrance/Reception	Cinderblock Mortar	3	500 sq.ft.		Negative
7	Tool Room	Cinderblock Mortar	3	100 sq.ft.		Negative
8	Parts Room	Cinderblock Mortar	3	520 sq.ft.		Negative
9	Storage	Cinderblock Mortar	3	1,400 sq.ft.		Negative
10	East Stairwell	Cinderblock Mortar	3	450 sq.ft.		Negative
11	Main Garage Bay	Cinderblock Mortar	3	3,000 sq.ft.		Negative
12	Fuel Bay	Cinderblock Mortar	3	900 sq.ft.		Negative
13	Bay 2	Cinderblock Mortar	3	750 sq.ft.		Negative
15	Locker Room	Cinderblock Mortar	3	800 sq.ft.		Negative
16	Men's Restroom	Cinderblock Mortar	3	900 sq.ft.		Negative
17	Janitorial Closet	Cinderblock Mortar	3	200 sq.ft.		Negative
18	Custodial Storage	Cinderblock Mortar	3	500 sq.ft.		Negative
19	Conference Room	Cinderblock Mortar	3	800 sq.ft.		Negative
20	Office 3	Cinderblock Mortar	3	100 sq.ft.		Negative
21	Office 4	Cinderblock Mortar	3	80 sq.ft.		Negative
22	Office 5	Cinderblock Mortar	3	80 sq.ft.		Negative
23	Office 6	Cinderblock Mortar	3	80 sq.ft.		Negative
24	Street Division Office	Cinderblock Mortar	3	800 sq.ft.		Negative
25	Garage	Cinderblock Mortar	3	500 sq.ft.		Negative
1	Employee Locker Room	2'x4' Ceiling Panel - Dots & Gouges	4	320 sq.ft.		Negative

City of Ann Arbor
721 N. Main
List by Homogeneous Area

FS#	FS Description	Homogeneous Area Description	HA#	Amount	Units	Asbestos
4	Office 1	2'x4' Ceiling Panel - Dots & Gouges	4	120	sq.ft.	Negative
5	Office 2	2'x4' Ceiling Panel - Dots & Gouges	4	200	sq.ft.	Negative
6	Entrance/Reception	2'x4' Ceiling Panel - Dots & Gouges	4	320	sq.ft.	Negative
18	Custodial Storage	2'x4' Ceiling Panel - Dots & Gouges	4	96	sq.ft.	Negative
19	Conference Room	2'x4' Ceiling Panel - Dots & Gouges	4	660	sq.ft.	Negative
22	Office 5	2'x4' Ceiling Panel - Dots & Gouges	4	112	sq.ft.	Negative
23	Office 6	2'x4' Ceiling Panel - Dots & Gouges	4	112	sq.ft.	Negative
3	West Stairwell	Drywall	5	100	sq.ft.	Negative
4	Office 1	Drywall	5	450	sq.ft.	Negative
6	Entrance/Reception	Drywall	5	800	sq.ft.	Negative
19	Conference Room	Drywall	5	300	sq.ft.	Negative
20	Office 3	Drywall	5	280	sq.ft.	Negative
21	Office 4	Drywall	5	320	sq.ft.	Negative
22	Office 5	Drywall	5	320	sq.ft.	Negative
23	Office 6	Drywall	5	320	sq.ft.	Negative
24	Street Division Office	Drywall	5	200	sq.ft.	Negative
25	Garage	Drywall	5	800	sq.ft.	Negative
3	West Stairwell	Drywall Mud	6	100	sq.ft.	Negative
4	Office 1	Drywall Mud	6	450	sq.ft.	Negative
6	Entrance/Reception	Drywall Mud	6	800	sq.ft.	Negative
19	Conference Room	Drywall Mud	6	300	sq.ft.	Negative
20	Office 3	Drywall Mud	6	280	sq.ft.	Negative
21	Office 4	Drywall Mud	6	320	sq.ft.	Negative
22	Office 5	Drywall Mud	6	320	sq.ft.	Negative
23	Office 6	Drywall Mud	6	320	sq.ft.	Negative
24	Street Division Office	Drywall Mud	6	200	sq.ft.	Negative
25	Garage	Drywall Mud	6	800	sq.ft.	Negative
3	West Stairwell	Drywall Tape	7	100	sq.ft.	Negative
4	Office 1	Drywall Tape	7	450	sq.ft.	Negative
6	Entrance/Reception	Drywall Tape	7	800	sq.ft.	Negative
19	Conference Room	Drywall Tape	7	300	sq.ft.	Negative
20	Office 3	Drywall Tape	7	280	sq.ft.	Negative
21	Office 4	Drywall Tape	7	320	sq.ft.	Negative
22	Office 5	Drywall Tape	7	320	sq.ft.	Negative
23	Office 6	Drywall Tape	7	320	sq.ft.	Negative
24	Street Division Office	Drywall Tape	7	200	sq.ft.	Negative

City of Ann Arbor
721 N. Main
List by Homogeneous Area

FS#	FS Description	Homogeneous Area Description	HA#	Amount	Units	Asbestos
25	Garage	Drywall Tape	7	800	sq.ft.	Negative
3	West Stairwell	Aircell Pipe Insulation	9	30	ln.ft.	Positive
4	Office 1	Aircell Pipe Insulation	9	40	ln.ft.	Positive
6	Entrance/Reception	Aircell Pipe Insulation	9	30	ln.ft.	Positive
7	Tool Room	Aircell Pipe Insulation	9	25	ln.ft.	Positive
8	Parts Room	Aircell Pipe Insulation	9	60	ln.ft.	Positive
9	Storage	Aircell Pipe Insulation	9	200	ln.ft.	Positive
11	Main Garage Bay	Aircell Pipe Insulation	9	450	ln.ft.	Positive
12	Fuel Bay	Aircell Pipe Insulation	9	50	ln.ft.	Positive
13	Bay 2	Aircell Pipe Insulation	9	800	ln.ft.	Positive
21	Office 4	Aircell Pipe Insulation	9	8	ln.ft.	Positive
24	Street Division Office	Aircell Pipe Insulation	9	2	ln.ft.	Positive
3	West Stairwell	Fire Door	10	1 total		Assumed
8	Parts Room	Fire Door	10	1 total		Assumed
10	East Stairwell	Fire Door	10	1 total		Assumed
14	Boiler Room	Fire Door	10	1 total		Assumed
3	West Stairwell	Fire Door Frame	11	2 total		Assumed
10	East Stairwell	Fire Door Frame	11	1 total		Assumed
14	Boiler Room	Fire Door Frame	11	1 total		Assumed
5	Office 2	12"x12" Floor Tile - Beige w/Brown & White Streaks	12	200	sq.ft.	Negative
5	Office 2	Mastic for 12"x12" Floor Tile - Beige w/Brown & White Streaks	13	200	sq.ft.	Negative
4	Office 1	Carpet Glue - Yellow	14	120	sq.ft.	Negative
5	Office 2	Carpet Glue - Yellow	14	200	sq.ft.	Negative
22	Office 5	Carpet Glue - Yellow	14	112	sq.ft.	Negative
23	Office 6	Carpet Glue - Yellow	14	112	sq.ft.	Negative
4	Office 1	Floor Leveling Compound - White	15	3	sq.ft.	Negative
5	Office 2	Floor Leveling Compound - White	15	3	sq.ft.	Negative
7	Tool Room	Fiberglass Pipe Insulation	16	15	ln.ft.	Negative
8	Parts Room	Fiberglass Pipe Insulation	16	30	ln.ft.	Negative
9	Storage	Fiberglass Pipe Insulation	16	60	ln.ft.	Negative
10	East Stairwell	Fiberglass Pipe Insulation	16	30	ln.ft.	Negative
7	Tool Room	Vibration Dampener - Black	17	10	sq.ft.	Negative
5	Office 2	Rough Plaster - Finish Coat	18	20	sq.ft.	Negative
6	Entrance/Reception	Rough Plaster - Finish Coat	18	20	sq.ft.	Negative
7	Tool Room	Rough Plaster - Finish Coat	18	12	sq.ft.	Negative
11	Main Garage Bay	Rough Plaster - Finish Coat	18	50	sq.ft.	Negative

City of Ann Arbor
721 N. Main
List by Homogeneous Area

FS#	FS Description	Homogeneous Area Description	HA#	Amount	Units	Asbestos
5	Office 2	Rough Plaster - Brown Coat	19	20	sq.ft.	Negative
6	Entrance/Reception	Rough Plaster - Brown Coat	19	20	sq.ft.	Negative
7	Tool Room	Rough Plaster - Brown Coat	19	12	sq.ft.	Negative
11	Main Garage Bay	Rough Plaster - Brown Coat	19	50	sq.ft.	Negative
10	East Stairwell	Wall Joint Caulk - Gray	20	40	ln.ft.	Positive
24	Street Division Office	Wall Joint Caulk - Gray	20	10	ln.ft.	Positive
10	East Stairwell	Door Caulk - Gray	21	40	ln.ft.	Positive
11	Main Garage Bay	Door Caulk - Gray	21	80	ln.ft.	Positive
14	Boiler Room	Door Caulk - Gray	21	80	ln.ft.	Positive
15	Locker Room	Door Caulk - Gray	21	40	ln.ft.	Positive
17	Janitorial Closet	Door Caulk - Gray	21	20	ln.ft.	Positive
24	Street Division Office	Door Caulk - Gray	21	20	ln.ft.	Positive
3	West Stairwell	Tectum Deck	22	240	sq.ft.	Negative
10	East Stairwell	Tectum Deck	22	112	sq.ft.	Negative
11	Main Garage Bay	Tectum Deck	22	5,000	sq.ft.	Negative
12	Fuel Bay	Tectum Deck	22	450	sq.ft.	Negative
16	Men's Restroom	Tectum Deck	22	450	sq.ft.	Negative
17	Janitorial Closet	Tectum Deck	22	20	sq.ft.	Negative
18	Custodial Storage	Tectum Deck	22	96	sq.ft.	Negative
19	Conference Room	Tectum Deck	22	660	sq.ft.	Negative
20	Office 3	Tectum Deck	22	80	sq.ft.	Negative
21	Office 4	Tectum Deck	22	112	sq.ft.	Negative
22	Office 5	Tectum Deck	22	112	sq.ft.	Negative
23	Office 6	Tectum Deck	22	112	sq.ft.	Negative
24	Street Division Office	Tectum Deck	22	432	sq.ft.	Negative
10	East Stairwell	9"x9" Floor Tile - Tan w/Brown & White Streaks	23	40	sq.ft.	Positive
15	Locker Room	9"x9" Floor Tile - Tan w/Brown & White Streaks	23	300	sq.ft.	Positive
17	Janitorial Closet	9"x9" Floor Tile - Tan w/Brown & White Streaks	23	20	sq.ft.	Positive
18	Custodial Storage	9"x9" Floor Tile - Tan w/Brown & White Streaks	23	96	sq.ft.	Positive
10	East Stairwell	Mastic for 9"x9" Floor Tile - Tan w/Brown & White Streaks	24	40	sq.ft.	Negative
15	Locker Room	Mastic for 9"x9" Floor Tile - Tan w/Brown & White Streaks	24	300	sq.ft.	Negative
17	Janitorial Closet	Mastic for 9"x9" Floor Tile - Tan w/Brown & White Streaks	24	20	sq.ft.	Negative
18	Custodial Storage	Mastic for 9"x9" Floor Tile - Tan w/Brown & White Streaks	24	96	sq.ft.	Negative
11	Main Garage Bay	Window Glaze - White	25	1,800	ln.ft.	Negative
13	Bay 2	Window Glaze - White	25	800	ln.ft.	Negative
15	Locker Room	Window Glaze - White	25	500	ln.ft.	Negative

City of Ann Arbor
721 N. Main
List by Homogeneous Area

FS#	FS Description	Homogeneous Area Description	HA#	Amount	Units	Asbestos
16	Men's Restroom	Window Glaze - White	25	300	In.ft.	Negative
19	Conference Room	Window Glaze - White	25	300	In.ft.	Negative
25	Garage	Window Glaze - White	25	2,500	In.ft.	Negative
13	Bay 2	Brick	26	1,500	sq.ft.	Negative
14	Boiler Room	Brick	26	1,200	sq.ft.	Negative
25	Garage	Brick	26	3,600	sq.ft.	Negative
13	Bay 2	Brick Mortar	27	1,599	sq.ft.	Negative
14	Boiler Room	Brick Mortar	27	1,200	sq.ft.	Negative
25	Garage	Brick Mortar	27	3,600	sq.ft.	Negative
15	Locker Room	12"x12" Floor Tile - Brown Mottled	28	100	sq.ft.	Negative
16	Men's Restroom	12"x12" Floor Tile - Brown Mottled	28	450	sq.ft.	Negative
19	Conference Room	12"x12" Floor Tile - Brown Mottled	28	660	sq.ft.	Negative
20	Office 3	12"x12" Floor Tile - Brown Mottled	28	80	sq.ft.	Negative
21	Office 4	12"x12" Floor Tile - Brown Mottled	28	112	sq.ft.	Negative
22	Office 5	12"x12" Floor Tile - Brown Mottled	28	112	sq.ft.	Negative
23	Office 6	12"x12" Floor Tile - Brown Mottled	28	112	sq.ft.	Negative
24	Street Division Office	12"x12" Floor Tile - Brown Mottled	28	432	sq.ft.	Negative
15	Locker Room	Mastic for 12"x12" Floor Tile - Brown Mottled	29	100	sq.ft.	Negative
16	Men's Restroom	Mastic for 12"x12" Floor Tile - Brown Mottled	29	450	sq.ft.	Negative
19	Conference Room	Mastic for 12"x12" Floor Tile - Brown Mottled	29	660	sq.ft.	Negative
20	Office 3	Mastic for 12"x12" Floor Tile - Brown Mottled	29	80	sq.ft.	Negative
21	Office 4	Mastic for 12"x12" Floor Tile - Brown Mottled	29	112	sq.ft.	Negative
22	Office 5	Mastic for 12"x12" Floor Tile - Brown Mottled	29	112	sq.ft.	Negative
23	Office 6	Mastic for 12"x12" Floor Tile - Brown Mottled	29	112	sq.ft.	Negative
24	Street Division Office	Mastic for 12"x12" Floor Tile - Brown Mottled	29	432	sq.ft.	Negative
16	Men's Restroom	4" Cove Base - Black	30	90	In.ft.	Negative
19	Conference Room	4" Cove Base - Black	30	120	In.ft.	Negative
20	Office 3	4" Cove Base - Black	30	30	In.ft.	Negative
21	Office 4	4" Cove Base - Black	30	40	In.ft.	Negative
22	Office 5	4" Cove Base - Black	30	40	In.ft.	Negative
23	Office 6	4" Cove Base - Black	30	40	In.ft.	Negative
24	Street Division Office	4" Cove Base - Black	30	40	In.ft.	Negative
16	Men's Restroom	Mastic for 4" Cove Base - Black	31	90	In.ft.	Negative
19	Conference Room	Mastic for 4" Cove Base - Black	31	120	In.ft.	Negative
20	Office 3	Mastic for 4" Cove Base - Black	31	39	In.ft.	Negative
21	Office 4	Mastic for 4" Cove Base - Black	31	40	In.ft.	Negative

City of Ann Arbor
721 N. Main
List by Homogeneous Area

FS#	FS Description	Homogeneous Area Description	HA#	Amount	Units	Asbestos
22	Office 5	Mastic for 4" Cove Base - Black	31	40	ln.ft.	Negative
23	Office 6	Mastic for 4" Cove Base - Black	31	40	ln.ft.	Negative
24	Street Division Office	Mastic for 4" Cove Base - Black	31	40	ln.ft.	Negative
11	Main Garage Bay	Window Caulk - Gray	32	1,800	ln.ft.	Negative
13	Bay 2	Window Caulk - Gray	32	800	ln.ft.	Negative
15	Locker Room	Window Caulk - Gray	32	500	ln.ft.	Negative
16	Men's Restroom	Window Caulk - Gray	32	30	ln.ft.	Negative
19	Conference Room	Window Caulk - Gray	32	30	ln.ft.	Negative
19	Conference Room	Aluminum Duct Insulation	33	100	sq.ft.	Negative
21	Office 4	2'x4' Ceiling Panel - Random Micro-Dots	34	112	sq.ft.	Negative
20	Office 3	2'x4' Ceiling Panel - Dots & Small Gouges	35	80	sq.ft.	Negative
24	Street Division Office	2'x4' Ceiling Panel - Dots & Small Gouges	35	432	sq.ft.	Negative
24	Street Division Office	4" Cove Base - Brown	36	40	ln.ft.	Negative
24	Street Division Office	Mastic for 4" Cove Base - Brown	37	40	ln.ft.	Negative
26	Exterior	Exterior Wall Joint Caulk - Gray	38	1,500	ln.ft.	Positive
26	Exterior	Exterior Foam Window Covering	39	2,400	sq.ft.	Negative
26	Exterior	Exterior Brick	40	15,000	sq.ft.	Negative
26	Exterior	Exterior Brick Mortar	41	15,000	sq.ft.	Negative
26	Exterior	Exterior Concrete	42	3,000	sq.ft.	Negative
26	Exterior	Exterior Garage Door Caulk - Gray	43	200	ln.ft.	Negative
26	Exterior	Exterior Door Caulk - White	44	240	ln.ft.	Negative
26	Exterior	Exterior Wall Panel - Yellow	45	200	sq.ft.	Positive
26	Exterior	Transite Backing Tar Paper	46	200	sq.ft.	Positive

City of Ann Arbor

721 N. Main

List by Material

FS#	FS Description	RBM Description	RBM Amount
1	Employee Locker Room	Fluorescent Light	20
3	West Stairwell	Fluorescent Light	4
4	Office 1	Fluorescent Light	4
5	Office 2	Fluorescent Light	12
6	Entrance/Reception	Fluorescent Light	20
7	Tool Room	Fluorescent Light	12
8	Parts Room	Fluorescent Light	22
9	Storage	Fluorescent Light	20
11	Main Garage Bay	Fluorescent Light	200
12	Fuel Bay	Fluorescent Light	20
13	Bay 2	Fluorescent Light	70
15	Locker Room	Fluorescent Light	20
18	Custodial Storage	Fluorescent Light	8
19	Conference Room	Fluorescent Light	36
20	Office 3	Fluorescent Light	8
21	Office 4	Fluorescent Light	8
22	Office 5	Fluorescent Light	8
23	Office 6	Fluorescent Light	8
25	Garage	Fluorescent Light	8
1	Employee Locker Room	Light Ballast	70
3	West Stairwell	Light Ballast	3
4	Office 1	Light Ballast	2
5	Office 2	Light Ballast	6
6	Entrance/Reception	Light Ballast	10
7	Tool Room	Light Ballast	6
8	Parts Room	Light Ballast	11
9	Storage	Light Ballast	10
11	Main Garage Bay	Light Ballast	100
12	Fuel Bay	Light Ballast	10
13	Bay 2	Light Ballast	35
15	Locker Room	Light Ballast	10
18	Custodial Storage	Light Ballast	4
19	Conference Room	Light Ballast	18
20	Office 3	Light Ballast	4
21	Office 4	Light Ballast	4
22	Office 5	Light Ballast	4
23	Office 6	Light Ballast	4
25	Garage	Light Ballast	4
2	Restroom	HID Light	1
11	Main Garage Bay	HID Light	3
13	Bay 2	HID Light	1
25	Garage	HID Light	16
6	Entrance/Reception	Fire Extinguisher	8
10	East Stairwell	Fire Extinguisher	3
11	Main Garage Bay	Fire Extinguisher	20
13	Bay 2	Fire Extinguisher	30
14	Boiler Room	Fire Extinguisher	1
11	Main Garage Bay	Exit Sign	1
13	Bay 2	Exit Sign	1
1	Employee Locker Room	Air Conditioner	
13	Bay 2	Floor Hydraulic Lift	3

City of Ann Arbor

721 N. Main
List by Material

FS#	FS Description	RBM Description	RBM Amount
11	Main Garage Bay	Floor Drain	6
13	Bay 2	Floor Drain	3
25	Garage	Floor Drain	5
11	Main Garage Bay	Refrigerator	10
19	Conference Room	Refrigerator	1
25	Garage	Refrigerator	1
25	Garage	Refrigerator	1
11	Main Garage Bay	Switch Gear	5
13	Bay 2	Switch Gear	6
12	Fuel Bay	Fuel Oil Tank	1
12	Fuel Bay	Transformer	1
13	Bay 2	Hydraulic Oil Tanks	2
25	Garage	Hydraulic Oil Tanks	1
17	Janitorial Closet	Sink Drain	1

City of Ann Arbor
 721 N. Main - Parts Shed
 Bulk Sample Collection Sheet

ACM Sample #	FS#	FS Description	Homogeneous Area Description	HA#	F/NF	S/TSI/M	Sample Location	Asbestos Result
CI0168/*163-001	1	Parts Shed	Cellulose Deck	3	NF	M	Northwest Corner	None Detected
CI0168/*163-002	1	Parts Shed	Cinderblock Mortar	2	NF	M	Near Door	None Detected
CI0168/*163-003	1	Parts Shed	Cinderblock	1	NF	M	Near Door	None Detected

Sample Collector(s): Jeffrey J. Benya
Sample Collection Date(s): 5/8/18

City of Ann Arbor
721 N. Main - Parts Shed
List by Material

FS#	FS Description	RBM Description	RBM Amount
1	Parts Shed	Fluorescent Bulbs	2
1	Parts Shed	Fluorescent Ballasts	1

City of Ann Arbor
721 N. Main - Parts Shed
Paint Sample Sheet

FS#	FS Description	Homogeneous Area Description
1	Parts Shed	No Materials

City of Ann Arbor
721 N. Main - Maintenance Garage
Bulk Sample Collection Sheet

ACM Sample #	FS#	FS Description	Homogeneous Area Description	HA#	F/NF	S/TSI/M	Sample Location	Asbestos Result
CI0168/*164-001	1	Maintenance Garage	Exterior Window Glaze - White	1	NF	M	Northwest Corner	None Detected

Sample Collector(s): Jeffrey J. Benya
Sample Collection Date(s): 5/8/18

City of Ann Arbor
721 N. Main - Maintenance Garage
List by Material

FS#	FS Description	RBM Description	RBM Amount
1	Maintenance Garage	Fluorescent Bulbs	12
1	Maintenance Garage	Fluorescent Ballasts	6

***No access to interior of building. Inspected through window.**

City of Ann Arbor
721 N. Main - Maintenance Garage
Paint Sample Sheet

FS#	FS Description	Homogeneous Area Description
1	Maintenance Garage	No Materials

***No access to interior of building. Inspected through window.**

02133 - ASBESTOS REMEDIATION - ROOFING MATERIAL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes removal and disposal of asbestos-containing materials by full enclosure, glove bag, or entire structures methods as applicable. Demolition and debris removal of all asbestos-containing materials identified by provisions of this Section, or shown on drawings, or identified at the site, shall be executed under the provisions of this Section, and other applicable sections of these specifications.
- B. Extent of asbestos removal work is as follows:
 - 1. As listed in section 2.4 Schedule of items containing asbestos

1.2 DEFINITIONS

- A. Asbestos Abatement Firm: Firm engaged to perform actual removal and disposal work, either as Contractor or subcontractor.
- B. Asbestos Containing Material: The term "asbestos containing material" is abbreviated ACM.
- C. Owner's Consultant: Firm engaged by Owner to identify and measure asbestos containing materials, or to inspect demolition operations, including monitoring of air quality.

1.3 SUBMITTALS

- A. Initial Submittals: Submit the following documents to Owner's Representative at the pre-abatement meeting:
 - 1. Copy of notification sent to appropriate federal, state, and local agencies (when applicable).
 - 2. Schedule of removal, specifying work locations, length and number of shifts, foreman's name, and crew size.
 - 3. Disposal Site Certification: Letter, signed by the Contractor, certifying that an approved asbestos-accepting type II landfill will be used for disposal. Include the facility name, address, and phone number.
- B. Waste Disposition Submittals: Submit to Owner signed waste shipment record stating that asbestos waste has been properly disposed. Submit the following:
 - 1. Receipts (trip tickets) from approved landfill.
 - 2. Asbestos Waste Shipment Record: As follows:
 - a. Prior to removing asbestos-containing material from the project site, provide Owner's Representative or Owner's consultant with a completed waste shipment record fully complying with Section 61.150 of the NESHAP standard, and 49 CFR Part 172.200 of the U.S. Department of Transportation, and including all required information.

- b. Ensure that the landfill operator provides a signed copy of the waste shipment record to Owner within 35 days of the date that asbestos-containing material is removed from the project site. If waste is not transported directly from the project site to the landfill, the waste shipment record shall reflect each transfer.
- c. The Owner will not make final payment prior to receipt of signed waste shipment record.

PART 2 - EXECUTION

2.1 ASBESTOS ABATEMENT, GENERAL

- A. Conduct asbestos abatement operations in a manner that fully protects Contractor's and subcontractor's employees, the general public, and building occupants from exposure to asbestos and other safety and health hazards.
 - 1. Asbestos abatement projects shall be directly supervised by a competent person as described in 29 CFR 1926.1101.
 - 2. The supervisor/competent person must complete responsibility checklists throughout all phases of the project.
- B. Protect adjacent areas, materials and surfaces from damage due to demolition operations, including but not necessarily limited to the following:
 - 1. Water damage.
 - 2. Dirt, dust and debris.
 - 3. Abrasion.
 - 4. Cuts and scratches.
 - 5. Holes from fasteners for temporary barriers.
- C. All asbestos work shall be conducted within a regulated area that complies with the following requirements:
 - 1. Post a sufficient number of signs required by 29 CFR 1926.1101 at the asbestos abatement area and at every work area entrance, so that tenants, Owner's personnel, and other contractor's employees have an opportunity to take protective measures before exposing themselves to asbestos. Place banners if necessary to secure open areas. Include information on signs indicating location and quantity of asbestos-containing material.
 - 2. Allow only authorized, properly protected personnel to enter the regulated area. Immediately report unauthorized individuals entering the work area to Owner or the Owner's consultant.
- D. When required, provide employees and inspectors authorized to enter the regulated area with protective work clothing consisting of disposable Dupont "Tyvek" (or equivalent) full body coveralls, head covers, boots, and other necessary safety gear, including a hard hat and eye protection.
- E. Provide respiratory protection to employees as required by current OSHA regulations including 29CFR 1910.134 and 1926.1101.

1. Provide asbestos abatement workers with powered air purifying respirators (PAPR) with full facepiece and HEPA filters for adequate protection during asbestos material removal operations. Respiratory protection may be down-graded if negative exposure assessment indicates that less protection is required.
2. A half-face respirator or PAPR must be worn while tearing down and setting up enclosures, while glovebagging, and during pre-cleaning and post-cleaning work.
3. Do not allow respirators to be pulled away from faces while in the work area.
4. Maintain an extra PAPR unit on site at all times for the duration of the abatement project.
5. Provide full facepiece supplied-air respirators operated in pressure demand mode equipped with air auxiliary and pressure self-contained breathing apparatus or HEPA egress filters if required for measured fiber concentrations.

F. Maintain at each job site and post the following documents:

1. Copy of EGLE/MDLARA notification (when applicable).
2. Employee respiratory protection program (when applicable).
3. Michigan Right-To-Know poster.
4. Material Safety Data Sheet locator.
5. Company standard operating procedure.
6. This specification Section.
7. Material Safety Data Sheets for products used on job.
8. CFR 1926.1101.
9. CFR, Part 61 (NESHAP).
10. The foreman's or supervisor's Contractor/Supervisor Accreditation Certificate.
11. State of Michigan Accreditation Certificates and Medical Approval for each worker (when applicable).

G. Use the following engineering controls and work practices for all asbestos abatement operations, regardless of measured exposure levels:

1. Vacuum cleaners equipped with HEPA filters to collect all asbestos-containing dust and debris.
2. Wet methods to control exposures during asbestos removal and clean-up, except where proven to be infeasible.
3. Prompt clean-up and disposal of asbestos-contaminated wastes and debris in leak-proof containers.
4. Establish a decontamination area, adjacent and connected to the regulated area, if the Project requires the removal of more than 25 lin. ft., or 10 sq. ft. of thermal systems insulation or surfacing ACM.
5. Establish an equipment area adjacent to the regulated area if the Project requires the removal of less than 25 lin. ft. or 10 sq. ft. of thermal systems insulation or surfacing ACM.

H. Do not use any of the following equipment or work practices during asbestos abatement operations, regardless of measured exposure levels:

1. High-speed abrasive disc saws not equipped with point-of-cut HEPA ventilation or HEPA filtered exhaust air enclosures.
2. Blowing with compressed air to remove asbestos-containing materials.

3. Dry sweeping, shoveling, or other dry methods to clean up asbestos-containing dust and debris.
4. Employee rotation as a means of reducing employee exposure to asbestos.

2.2 FIELD QUALITY CONTROL

- A. Pre-Notification of Owner: To permit adequate time to schedule air monitoring, notify the city project representative not less than 10 calendar days prior to planned start of all removal operations.
 1. Roofing removal Contractors may provide their own air monitoring in compliance with roofing removal requirements of this Section.
- B. Inspection: If during the project, if Owner's representative or Owner's consultant determines that work practices either violate applicable rules and regulations or endanger employees, the Contractor's on-site representative shall stop operations immediately and take corrective action. Cooperate fully with Owner's representative and Owner's consultant.

2.3 REMOVAL OF NON-FRIABLE ASBESTOS-CONTAINING MATERIALS

- A. Removal of Non-Friable Materials, General: For each type of non-friable asbestos-containing material indicated, comply with the following requirements:
 1. Comply with requirements of Article 3.1 of this Section.
 2. Conduct non-friable material removal operations to prevent the material from becoming friable during the removal and disposal process. No visible emissions are permitted. If the material does not remain substantially intact, comply with the requirements for friable asbestos removal specified in Articles 3.2 of this Section (except roofing removal).
 3. Place impermeable drop cloths on surfaces beneath removal activity.
 4. Do not conduct asbestos removal unless the Owner's Consultant is present at the site and Owner has been notified. For roofing removal projects, notify Owner prior to start of work.
 5. Labeling Containerized Waste: Comply with the requirements of Article 3.2, paragraphs B.9.a. through c. of this Section.
- B. Non-Friable Asbestos-Containing Roofing Materials: Non-friable asbestos-containing roofing materials may be removed in a non-friable state. This specification does not apply to removal of intact cements, coatings, or mastics. Obtain Owner's review and approval of planned removal operations prior to beginning. Remove non-friable asbestos-containing roofing materials in using the following technique:
 1. Each employee who is likely to disturb or handle asbestos material shall have completed an 8-hour training class, and the project shall be supervised by a competent person who has completed the appropriate contractor/supervisor course.

2. Isolate roof level heating and ventilation air intake sources within the regulated area and others that will be affected; or arrange for shut-down the affected ventilation system during removal operations. Acceptable isolation techniques include the following:
 - a. Use 20-foot or larger buffer zones.
 - b. Installation of HEPA filters over the air intakes.
 - c. Erection of horizontal or vertical extensions that relocate the opening of the intake outside or above the regulated area.
 - d. Covering the intake with plastic sheeting or other appropriate barrier.
3. Personal protective equipment (PPE), including disposable coveralls and NIOSH approved appropriate high efficiency particulate absolute (HEPA) respirators, shall be worn by personnel if the asbestos containing material is not removed in an intact state.
4. Remove roofing material in an intact state.
5. Use wet methods to remove materials that are not intact, or that are rendered not intact during removal, except where wet methods will create a safety hazard or are otherwise not feasible.
6. Continuously apply a water mist to the blade of power cutting tools, unless a competent person determines that misting will substantially decrease worker safety.
7. When removing roofing felts, collect the dust generated by power roof cutters with a HEPA-filtered dust collector; or immediately vacuum using a HEPA-filtered vacuum along the cut line. For smooth surfaces only, gently sweep wet dust generated from cutting operations, and carefully and completely wipe up the still-wet dust and debris.
8. For removal and repair operations of intact roofing less than 25 sq. ft. in area, the use of wet methods or HEPA vacuuming is not required, provided manual methods do not render the material non-intact and no visible dust is created.
9. Do not drop or throw to the ground asbestos-containing roofing material that has been removed. As soon as practicable, but not later than the end of the work shift, lower debris to ground either by passing or carrying by hand, or by lowering to the ground in a covered, dust-tight chute, crane or hoist.
 - a. While on the roof, keep non-intact asbestos-containing materials wet; or seal in impermeable waste bags, or wrap in plastic sheeting.
 - b. While on the roof, intact asbestos-containing material is not required to be kept wet, bagged, or wrapped.
10. Upon being lowered to the ground, transfer unwrapped material to a closed receptacle in manner that precludes the dispersion of dust. Dispose of the material in an asbestos-accepting Type II landfill. Notify the landfill that the roofing material contains asbestos and provide waste shipment records to Owner within 35 days.

11. For removal of intact pipeline asphaltic wrap or roof flashings that contain asbestos, engage a competent person to examine the material and determine whether the material is intact and likely to remain intact during removal. Remove the material using manual methods. Sanding, grinding, or other abrading operations are not permitted. Do not throw or drop materials to the ground. Lower the material in a covered, dust-tight chute, crane, or hoist. Remove debris from the roof at the end of the work shift.

2.4 SCHEDULE OF ITEMS CONTAINING ASBESTOS

- A. Bidding Requirements: Comply with the following requirements related to bidding:
 1. Survey quantities provided are approximate. Bidders are required to field investigate as necessary and assume all responsibility to verify the work required and quantities involved for complete asbestos abatement.
 2. The building is open for field inspection by all bidders during the bidding period.
 3. A "pre-bid orientation meeting" will be conducted to familiarize prospective bidders with site conditions and provide for verification of marked and scheduled quantities, as applicable.
- B. The following items have been surveyed and determined to have asbestos as a component:
 1. 415 W. Washington - High Bay Garage Roof (north side)
 2. 721 Main Street - North Building - flashing around fan unit

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SECTION 02200

EARTHWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General
- B. Site Preparation
- C. Excavations
- D. Unauthorized Excavation
- E. Subgrade
- F. Slopes, Sheeting and Bracing
- G. Backfill
- H. Flowable Fill
- I. Finish Grading

1.2 RELATED SECTIONS

- A. Section 00700 - General Conditions
- B. Section 01400 - Quality Control
- C. Section 01500 - Construction Facilities
- D. Section 01900 - Soil Conditions and Boring Logs
- E. Section 02110 - Site Clearing
- F. Section 02140 - Dewatering
- G. Section 02220 - Soil Erosion Control

1.3 GENERAL

- A. All excavation and backfilling shall be performed that is necessary to complete the work under this Contract. Excavation shall include the loosening, loading, removing, transporting, stockpiling, and disposing of all materials of every sort, necessary to be removed for purposes of construction; the furnishing, placing, and maintaining of all sheeting, bracing, and timbering; the care of existing roads, existing structures, utilities; and all incidental and

collateral work necessary to complete the entire work as specified and as shown on the Drawings.

- B. Backfilling shall include the filling of the excavated and void spaces around and over the outside of completed structures and pipes. It is also the intention of these specifications to provide that backfill shall be so compacted that no appreciable subsequent settlement will occur, and so that sidewalks, driveways, roads and berms may be placed or replaced shortly after completion of backfilling.
- C. The Contractor will be held to have compared the conditions of the site where work is to be performed with the drawings and specifications and to have satisfied himself as to the conditions of the site, existing conditions, and any other conditions affecting the carrying out of the work, before delivery of his proposal. It is expressly understood that he will obtain first hand information concerning the available facilities for receiving, transporting, handling and storing construction equipment and materials and concerning other local conditions that may affect his work.
- D. The Contractor shall draw his own conclusions as to soil and/or rock conditions to be encountered, and he shall complete the work under any job or field condition which was present and/or ascertainable prior to bidding.
- E. He shall also complete the work under whatever conditions he may create by his own sequence of construction, construction methods, or other condition he may create at no additional cost to the Owner.
- F. The Contractor shall be responsible for evaluating the compatibility of his construction methods with the Plans, Specifications and Soil Information provided by the Owner for bidding purposes.
- G. No allowance or extra consideration on behalf of the Contractor will subsequently be allowed by reason of error or oversight on the part of the Contractor.
- H. This contractor shall grade all areas within his work area and provide slopes, shoulders, berms, and level surfaces defined according to existing and established grades.
- I. Care shall be taken to retain, at all times, normal flow of drainage water on the property and all present above ground and underground utilities.
- J. All work shall be done in a thorough and workmanlike manner and in conformance with accepted good practices and all requirements of local, state, and federal authorities having jurisdiction.

1.4 REGULATORY REQUIREMENTS

- A. Conform to applicable state and local codes for disposal of excavated materials judged not suitable for backfill.
- B. Obtain disposal permit from Local Enforcing Agency.

1.5 QUALITY ASSURANCE

- A. Comply with all code, laws, ordinances, and regulations of governmental authorities having jurisdiction over this part of the work.
- B. Backfill materials shall be compacted to not less than specified percentage of optimum dry density as determined by ASTM D 698.
- C. Testing of backfill material will be done in accordance with ASTM D 2922, ASTM D 1556, and ASTM D 3017.
- D. Unsuitably compacted backfill materials shall be removed and recompacted.

1.6 SITE CONDITIONS

- A. Provide and maintain barricades, warning lights, warning signs, and other protection required by applicable laws for safety of persons and property.
- B. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent earth movement.
- C. Notify Owner of unexpected subsurface conditions and discontinue affected work area until notified to resume work.

1.7 HAZARDOUS/CONTAMINATED MATERIAL

- A. The following indicators shall be used by Owner onsite observers during excavation to identify materials suspected of being hazardous or contaminated and requiring disposal in a Type I or Type II landfill.
 - 1. Materials other than general construction debris of a color not consistent with the natural soils observed in the area;
 - 2. Materials other than general construction debris of a consistency that is not consistent with the natural soils observed in the area;
 - 3. Man-made containers, vessels, tanks, or barrels;
 - 4. Electric devices;
 - 5. Insulation or fibrous material that may contain asbestos;
 - 6. Material that emits a chemical or petroleum odor.

Based on these observations, materials in question shall be stockpiled separately, inspected, and representative samples should be collected and screened in the field. Materials should be stored on plastic sheeting at the predesignated, secure location on the parcel or an adjacent parcel and covered with plastic sheeting until disposal is determined.

- B. Potentially hazardous materials should be screened in the field by qualified personnel for the presence of volatile organic compounds (VOC) using a photoionization (PI) meter. It is assumed that the presence of VOCs should provide a general indicator of the presence of other potentially hazardous chemicals.

Materials to be subjected to further laboratory analysis should be selected based on the results of the field screening and observations made by the person monitoring the excavation.

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- C. Based on the field screening and laboratory analysis, the Contractor will be advised by the Owner as to the required method of disposal.
- D. The Owner will be responsible for testing of hazardous/contaminated material.
- E. Refer to Section 00700 - General Conditions, Section No. 50 for additional requirements.

PART 2 PRODUCTS

2.1 BACKFILL

- A. All material necessary to complete the backfill as shown on the drawings or to replace excavated unsuitable material shall be furnished by the Contractor. Backfill at the structures, unless otherwise indicated on the Drawings, backfill replacing unsuitable material, backfill under gravel or stone and paved roads, shall all be granular material conforming to Michigan Department of Transportation (MDOT) Granular Materials Class II. If suitable material for backfilling is not available on site then suitable material shall be brought in from an off-site borrow pit by the Contractor at no additional cost to the Owner.
- B. The Owner shall have the right to reject any backfill material which when used in the work, does not accomplish the required compaction.
- C. All backfill material shall be free from large or frozen lumps, concrete rubble, blue clay, sod, wood, debris, and other extraneous material.

2.2 FLOWABLE FILL

- A. Where called for on the Drawings certain areas of the excavation and areas of existing structures shall be backfilled with flowable fill.
- B. Flowable fill shall consist of a mixture of fly ash, cement and water such as "C-Fill" as manufactured by Clawson Concrete or "M-Crete" as manufactured by Michigan Foundation or equal.
- C. Cement shall be Portland Cement conforming to A.S.T.M. C 150 Type I. Air entrained cement, pozzolan, and other types of cement shall not be used. Fly ash shall conform to the requirements of A.S.T.M. C618, Class F. Water shall be potable.
- D. The stabilized fly ash mixture shall contain 4 to 5% Portland cement based on the dry weight of the fly ash. Occasional batches of mixture with a cement content of 3-4% will be allowed provided immediate action is taken to restore the cement content to the specified range. Mixtures containing less than 3% shall not be used. The mixture shall have a slump of 10 to 12 inches at the point of placement. The mix temperature shall not be lower than 50°. The mixture shall have a compressive strength of 100 psi minimum at 28 days.
- E. The method used to measure fly ash and cement shall be submitted for acceptance. The contractor's proposed method shall be one that compliments the type of mixing plant being used and provides assurance that the percentage of cement is being satisfactorily controlled. Cement content shall be based on the dry weight of the fly ash in the mix. The batched weight

of fly ash shall be corrected for its moisture content. Water shall be measured, although its control will be a function of consistency (slump and workability) of the mix.

- F. The flowable fill may be mixed by a pug mill, central concrete mixer, turbine mixer or other acceptable equipment or method. Provisions shall be made to maintain the mix temperatures and slump as stated.
- G. The material shall be placed by end or side dumping, tremie, pump, conveyors, or other suitable method. Lines and grades shall be as shown on the design drawings. Stabilized fly ash shall be protected from freezing temperatures for the initial 24 hours after placement. Protection may consist of earth cover, straw, or a sacrificial layer of the stabilized fly ash mix.

PART 3 EXECUTION

3.1 EXCAVATIONS

- A. The Contractor shall make all excavation necessary for the construction of all work called for by the drawings or specified herein.
- B. Excavations shall be made to the line and grade shown on the drawings including removal of unsuitable soils from under structures or roads, or as required to meet MIOSHA regulations. Side slopes of unbraced excavations shall be such as to prevent slides which might injure the work. The Contractor shall conduct his excavation and other operations in such a manner as to ensure that the bed for footings and foundations remains free from rutting, trampling, or other undue disturbance. The beds for footings and foundations shall be true to grade and free of all loose material before any concrete is put in place. All unauthorized excavation below grade of any structure shall be backfilled with concrete to the proper grade at the Contractor's expense. The Contractor shall make all necessary fills to bring grade to finished grade shown on the drawings. Fills and cuts shall be graded to a uniform, smooth, and even grade to grades as shown on the Drawings to meet Owner's approval. Existing underground utilities that are to remain in place shall be protected and any damage caused by excavating shall be made good.
- C. Control the grading in the vicinity of excavated areas so that the surface of the ground will be properly sloped to prevent water from running into the excavated areas. Such areas shall be kept reasonably dry at all times. Accumulated water in the excavated areas shall be removed by pumping.
- D. Broken concrete or rubbish unsuitable for backfill shall be disposed of by the Contractor. Borrow material shall be graded in such a way that surface water will continue to drain in a manner similar to the drainage patterns present before filling occurred. Broken concrete and rubbish shall be disposed of off-site.

3.2 UNAUTHORIZED EXCAVATIONS

- A. Whenever the excavation is carried beyond the lines and grades established by the drawings or as approved by the Owner, the Contractor shall, at his own expense, fill all such excavated space with an approved material and in such a manner as to meet the approval of the Owner.

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- B. Unauthorized excavation beneath structures shall be filled with plain concrete, or flowable fill as determined by the Owner.

3.3 SUBGRADE

- A. The subgrade for all structures shall be prepared so as to have as near as practicable a uniform density throughout the entire area. The subgrade shall be compacted to 95% maximum density at optimum moisture content as specified in AASHTO-180 or by Michigan Cone density, whichever is greater, by rolling or by other approved methods. After being prepared, the subgrade shall be maintained until concrete has been placed thereon.
- B. If, through neglect or delay on the part of the Contractor, the earth at subgrade elevation becomes unsuitable for the support of the work to be constructed thereon, the Contractor shall excavate down to solid earth, and shall backfill to the required subgrade elevation with plain concrete, compacted sand, or other suitable material as required to meet the Owner's approval. Unstable subgrade soil under all concrete foundations shall be replaced with plain concrete.
- C. All subgrades shall be approved by the Engineer before proceeding with backfilling and compaction, landscaping, or other construction work.
- D. Subgrades shall be level and clean of all loose rock, dirt, and debris and free of standing water prior to placing concrete.

3.4 SLOPES, SHEETING, AND BRACING

- A. All slopes shall be cut and maintained to the proper degree required for stability. Sheeting and bracing shall be placed and maintained as indicated and/or whenever required for safety to men and the work. The degree of slope for all excavations shall be fixed by the Contractor, and shall comply with all State and Federal safety requirements.
- B. The Contractor shall provide, install, and maintain all shoring, sheet piling, and bracing required to maintain banks of excavations and other construction, and assume full responsibility for same. The design of all shoring systems shall be performed by an Engineer registered in the State of Michigan utilizing loading diagrams as provided in Section 1900 of the Specifications. The shoring system design computations shall be sealed by the Engineer who prepared them and forwarded to the Owner for review.
- C. Sheeting, bracing and timbering shall be so placed as to allow the work to be constructed to the lines and grades shown on the drawings.

Size and placing of members shall be subject to review by the Owner but the design of members and safety of the excavation shall be the responsibility of the Contractor.

Exact areas to be sheet piled and final weight of sheet piling shall be determined by the Contractor unless otherwise indicated for permanent sheet piling. Actual quantity and location of all sheet piling required for this project shall be determined by the Contractor.

- D. The Contractor shall select hammer or hammers to be used on sheet piling based on length, weight, type of pile, and depth of penetration and submit data on the hammer selected to the Owner for review. Double-acting hammers may be used on sheet piling.

Approximate weight of hammer shall be 2-1/2 times the weight of a sheet of piling to be driven.

- E. Sheet piling shall be driven to depths and lengths required by the Contractor unless otherwise indicated for permanent sheet piling. Level measurements, utilizing previously specified bench marks, shall also be made at existing structures, in the presence of the Owner's designated representative, during all driving of sheet piling to record any change in the level of present structures or utilities caused by the Contractor's Operations.

- F. Permanent sheet piling where indicated on the drawings shall be of weight, area and depth shown on the drawings and shall remain in place.

- G. Temporary sheet piling may not be withdrawn from any area until concrete within the zone influenced by vibrations set up by withdrawal operations, has attained its 28 day design strength.

- H. If the sheeting and bracing cannot be removed without detriment to the finished structure or existing structures, then the sheeting and bracing shall be left in place temporarily or permanently as the Owner shall approve. Sheeting and bracing left in place permanently shall be cut off at the required level so as not to interfere with subsequent construction. The cost of materials left in place less the eliminated expense of removal work shall be paid as an extra. No extra payment shall be allowed for the cost of placing the material.

- I. All bracing used shall be so arranged as to place no stress on any portion of the completed work until such work shall have developed sufficient strength, as determined by the Owner. Any damage to any structures occurring through settlements, water or earth pressure, slides, cave-ins, or other causes shall be repaired by the Contractor at his own expense.

All materials used for earth bracing or support shall be structurally sound, uniform in quality, and adequate in size and strength for the use intended.

3.5 BACKFILL AND COMPACTION

- A. It is the intent of these Specifications that backfill shall be so placed and consolidated that no appreciable subsequent settlement will occur.
- B. Backfill shall be placed in uniform layers not exceeding 12 inches in depth when measured loose and each layer shall be thoroughly compacted by tamping, sheepsfoot-roller, mechanical vibrators, or by other effective means approved by the Owner. All backfill in all areas shall be compacted to at least 95% of maximum density, at optimum moisture content as specified in MDOT Standard Specifications for Construction Controlled Density Method. Compaction by flooding will not be permitted.

The Owner shall have the right to reject any backfill material which when used in the work, does not accomplish the required compaction.

- C. The Contractor shall furnish all necessary assistance and test pits as required for the Owner to conduct compaction density tests.
- D. No backfill material shall be placed on areas where free water is standing or on frozen subsoil areas.
- E. Clean areas and excavations to be backfilled of all trash and debris before placement of backfill. In placing backfill, take special care to prevent any wedge action, eccentric loading, damage, or overloading of any adjacent structures, piping, and equipment by equipment used in compacting backfill material.
- F. Heavy equipment for spreading and compacting fill and backfill shall not be operated closer to a wall than a distance equal to the height of the fill or backfill to be placed. Power-driven hand operated equipment shall be used against walls and where space limits the use of heavy equipment.
- G. All excavations around the walls and other foundations, etc., shall be backfilled to meet Owner approval after all work has been inspected and approved. Backfill shall not be placed against walls until all supporting slabs are in place and have attained their design strength or as indicated on the structural drawings.
- H. If compaction tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to the Owner.
- I. Porous stone filters shall be furnished and installed where shown on the Drawings. Stone filters shall be encased in a drainage geotextile fabric as specified in Section 02202 of these specifications.

3.6 FINISH GRADING

- A. The Contractor shall grade the entire site as indicated on the drawings to a smooth and even grade, meeting existing grades and/or the grades indicated on the drawings.
- B. Excavated material suitable and approved for backfilling shall be stored on the site in areas approved by the Owner. Reusable topsoil that is displaced shall also be stored on the site in separate area from the backfill.
- C. Finish grade under gravel road areas and under paved areas shall be limited to 1/2 inch in 10 feet from true profile, and shall be maintained until succeeding layer or surface course is placed.
- D. Finish grading shall slope uniformly to contour lines shown on the Drawings, and to meet existing adjacent levels. The Contractor shall grade all areas within his work site and provide slopes, shoulders, berms, and level surfaces defined according to existing and established grades. The work shall also include all adjacent areas disturbed by construction and as required by new pavement installation.
- E. The subgrade for all slabs and pavements shall be prepared so as to have as near as practicable a uniform density throughout the entire area. The subgrade shall be compacted to 95% maximum density at optimum moisture content, as specified under BACKFILL AND

COMPACTION herein, by rolling or by other approved methods. After being prepared, the subgrade shall be maintained until concrete or pavement has been placed thereon.

- F. If, through neglect or delay on the part of the Contractor, the earth at subgrade elevation becomes unsuitable for the support of the work to be constructed thereon, the Contractor shall excavate down to solid earth, and shall backfill to the required subgrade elevation with plain concrete, or other suitable material as required to meet the Owner's approval.

Soil found to be unstable in the subgrade shall, when required to meet the Owner's approval, be excavated to firm soil and replaced with MDOT Granular Material, Class II, as specified above thoroughly compacted. Subgrade area supporting structures shall have unstable material replaced with Owner approved concrete.

- G. Refer to Section 02958 - Special Landscaping Requirement for Site.

3.7 INSTALLATION OF PERIMETER DRAINS

- A. Install at locations where drains are shown on Contract Drawings.
- B. Install aggregate and filter cloth as shown on details on Contract Drawings.
- C. Compact aggregate as specified and complete filter cloth installation prior to completion of backfill.

END OF SECTION

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SECTION 02211
ROUGH GRADING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Removal of topsoil and subsoil.
- B. Cutting, grading, filling, rough contouring, and compacting, the site to meet the requirements shown on the Contract Drawings and as specified in related sections.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control.
- B. Section 02200 - Earthwork.
- C. Section 02220 - Soil Erosion Control.
- D. Section 02930 - General Landscape Materials and Final Grading.
- E. Section 02970 - Landscape Maintenance and Guarantee Standards.

1.3 REFERENCES

- A. AASHTO T180 - Moisture-Density Relations of Soils Using a 10 lb (4.54 kg) Rammer and an 18-in. (457 mm) Drop.
- B. ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.
- C. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- D. ASTM D2167 - Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- E. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- F. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Topsoil: Type - Existing Removed Material as specified in Section 02200, 02930 and 02958.

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- B. Subsoil Type: Excavated and re-used material, graded, free of lumps larger than 3 inches, rocks larger than 2 inches and debris conforming to ASTM D2487 Group Symbol OL.
- C. Subsoil Type S2: Imported material, graded, free of lumps larger than 3 inches, rocks larger than 2 inches and debris conforming to ASTM D2487 Group Symbol OL, as required to complete fill operation.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of Section 01039.
- B. Verify that survey bench mark and intended elevations for the Work are as indicated.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Protect all utilities from damage.
- D. Notify utility company to remove or relocate utilities as required.
- E. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- F. Protect bench marks, survey control points, structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.3 SOIL EXCAVATION

- A. Excavate topsoil and subsoil from areas to be excavated for installation of structures and utilities and areas to be further re-landscaped, or re-graded as indicated on the Contract Drawings. Depth of subsoil removal shall be as called for on the Contract Drawings and as specified in Section 02970.
- B. Do not excavate and process wet material to obtain optimum moisture content.
- C. When excavating through roots, perform work by hand and cut roots with sharp axe.
- D. Stockpile in area designated on remote site to depth not exceeding 10 feet and protect from erosion. Segregate topsoil from sub-soil and store separately. Protect stockpiles from erosion from water and wind.
- E. Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key placed fill material to slope to provide firm bearing.
- F. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

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3.4 FILLING

- A. Install Work in accordance with State of Michigan MDOT standards and as called for in Sections 02200 – Earthwork and Section 02970 – Landscape Maintenance and Guarantee Standards and as called for on the Contract Drawings.
- B. Fill areas to contours and elevations with unfrozen materials.
- C. Place fill material on continuous layers and compact as called for in Sections 02200, 02970 and as called for on the Contract Drawings.
- D. Filling of topsoil and final grading is covered under Sections 02930 and 02970.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Slope grade away from building minimum 2 inches in 10 ft unless noted otherwise.
- G. Make grade changes gradual. Blend slope into level areas.
- H. Remove surplus fill materials from site.

3.5 TOLERANCES

- A. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation or as called for in Sections 02200 and 02970.

3.6 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Control: Field inspection and testing.
- B. Testing: In accordance with ASTM D1556, ASTM D1557, ASTM D698, AASHTO T180, ASTM D2167, ASTM D2922, and ASTM D3017.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- D. Frequency of Tests: To be determined by Owner's testing consultant.

3.7 SCHEDULES

- A. Compaction and depth of each lift shall be as referred to in Sections 02200 and 02970, and as called out hereinafter, or as called for on the Contract Drawings.
- B. Structural Fill:
 - 1. Fill Type-Clay: Maximum 12 inches compacted depth for each lift.
 - 2. Compact to minimum 95 percent of maximum density.
- C. Pervious Structural Fill:
 - 1. Fill Type-MDOT Class II Maximum 12 inches compacted depth for each lift.
 - 2. Compact to minimum 95 percent of maximum density.

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SECTION 02220

SOIL EROSION CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. This specification section provides certain requirements, techniques and measures to minimize erosion damage to the construction site.

1.2 GENERAL

- A. In general, the Contractor shall conduct his operations in such a manner as to limit any exposed area of any disturbed land for the shortest practicable period of time and any sediment caused by soil erosion due to his operations shall be restricted and reduced to a non-polluting minimum before it leaves the site.
- B. The Contractor shall comply with all requirements under the Soil Erosion and Sedimentation Control Act, 1972 Public Act 347. Where these specifications are more stringent than Act 347 then these specifications shall govern.
- C. All temporary stabilization work done shall be coordinated with Section 02930 – General Landscape Materials and Final Grading for site so that this work does not interfere with the final site restoration.

1.3 RELATED SECTIONS

- A. Section 02110 - Site Clearing
- B. Section 02200 - Earthwork
- C. Section 02211 - Rough Grading
- D. Section 02930 - General Landscape Materials and Final Grading
- E. Section 02970 - Landscape Maintenance and Guarantee Standards
- F. Section 02990 - Permits

1.4 INLAND LAKES AND STREAMS ACT

- A. All waterway crossings are subject to the provisions of the Inland Lakes and Streams Act, 1972 Public Act 346, as amended and Administrative Rules. The Contractor shall obtain the latest version of these regulations for use on this project as reference material. Special attention is directed to applicable portions of Rules 22 through 29, inclusive. The Contractor's activities shall adhere to the provisions of this act and the Contractor shall hold the Owner harmless from any violations, civil action or penalties arising from the Contractor's actions.

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1.5 BASIS OF PAYMENT

- A. All costs associated with the above stated requirements shall be considered incidental to the project and shall be included in the bid.
- B. The Owner shall obtain the necessary Soil Erosion and Sedimentation Control Permit and the Wetlands Permit from the State of Michigan with no cost to the Contractor.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Refer to the following Table 1 for stabilization materials and seasons for use. Also, coordinate this work with Section 02930 – General Landscape Materials and Final Grading so that any soil stabilization done does not interfere with the final site restoration.

TABLE I
MATERIALS FOR STABILIZATION
OF CONSTRUCTION AREAS

<u>Material</u>	<u>Amount</u>	<u>Season</u>
Spring Oats or Barley or Domestic Rye Grass or Sudan Grass or Rye or Perennial Ryegrass or Wheat	25 lbs/acre	April 1 to Aug. 15
	35 lbs/acre	June & July
	25 lbs/acre	Aug. 1 to Oct. 15
	25 lbs/acre	Sep. 20 to Oct. 15
	2.5 bus/acre	
Fertilizer: 12-12-12 Commercial	600 lbs/acre	Seeding Season
Mulch: Sm. grain Straw Hay	2 tons/acre	All Year
Spray Coating: Liquid Asphalt RC 1, 2, or 3 MC 2 or 3	0.10 gal/s.y.	All Year

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<u>Material</u>	<u>Amount</u>	<u>Season</u>
Asphalt Emulsion: RC 1 or 2 MC 2	0.04 gal/s.y.	Spring & Fall
Mulch: Kraft Paper	Cover Area	All Year
Netting:	See Mulching Section	
Top Soil for Permanent Seed:	3"	Seeding Season
Top Soil for Sod:	3"	Sodding Season
Sod: MDOT 8.21 Class B	1-1/2" x 10" x 18" min.	May 1 to Oct. 20
Pegs: Sound Wood	8" long (min.) 0.75 sq. in. (min.)	

PART 3 EXECUTION

3.1 EROSION PROTECTION-CROSSING DRAINS/STREAMS

- A. In order to limit the length of time that the exposed area is subject to the elements and the subsequent conditions causing erosion, the contractor shall adhere to the following requirements.
1. The banks of drains will not be left unprotected for more than one day where possible, but never more than seven days. Construction will not be allowed to continue at the expense of not providing stream bank protection. All spoils including organic and inorganic soils, vegetation and debris shall be placed above the ordinary high water mark, leveled and stabilized with sod and/or seed, fertilized and mulched, in such a manner as not to erode into any waterbody or wetland.
 2. All disturbed drain banks will be finished with a slope not steeper than 2:1 (2 horizontal to 1 vertical) and in accordance with grading plans. Fill shall consist of inert materials which will not cause siltation nor contain soluble chemicals or organic matter which is biodegradable. All fill shall be contained in such a manner as not to erode into any watercourse. All raw banks shall be stabilized with sod, seed, fertilizer and mulch or riprapped as necessary to prevent erosion.
 3. All raw soil will be either sodded or seeded, fertilized and mulched. On slopes greater than 10 percent, sod will be pegged for stability.
 4. Deflection dikes consisting of gravel or other suitable material, reinforced by one row of sandbags, will be used to divert runoff from steep slopes adjacent to water courses,

where contributing runoff could be great enough to cause slope erosion and resulting sedimentation at the ditch. Diversion berms, filter berms, diversion ditches or terracing may be appropriate.

5. Excavation shall stop some distance from ditches to leave a protective plug of 10 to 20 feet of unexcavated material at each bank. These plugs shall be left in place.

- B. Any unforeseen situations that may be encountered during the course of construction, that may cause accelerated erosion and deposition of sediment into waterways and/or lakes, will be controlled by methods that may include sediment traps, sediment basins, or holding ponds. Any slope failures or development of gullies after construction has been completed will be corrected immediately.

3.2 EROSION PROTECTION-OPEN CUT CONSTRUCTION

- A. In order to limit the length of time that the exposed area is subject to the elements and subsequent conditions causing erosion, the Contractor shall adhere to the following requirements.
 1. Burlap Silt Traps (or equivalent) shall be placed between the frame and cover of all manholes, catch basins, and gate wells in the construction area. The burlap shall be periodically replaced if silt buildup causes the trap to function improperly.
 2. Underground piping and conduit construction, including installation of pipe, backfilling, surface restoration and removal of excess excavation shall be accomplished in one continuous operation. Backfilling, removal of excess excavated material and final or temporary stabilization (according to seasonal limitation) shall follow pipe laying and conduit construction by no more than 100 feet.
 3. Excess excavated materials shall be removed from the job site. Excess excavated material shall be disposed of in accordance with Section 02200-Earthwork. A soil erosion plan must be prepared by the Contractor for each fill area and it shall be approved by a proper authorized agency and implemented before starting filling operations.

3.3 APPLICATION OF PERMANENT STABILIZATION

- A. Permanent stabilization shall be applied to all areas disturbed by the Contractor during completion of the work required by the Contract.
- B. The stabilization shall be accomplished within 7 days of completion of the final earth change provided that change is made within the stated season for such stabilization.
- C. If the final earth change is accomplished at a time outside of the stated seeding or sodding season, temporary stabilization shall be applied within 7 days of completion of the final earth change and shall be replaced with permanent stabilization as soon after the following April 20 as the ground is workable.

3.4 APPLICATION OF TEMPORARY STABILIZATION

- A. Temporary stabilization shall be applied to areas where initial work has caused disturbance and the final earth change will not be completed immediately and to areas where the final earth change is completed between October 1 and April 20.

- B. Temporary stabilization shall be applied to areas where the final earth change has been completed, including final grading and top soil placement, between the dates of October 1 and April 20. The disturbed areas shall have mulch placed and anchored as described in the following paragraphs. After April 20, areas to be seeded shall be seeded through the mulch. Mulch shall be added and anchored as necessary to replace that lost prior to April 20. Where sod is to be placed, the mulch will be removed or worked into the soil. If worked into the soil, the fertilizer application rate shall be increased by 25%.
- C. Areas disturbed by construction activities but on which the final earth change has not been made shall be graded to provide positive drainage and shall be stabilized to prevent erosion.
- D. Areas which receive an initial earth change during the period October 15 to April 1 and will not receive further work for any length of time within that season shall have mulch placed and anchored. If work is not anticipated in such areas prior to the following July 1, the area shall be seeded with temporary seeding on or shortly after April 1.
- E. Areas which receive an initial earth change between April 1 and October 15 and on which no further work is anticipated within 3 months shall receive temporary seeding and mulch.
- F. Areas which receive an initial earth change and on which further work is to be done within 3 months shall be graded to provide positive drainage and shall have mulch placed and anchored.

3.5 SEEDING FOR TEMPORARY AND PERMANENT STABILIZATION

- A. Site Preparation
 - 1. The seedbed immediately before seeding shall be firm but not so compact as to prohibit the seed from securing adequate germination or root penetration. Topsoil shall be replaced after grading operations for permanent stabilization. No topsoil is required for temporary stabilization. Tillage implements shall be used as necessary to provide at least a 3 inch depth of firm but friable soil, free of large clods and stones and other debris. All seeding shall be protected by mulching. See Sections 02200 and 02930 of these specifications for details of permanent stabilization which include spreading topsoil, seeding, fertilizing, mulching, establishment and guarantee. Mulching work shall also be included in temporary stabilization.
- B. Seeding Dates
 - 1. Seed shall be applied from April 20 to October 1 for permanent stabilization and from April 1 to October 15 for temporary stabilization and the seeded areas shall be kept moist for fourteen (14) days to insure growth. If the site is readied for seeding during non-seeding months, it shall be protected by mulching. The site can be seeded later through the mulch. Seeding shall not be done on frozen soil or if the soil is snow covered.
- C. Seedings
 - 1. Seed in a moist firm seedbed. Place seed from 1/4 to not over 1/2 inch in depth. See Table No. 1 for seeding mixture.
- D. Irrigation

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1. The Contractor shall apply water to the new seedings daily in order to insure that the seed bed is moist enough to allow germination and growth of the seeds.

3.6 SOD FOR PERMANENT STABILIZATION

A. Site Preparation

1. Fill areas must be compacted enough to resist uneven settling. Cut areas must be loosened if needed to permit grass root penetration. The entire surface to be sodded shall be free from large clods, stones, or other debris. Immediately before placing sod the soil surface shall be loosened to a depth of one inch and thoroughly dampened if not already moist.
2. See Sections 02200 and 02930 of these specifications for sodding details which include type of sod, fertilizing, sod laying, establishment and guarantee.

B. Sodding Dates

1. Sod shall be applied from May 1 until October 20 and properly irrigated. Frozen sod shall not be placed nor shall any sod be placed on frozen soil. During periods when sod cannot be laid, temporary stabilization methods shall be applied.

C. Irrigation

1. The Contractor shall apply water to the new sod daily in order to insure that the sod is moist enough to allow growth.

END OF SECTION

SECTION 02831

CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fence framework, fabric, and accessories.
- B. Excavation for post bases, concrete foundation for posts, and center drop for gates.
- C. Manual gates and related hardware.

1.2 RELATED SECTIONS

1.3 REFERENCES

- A. ASTM A116 - Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric.
- B. ASTM A121 - Zinc-Coated (Galvanized) Steel Barbed Wire.
- C. ASTM A123 - Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
- D. ASTM A153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- E. ASTM A392 - Zinc-Coated Steel Chain-Link Fence Fabric.
- F. ASTM F567 - Installation of Chain-Link Fence.
- G. ASTM F669 - Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence.
- H. ASTM F1083 - Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
- I. Chain Link Fence Manufacturers Institute (CLFMI) - Product Manual.

1.4 SYSTEM DESCRIPTION

- A. Provide new fence as specified below and indicated on the Drawings.
- B. All fencework shall follow a uniform gradient conforming to finished grades and be placed on lines shown.
- C. Contractor will be required to inspect the property where fence is shown located, to ascertain conditions under which installation is to be made, and employ a responsible layout person to insure that fence is accurately placed.

- D. The fence shall be 6'- 0" high chain link.
- E. Line Post Spacing shall be at intervals not exceeding 10 feet.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, schedule of components, and fence manufacturer.
- D. Immediately after award of the Contract, the Shop Drawings and Product Data shall be submitted to the Owner for consideration in accordance with the applicable subdivision of the General Conditions. No such items, or the material therefor shall be ordered, fabricated, delivered or incorporated into the work until the proper approvals for same have been received from the Owner.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with CLFMI - Product Manual, ASTM F567, and as herein specified.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
 - 1. Anchor Post Products, Inc., Anchor Post Fence Division.
 - 2. United States Steel Corp., American Steel and Wire Division, Cyclone Fence Department
 - 3. Cyclone Fence, U.S. Diversified Group, USX Corp.
- B. Substitutions: Refer to Section 01300.

2.2 MATERIALS

- A. Steel for the posts shall be high carbon steel and contain not less than .35 percent carbon. No used, re-rolled or open seam material will be permitted in posts or rails. Weights herein mentioned for pipes are subject to the usual 5% tolerance. Pipe 4" O.D. and less shall be butt welded. Pipe over 4" O.D. shall be seamless.
- B. Intermediate Posts:

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1. Intermediate posts shall be standard galvanized steel pipe, 2-1/2" outside diameter, weighing not less than 3.65 lbs. per lineal foot or galvanized 2-1/4" H-beam weighing not less than 4.1 lbs. per lineal foot, and shall be spaced not over 10'-0" on centers.
- C. Corner Posts:
1. Corner posts shall be standard galvanized steel pipe 3" outside diameter, weighing not less than 5.79 lbs. per lineal foot.
 2. Each corner post shall be provided with one 1-5/8" outside diameter brace tube placed horizontally mid-height between corner post and next intermediate post each side of corner post. In addition at each corner post one diagonal brace rod not less than 3/8" in diameter, shall be provided each direction. Brace tubes and rods shall also be provided at posts on each side of all gates.
 3. Corner post forming swing gate post as required shall have brace tube and rod as per above.
 4. Any post occurring at a change in direction of fence shall be considered as a corner post.
- D. Terminal Posts:
1. Terminal posts as required shall be same as corner posts and similarly braced.
- E. Lengths of Posts:
1. Intermediate posts shall be of sufficient length to be set minimum 36" into concrete. Corner posts and terminal posts shall be of sufficient length to be set minimum 39" into concrete.
- F. Post Caps:
1. All terminal posts shall have suitable malleable iron caps, with screw or rivet connection.
- G. Arms:
1. Intermediate posts and corner posts shall be fitted with single extension arms to hold three strands of barbed wire.
 2. Arms shall project from the fence line at an angle of 45 degrees. Arms may be malleable iron or pressed steel.
 3. Terminal posts and gate shall extend up far enough to receive the top strand of barbed wire run horizontal, and to have three galvanized iron brackets for securing the wire so set that wire will maintain a horizontal position.
- H. Swing Gate Posts:
1. Swing Gate Posts shall be hot dipped galvanized 3" O.D. steel pipe weighing 5.79 lbs. per lineal foot for single swings up to 6'-0" or double swings up to 12'-0".
- I. Top Rails:
1. Top rails shall be standard galvanized steel pipe 1-5/8" outside diameter, weighing 2.27 lbs. per lineal foot, in mill lengths, and shall be fitted with expansion sleeve couplings.
 2. Rails shall pass through intermediate post tops and shall be finished with malleable iron fittings and steel bands to securely fasten to end, corner and gate posts.
- J. Fabric:

1. New zinc coating chain-link fence fabric shall be individual pickets, helically wound and interwoven, in the form of continuous chain-link fabric without knots or ties except knuckling or twisting and barbing at the ends of the pickets and in the selvage of the fabric.
 2. Fabric shall be No. 6 gauge wire woven in a two inch mesh. Weight of zinc coating shall be minimum 2 oz. per square foot of wire surface. Zinc coating shall conform to current ASTM B-6. Top and bottom selvage to have a barbed finish. Barbing to be done by cutting wire on bias, thus creating sharp points. Fabric shall be band fastened every 16" to posts and top rail. Bands shall be galvanized or stainless steel material. Number 7 galvanized coated spring steel tension wire shall be pulled taut, placed 6" from bottom of fabric and banded in place.
- K. Tensile Strength Test:
1. The wire of which this fabric is made shall have a minimum tensile strength of 80,000 pounds per square inch.
- L. Galvanizing:
1. Galvanizing on all posts, braces, caps, arms, fabric and accessories shall be a minimum of 2.0 ounces per square foot per current ASTM A120.
 2. All posts, rails, braces and fittings (except bands), are to stand five, one-minute immersions in a solution of copper sulphate according to the "Preece" test. Line posts, corner posts, and braces shall be galvanized inside and out by the hot dip method.
 3. Galvanized coating shall be smooth, of reasonably uniform thickness, free from dross, uncoated spots, and adhering particles of foreign material.
 4. Fence, accessories, hardware, and hot dip galvanizing shall conform to ASTM Specifications A120, A121-Class III, A123, A153-Class A, A392-Class 2, and A475-Class A for tension wire.
- M. Swing Gates:
1. Materials for swing gates shall be square tube with galvanizing matching fencing. All gates shall be equipped with keepers, locking devices capable of receiving a padlock, and hold-open device. Width of gates shall be as shown on the drawings.
- N. Concrete Piers:
1. Concrete piers shall be provided for all posts. Piers for line or intermediate posts shall be 10" in diameter and 39" deep; for corner posts and 15" in diameter and 42" deep for terminal posts.
 2. Gate post piers shall be of such size that gate posts shall have 8" of concrete cover. All gate posts shall be set 48" into concrete pier 54" deep.
 3. All post holes shall be dug so that center of post will, when lined and spaced, shall be not more than 1" from center of concrete pier.
 4. Erector shall use care in erecting fence. Contractor shall space posts not more than 10'-0" on centers, and carefully erect all corner bracing as specified.
 5. Concrete for all posts shall be 3500 psi concrete. Tops of piers shall be finished smooth and to pitch away from posts.

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PART 3 EXECUTION

3.1 INSTALLATION

- A. Install framework, fabric, accessories and gates in accordance with ASTM F567 and as designated herein and shown on the Contract Drawings.
- B. Place fabric on outside of posts and rails.
- C. Set intermediate, terminal, corner and gate posts plumb, in concrete footings with top of footing 2 inches above finish grade. Slope top of concrete for water runoff.
- D. Intermediate Post Footing Depth Below Finish Grade: 3.25 feet.
- E. Corner, Gate and Terminal Post Footing Depth Below Finish Grade: 3.5 feet.
- F. Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail one bay from end and gate posts.
- G. Provide top rail through intermediate post tops and splice with 6 inch long rail sleeves.
- H. Install center and bottom brace rail on corner gate leaves.
- I. Do not stretch fabric until concrete foundation has cured 7 days.
- J. Stretch fabric between terminal posts or at intervals of 100 feet maximum, whichever is less.
- K. Position bottom of fabric 2 inches above finished grade.
- L. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 16 inches on centers.
- M. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- N. Install bottom tension wire stretched taut between terminal posts.
- O. Install support arms sloped outward and attach barbed wire; tension and secure.
- P. Install gate with fabric to match fence. Install three hinges per leaf, latch, catches, drop bolt retainer and locking clamp.
- Q. Provide concrete center drop to footing depth and drop rod retainers at center of double gate openings.

3.2 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Position: 1 inch.
- C. Components shall not infringe adjacent property lines.

3.3 FENCE MOUNTED ON CONCRETE WALLS

- A. For areas where the fence is to be mounted on concrete walls, the Contractor shall core drill 10" deep holes in the wall, 1" larger than the post size.
- B. The centerline of the fence shall be set 6" from the exterior face of the wall.
- C. The post shall be centered in the hole and the hole filled with non-metallic grout per specifications.
- D. Post spacing shall be at the ends of the walls/structure with intermediate posts equally spaces, but not exceeding spacing hereinafter specified.

END OF SECTION

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SECTION 02836

PROPERTY PROTECTION FENCE

“Property Protection Fence” shall be six (6) foot high chain link fence installed at the boundary of the construction limits, except through drive approaches and as otherwise indicated on the Plans or directed by the Owner to surround landscaping and trees to be preserved and protected. The purpose of the fence is to define the limits of all construction activities and prevent the public from entering the affected area. Construction is to be confined within the limits of the fencing. Only at the direction of the project engineer will the property protection fence be relocated.

The fence shall meet the following specifications:

Height:6'-0" (minimum)
Fence Material: Chain Link
Post Spacing:..... 10 ft (maximum)
Post Material: Steel
Shade Tarp: 6' high mesh

Itemized within the Proposal is “Property Protection Fence.” The unit price bid shall include all costs for providing and installing the protective fence, maintaining fence during construction, and removal of the protective fencing upon completion of the project as directed by the Owner. No construction fence may be removed without Owner authorization. Construction fence that is installed on pavement areas shall be supported by posts that are not driven into the pavement or otherwise supported without damaging the pavement.

A 6 ft high green or black, 80% shade fence tarp with grommets spaced every 12 inches along the perimeter shall be used with the temporary construction fencing.

The Owner may increase or decrease the quantity within the Proposal. No adjustment in Contract unit price will be made for increases or decreases in Property Protection Fence quantities, regardless of the percentage of increase or decrease.

The fence is to be removed once demolition activities are completed and the site restored to its condition prior to installation.

END OF SECTION

SECTION 02929

SEEDING

PART 1 GENERAL

1.1 SUMMARY OF WORK

- A. Extent of seeded and sodded lawns is shown on drawings and by provisions of this section.
- B. Types of work required include the following:
 - 1. Soil preparation
 - 2. Topsoil
 - 3. Hydroseeding

1.2 RELATED WORK

- A. Related work specified elsewhere:
 - 1. Section 02200 - Earthwork
 - 2. Section 02950 - Trees, Plants and Ground Covers
 - 3. Section 02970 - Landscape Maintenance and Guarantee Standards

1.3 QUALITY ASSURANCE

- A. Seeding Subcontractor shall have a minimum of 5 years of experience with hydroseeding and related work.

1.4 SUBMITTALS

- A. Submit certification of grass seed from seed vendor for each grass seed mixture.
- B. Manufacturer's certification of fertilizer.
- C. Hyrdoseeder's certification of experience.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver seed in original sealed, labeled and undamaged containers.

1.6 PROJECT CONDITIONS

- A. Work notifications: Notify Engineer at least 7 working days prior to start of seeding operation.
- B. Protect existing utilities, paving and other facilities from damage caused by seeding operations.
- C. Perform seeding work only after planting and other work affecting ground surface has been completed.

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- D. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.
- E. Provide hose and lawn watering equipment as required.

1.7 WARRANTY

- A. Hydroseeding shall be warranted for a period of 1 year following acceptance

PART 2 PRODUCTS

2.1 MATERIALS

- A. Grass Seed:
 - 1. Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' - Rules for Testing Seeds - for purity and germination tolerances.
 - 2. Seed Mixture: Provide seed of grass species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed as indicated on Schedules at the end of this section.
- B. Fertilizer:
 - 1. Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
 - 2. Type A: Starter fertilizer containing 20% nitrogen, 12% phosphoric acid and 8% potash by weight or similar approved composition.
- C. Ground limestone: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20 mesh sieve. Use if determined by soil tests to be necessary.
- D. Water: Free of substance harmful to grass seed and grass growth. Hoses or other methods of transportation furnished by Contractor.
- E. Topsoil
 - 1. Topsoil shall be fertile, friable and representative of productive soil, capable of sustaining vigorous plant growth and shall be free of clay lumps, sub-soil, weeds, seeds and other foreign debris.
 - 2. Acidity range shall be between pH 5.0 and 7.5.
 - 3. Organic content shall be not less than 5% and not greater than 30%.
 - 4. Clay content shall range between 5% and 25%.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine finish surfaces, grades, topsoil quality and depth. Do not start seeding work until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Limit preparation to areas which will be immediately seeded. Spread topsoil, fine grade.

- B. Treat lawn areas with "Round Up", by Monsanto, per label directions as required to kill existing vegetation prior to seeding.
- C. Scarify surface of lawn areas to minimum depth of 3". Remove stones over 1" in any dimension and sticks, roots, rubbish and extraneous matter.
- D. Apply 3" minimum topsoil to entire area to be seeded.
- E. Grade lawn areas to smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain.
- F. Apply limestone, if required by soil test results, at rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 nor more than 6.8. Distribute evenly by machine and incorporate thoroughly into topsoil.
- G. Apply Type A fertilizer at the rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. (43 lbs./acre). Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to depth of 1" by discing or other approved methods. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil.
- H. Dampen dry soil prior to seeding.
- I. Restore prepared area to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.

3.3 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.
- B. Mix slurry with nonasphaltic tackifier.
- C. Apply slurry uniformly to all areas to be seeded in a 1-step process. Apply mulch at the minimum rate of 1500 lb per acre (16.5 kg per 100 sq. m) dry weight but not less than the rate required to obtain specified seed-sowing rate.
- D. Apply slurry uniformly to all areas to be seeded in a 2-step process. Apply first slurry application at the minimum rate of 500 lb per acre (5.5 kg per 100 sq. m) dry weight but not less than the rate required to obtain specified seed-sowing rate. Apply slurry cover coat of fiber mulch at a rate of 1000 lb per acre (11 kg per 100 sq. m).

3.4 MAINTENANCE

- A. Proper maintenance shall be performed to adequately establish seed

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3.5 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from seeding operations.

END OF SECTION

SECTION 02930

GENERAL LANDSCAPE MATERIALS AND FINAL GRADING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Handling and installation of existing topsoil materials.
- B. Supply and installation of additional topsoil materials.
- C. Final grading of topsoil for finish landscaping.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control
- B. Section 02200 - Earthwork
- C. Section 02211 - Rough Grading
- D. Section 02220 - Soil Erosion Control

PART 2 PRODUCTS

2.1 TOPSOIL

- A. Topsoil, as provided by the Contractor, shall meet the following requirements:
- B. Topsoil shall be fertile, friable, and representative of productive soil, capable of sustaining vigorous plant growth, and shall be free of clay lumps, sub-soil, weeds, seeds, and other foreign debris.
- C. Acidity range shall be between pH 5.0 and 7.5.
- D. Organic content shall be not less than 5% and not greater than 30%.
- E. Clay content shall range between 5% and 25%.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify building and trench backfilling have been inspected.
- B. Verify subsoil has been contoured and compacted.

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3.2 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove and replace subsoil contaminated with petroleum products.
- C. Scarify surface to a depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL

- A. Place topsoil in areas as designated on the Contract Drawings, Thickness shall be as called for on the Contract Drawings. Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread topsoil close to existing plant life, buildings, and other above-grade appurtenances to prevent damage.
- E. Compact placed topsoil as called for on the Contract Drawing.
- F. Remove surplus subsoil and topsoil from the site.
- G. Leave stockpile area and site clean and raked, ready to receive landscaping, on both the facility site and remote storage site.

3.4 TOLERANCES

- A. Top of Topsoil: Plus or minus 1/2 inch or as called for on the Contract Drawings.

3.5 PROTECTION

- A. Protect landscaping and other features remaining as final work.
- B. Protect all other structures, utilities, paving and other above grade appurtenances.

END OF SECTION

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SECTION 02970

LANDSCAPE MAINTENANCE AND GUARANTEE STANDARDS

PART 1 GENERAL

1.1 DESCRIPTION

- A. The requirements of this section include a one-year warranty period from the date of final inspection performed by the Owner for all landscape features unless a longer period is specified elsewhere in the Specifications.

1.2 PROJECT WARRANTY

- A. Warranty seeded or sodded areas through specified maintenance period.
- B. Warranty trees, transplanted trees, and shrubs, for a period of two years after the date of substantial completion, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Installer's control.
- C. Based upon the opinion of the Owner, all plants found dead or unhealthy shall be removed and replaced.
- D. Based upon the opinion of the Owner, all plants in doubtful condition shall be removed and replaced or shall have an extended warranty period.
- E. The extended warranty period is one full-growing season.
- F. At the end of the extended warranty period all plants found dead, unhealthy, or in doubtful condition shall be removed and replaced, based upon the opinion of the Owner.
- G. Make replacements during growth season following the end of warranty or extended warranty season.
- H. Only one replacement will be required at the end of the warranty or extended warranty period, except for losses or replacements due to failure to comply with specified requirements.

1.3 MAINTENANCE

- A. Begin maintenance immediately after planting.
 - 1. Maintain trees, transplanted trees, shrubs, and other plants until final acceptance.
 - 2. The Contractor shall be responsible for watering all plantings through the maintenance period and shall keep guy wire taut, raise tree balls which settle, furnish, and apply sprays as necessary to keep the plantings free of disease and furnish and apply sprays as necessary to keep the plantings free of disease and insects until the end of the warranty period. All evergreens shall be watered thoroughly in the Fall to ensure they do not go into the Winter dry. Arrange with the Owner to walk the site monthly during the maintenance period to review maintenance standards. Remove all stakes,

guy wires, tree wrap paper, dead twigs, and branches from tree and plant materials at the end of this maintenance warranty period.

B. Maintain Seeded Grass Areas

1. The Contractor shall establish a dense lawn of permanent grasses, free from lumps and depressions or any bare spots, none of which is larger than one foot of area up to a maximum of 3% of the total seeded lawn area. Any part of the seeded lawn that fails to show uniform germination shall be reseeded until a dense grass cover is established.
2. The Contractor shall water and provide a minimum of two cuttings of the lawn or more as necessary until the final inspection and acceptance of the seeded lawn area by the Architect/Engineer. When the lawn reaches 3 inches in height it shall be cut to 2" inches in height.
3. If seeded in fall and not given full 60 days of maintenance, or if not considered acceptable at that time, continue maintenance following spring until acceptable lawn is established.
4. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading, replanting, and applying herbicides, fungicides, and insecticides as required to establish a smooth, acceptable lawn, free of eroded or bare areas.
5. Water as required to maintain adequate surface soil moisture for proper seed germination. Continue watering as required for not less than 30 days. Thereafter apply 1/2" of water twice weekly until acceptance. When irrigation is not present, seeding should take place in early spring or fall.
6. Repair, rework, and re-seed all areas that have washed out, are eroded, or do not catch.

C. Maintain Sodded Grass Areas

1. Maintain sodded lawn areas, including watering, spot weeding, mowing, application of herbicides, fungicides, insecticides, and resodding until a full, uniform stand of grass free of weed, undesirable grass species, disease, and insects is achieved and accepted by the Architect/Engineer.
2. Water sod thoroughly every 2 to 3 days, as required to establish proper rooting.
3. Repair, rework and resod all areas that have washed out or are eroded. Replace undesirable or dead areas with new sod.
4. Mow lawn areas as soon as lawn top growth areas a 3" height. Cut back to 2" height. Repeat mowing as required to maintain specified height. Not more than 40% of grass shall be removed at any single mowing.
5. The Contractor shall water and provide a minimum of two cuttings of the lawn or more as necessary until final inspection and acceptance of seeded lawn areas by the Owner.
6. Provide a uniform stand of grass by watering, mowing, and maintaining lawn areas until final acceptance. Resod areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by the Owner.
7. Sodded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, even colored viable lawn is established, free of weeds, undesirable grass species, disease, and insects.

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- D. Inspection and Final Acceptance
 - 1. When landscape work is completed, including maintenance, the Owner will, upon request, make a final inspection to determine acceptability.
 - 2. Landscape work may be inspected for acceptance in parts agreeable to the Owner provided work offered for inspection is complete, including maintenance.
 - 3. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by the Owner and found acceptable. Remove rejected plants and materials promptly from project site.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 02990

PERMITS

PART 1 GENERAL

1.1 GENERAL

- A. The Permits included in this Section have been applied for by the Owner with the cost to the Contractor noted. They are provided as information for the Contractor because the requirements and regulations contained in these documents shall be adhered to by the Contractor as they pertain to the work done under this Contract.
- B. Should any contradictions or discrepancies between the requirements of the Permits Section and other Sections of these Specifications be found, this sections language shall have precedence.

1.2 RELATED SECTIONS

- A. Section 00700 - General Conditions
- B. Section 00800 - General Supplementary Conditions
- C. Section 01000 - General Specifications
- D. Section 02200 – Earthwork
- E. Section 02220 - Soil Erosion Control
- F. Section 02930 - General Landscaping Materials and Final Grading

1.3 PERMIT

- A. The following permits are contained hereinafter with costs to the Contractor as per City determination. Each site will be submitted under separate permit.
 - 1. City of Ann Arbor - Soil Erosion and Sediment Control Permit.
 - 2. Demolition and Building Permits – Demolition and Electrical.
 - 3. DPW – Utility Permits.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 16010

GENERAL ELECTRICAL, INSTRUMENT, AND CONTROL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General requirements for electrical power, instrumentation, and controls systems.

1.2 REFERENCES

- A. All equipment and workmanship shall be in conformance with the following documents:
 - 1. National Electrical Code, latest approved edition.
 - 2. Any and all Federal, State, and/or local codes, ordinances, or regulations.
 - 3. Latest approved standards of ISA, IEEE, ANSI, NEMA, and Underwriters' Laboratories.
- B. All equipment shall be designed, constructed, installed, and tested in conformity with all requirements, as a minimum, of applicable standards of IEEE, NEMA, ISA, ANSI, ICEA, and OSHA, except as modified herein.

1.3 GENERAL REQUIREMENTS

- A. The Contractor shall furnish all labor, material, and equipment required for the demolition and installation of the electrical systems and the completion of the work as herein specified and/or indicated on the Drawings. It is the intent that the Drawings and Specifications, which are general only, shall provide for finished, first-class work, and that the equipment and appurtenances thereto shall be of such construction and details, and of such materials, as to function completely and properly, and so as to be of long life; and such as not to require excessive upkeep or maintenance; and that operation shall be simple and control convenient. Any items omitted therefrom which are clearly necessary for the completion of the work or its appurtenances shall be considered a portion of the work though not directly specified or shown. All work shall conform with NECA 1-2010, Good Workmanship in Electrical Contracting.
- B. Unless otherwise specified, provide tools, equipment, apparatus, transportation, labor, and supervision to complete and place in satisfactory operation the work indicated on the Drawings and specified herein. Where permits or inspection fees are required in connection to the work under this Specification, the Contractor shall secure such permits and pay all fees.
- C. Where any public or private utilities are encountered, the Contractor shall be responsible for any damages thereto resulting from his operations. Any existing lines or utilities damaged during the construction and which are not to be abandoned or removed, shall be replaced or repaired. The Contractor shall be responsible for determining the exact location of all underground or otherwise concealed utilities, conduit runs, piping, etc. which may interfere with construction or which require modifications.

- D. All work shall be done in conformity with the applicable requirements of the codes, rules, and regulations of public utilities and all others having jurisdiction.
- E. Where the Specifications describe or the Drawings show materials of higher quality than required by the above rulings and codes, the Drawings and Specifications shall govern the quality of materials which shall be furnished.
- F. The wire, conduit, and equipment sizes shown on the Contract Drawings are based on estimated ratings. If ratings of equipment as furnished under the Contract exceed the estimated ratings, the wire, conduit, and equipment sizes shall be adjusted to meet NEC requirements at no additional cost to the Owner.
- G. The phrase "below grade," when used in reference to the interior of buildings, rooms, or other structures in these Specifications and on the Drawings, shall apply to the entire internal volume of the room, area, or structure where 50% or more of the volume is actually below the average of the exterior finished grade elevations. In all other cases, the phrase shall only apply to the volume of space actually below finished grade.
- H. Dry locations are defined as interior; above grade; heated rooms, structures, buildings, cabinets, enclosures, etc. not normally subject to dampness or wetness. Damp locations are defined as interior; above grade; unheated rooms, structures, and buildings. Wet locations are defined as all outdoor areas; all underground rooms, structures, building areas, vaults, etc.; whether heated or unheated. Refer to National Electrical Code Article 100, "Location:" for additional definitions.

1.4 PROJECT CONDITIONS

- A. Before submitting his proposal, this Contractor shall be held to have examined the site and satisfied himself as to the existing conditions under which he will be obliged to work. The Contractor will be allowed no claim(s) for extra(s) due to his failure to make the above examination.

1.5 INSPECTION

- A. At the proper time, the Contractor shall file application for inspection of his work with the local, State, or National authority having jurisdiction and shall deliver to the Owner all required certificates attesting to approval by such authorities.

1.6 GUARANTEE

- A. The equipment and installation furnished under this Section shall be guaranteed for a period of one (1) year as specified under Section 01700, Contract Closeout.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. All materials and equipment shall be new, except where specifically identified otherwise.

- B. All materials and equipment shall be listed or labeled by Underwriters' Laboratories, Inc., except for materials and equipment not available from any source with such listing and/or labeling, or as specifically required by the Division 16 Sections.
- C. All conductor terminations, lugs, and connectors on all equipment supplied under this Contract shall be 75°C rated for copper conductors.
- D. Concrete for electrical work shall be ready-mix or transit mixed concrete to the requirements of ASTM C94, latest edition. Concrete shall have a compressive strength, after twenty eight (28) days, of 3,500 psi (minimum).

2.2 LOOSE AND DETACHABLE PARTS

- A. The Contractor shall retain all loose and small detachable parts of the apparatus and equipment furnished under his Contract, until the completion of his work, and shall then turn same over to the Owner or his representative delegated to receive them and obtain from the Owner an itemized receipt, therefore, in triplicate, the Owner retaining the original. The Contractor shall retain one copy of this receipt for his files and shall attach the other two to any request for final payment for the work.

2.3 STANDARDS

- A. All materials shall be new and shall conform as a minimum with NEMA, ANSI, and Underwriters' Laboratories, Inc. (UL) in every case where such a standard has been established for the particular type of material in question.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

- A. All floor mounted equipment shall be provided with a minimum 4 inch high concrete pad, unless a higher dimension is shown (or called for) on the Drawings.
- B. Material and equipment furnished and installed by the Contractor shall be completely protected against damage, pilferage, dampness, or abuse until turned over and accepted by the Owner.
- C. The installation of all electrical, instrumentation, and control equipment shall meet the requirements of the State and Federal Occupational Safety and Health Statutes.

3.2 DRAWINGS AND MEASUREMENTS

- A. Drawings shall be submitted in accordance with Sections 01300 and 01700 of these Specifications and as specified hereinafter. No work shall be undertaken until the Engineer has reviewed and approved the shop drawings. Only approved materials shall be installed and only approved installation methods shall be used.
- B. The Drawings show the arrangement, general design, and extent of the systems. The work is shown on the Drawings by symbols, as shown in a legend on the Drawings. Equipment is

shown in its general location, except where in certain cases the Drawings may include details giving the exact location and arrangement. Existing, underground or otherwise concealed utilities, piping, conduit runs, etc. indicated on the Drawings are shown in approximate locations and orientations only; the Contractor shall field verify exact locations.

- C. The Drawings are not intended to be scaled for roughing-in measurements nor to serve as shop drawings. Where drawings are required for these purposes or have to be made from field measurements, they shall be prepared by the Contractor. Field measurements necessary to determine the required quantities of materials and fitting the installation of all materials and equipment into the building construction shall be taken by the Contractor.
- D. Installation drawings and manufacturer's shop drawings are required for all electrical, instrumentation, and control work. Installation drawings shall show panel layout, conduit connection sizes, and location and equipment foundations, details, and locations, accurately dimensioned. Exposed runs of conduit need not be dimensioned. Conduit layout and installation drawings shall be submitted for approval and shall show all conduit runs, complete from origination to termination, and shall indicate conduit sizes and fills, raceway system components, methods and spacing of supports, etc.
- E. Control schematics shall be provided for all modified existing control circuits. Control schematics shall use the ladder diagram type format incorporating line numbers, operation function statements, contact location line numbers with underlines indicating normally closed contacts. A description of operation of each device and complete written sequence of operation shall be provided with all control schematics. Format and symbols shall be as approved by the Owner. Wire and terminal numbers shall be clearly shown.
- F. Upon completion of the work, complete "As-Built" drawings shall be provided. For additional requirements see Section 01700, Contract Closeout, Project Record Documents.

3.3 STORING OF EQUIPMENT

- A. All equipment shall be stored in accordance with the manufacturer's recommendations. A letter from the manufacturer shall be provided stating those recommendations.
- B. All equipment which has been set in place but not in operation shall be protected from damage or deterioration from whatever causes in accordance with the manufacturer's recommendations until the equipment has been accepted by the Owner.
- C. All wire and cable shall be stored on the original, manufacturer's reels, protected from the weather, and all cable end seals shall be maintained intact until the cable is installed.
- D. During construction, all electrical equipment insulation shall be protected against absorption of moisture and metallic components shall be protected against corrosion by strip heaters, lamps, or other acceptable means. This protection shall be provided immediately upon receipt of the equipment and maintained continuously.

3.4 CLEANUP

- A. After substantial completion and prior to final acceptance, all electrical equipment shall be cleaned up, interior and exterior, to be free of dust and other foreign matter.

3.5 PAINTING

- A. The exterior of all enclosures shall be cleaned and touched up with matching paint where scratched or marred so that the exterior presents an "as new" appearance.
- B. All factory finished equipment shall be protected from damage during erection, thoroughly cleaned after erection, and touched up as required. If the factory finish has, in the opinion of the Owner, been seriously damaged, the equipment shall be refinished.

END OF SECTION

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SECTION 16110

RACEWAYS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal conduit.
- B. Non-metallic conduit.
- C. Fittings and conduit bodies.

1.2 RELATED SECTIONS

- A. Section 16010 – General Electrical, Instrument, and Control Requirements.
- B. Section 16170 – Grounding and Bonding.

1.3 REFERENCES

- A. ANSI C80.1 – Rigid Steel Conduit, Zinc Coated.
- B. ANSI/NEMA FB 1 – Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- C. ANSI/NFPA 70 – National Electrical Code.
- D. NECA 101-2013, Steel Conduits (Rigid, IMC, EMT).
- E. NECA 111-2003, Standard for Installing Non-metallic Raceways.
- F. NEMA RN 1 – Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
- G. NEMA TC 2 – Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80).
- H. NEMA TC 3 – PVC Fittings for Use with Rigid PVC Conduit and Tubing.
- I. UL 6 Standard for Rigid Metal Conduit.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Conduit layout and installation drawings shall be submitted for approval and shall show all conduit runs, complete from origination to termination, and shall indicate

conduit sizes and fills, raceway system components, methods and spacing of supports, etc. Indicate materials, finishes, dimensions, listings, and standards compliance.

- C. Product Data: Provide data for conduit, tubing, duct, fittings, and accessories.
- D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle Products to site under provisions of Section 01600.
- B. Accept conduit on site. Inspect for damage.
- C. Conduit shall be delivered at the construction site in not less than ten foot lengths; each length of conduit to have approval label of the Underwriters.
- D. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- E. Protect PVC conduit from sunlight.

1.6 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Verify routing and termination locations of conduit prior to rough-in.
- C. Conduit routing is shown on Drawings in approximate locations, unless dimensioned. Route as required to complete the raceway system.

PART 2 PRODUCTS

2.1 CONDUIT AND FITTINGS

- A. Provide all conduit, conduit fittings, outlet boxes, pull boxes, supports, hangers, plates, and such other items as are incidental to or required for a complete installation, all of which shall be made of cast iron, malleable iron, or galvanized steel, unless indicated otherwise.
- B. No threadless couplings or running threads will be permitted on rigid conduits.
- C. No conduit smaller than 3/4 inch shall be used, unless otherwise indicated or specified.
- D. All raceways shall be marked with the manufacturer's name or trademark as well as type of raceway and size. This marking shall appear at least once every 10 feet and shall be of sufficient durability to withstand the environment involved.

2.2 RIGID STEEL CONDUIT

- A. Rigid steel conduits shall consist of heavy wall, mild steel tube, hot-dipped galvanized with threads electrogalvanized after cutting, and especially selected with reference to uniformity of thickness and freedom from defects. All fittings shall be suitable and approved for use in rigid steel conduit systems.
- B. Manufacturers:
 - 1. Wheatland Tube Company
 - 2. Allied Tube & Conduit Corporation
 - 3. Maverick Pipe
 - 4. Or Approved Equal
- C. Rigid Steel Conduit: ANSI C80.1, UL 6.
- D. Fittings and Conduit Bodies: ANSI/NEMA FB 1; UL Standard 514B; all steel fittings.

2.3 NON-METALLIC, PVC CONDUIT

- A. Manufacturers:
 - 1. Thomas & Betts – Carlon
 - 2. JM Eagle
 - 3. Osburn Associates, Inc.
 - 4. IPEX - Scepter
 - 5. Cantex
 - 6. Or Approved Equal
- B. Description: NEMA TC 2; Schedule 40 PVC.
- C. Fittings and Conduit Bodies: NEMA TC 3.
- D. Plastic (PVC) conduit shall be heavy wall, Schedule 40 with integral bell, polyvinyl chloride (PVC), non-metallic conduit.

2.4 MISCELLANEOUS FITTINGS AND MATERIALS

- A. Insulated grounding bushings shall be Type HBLG as manufactured by O.Z./Gedney, American Fittings Corp., Thomas & Betts, or equal.
- B. Insulating bushings shall be high impact resistant, thermoset plastic, 150°C rated, Type A as manufactured by O.Z./Gedney, American Fittings Corp., Thomas & Betts, or equal.
- C. All locknuts shall be of the sealing type, O.Z./Gedney Type SLG, Appleton, American Fittings Corp., Thomas & Betts, or equal.
- D. Liquidtight hubs shall have a sealing ring between the fitting and the box and an insulated throat to insure protection of the wires as pulled. Hubs shall be made of nodular or malleable iron steel, zinc plated for corrosion resistance, UL listed, and shall meet or exceed the requirements of UL test 514B. Liquidtight hubs shall be Bridgeport, O.Z./Gedney Type CHM, Ideal Industries 75-000 Series, American Fittings Corp., Thomas & Betts, or equal.

PART 3 EXECUTION

3.1 INSTALLATION OF RACEWAYS

- A. Install conduit in accordance with NECA 101-2013, Steel Conduits (Rigid, IMC, EMT).
- B. Arrange supports to prevent misalignment during wiring installation.
- C. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- D. Do not attach conduit to ceiling support wires.
- E. Arrange conduit to maintain headroom and present neat appearance.
- F. Joints shall be made tight with standard couplings and corners turned with elbows or long radius bends in pipe.
- G. The Contractor shall provide and install, where required, the additional steel to adequately support all conduits, boxes, and all other electrical equipment.
- H. All conduit shall be dry, clean, and free of obstructions before conductors are pulled in. If there is evidence of moisture, obstructions, or foreign matter in the conduit when the conductors are installed, the wiring shall be removed and the conduit cleaned to the satisfaction of the Owner. All wiring showing evidence of damaged insulation shall be replaced.
- I. Wherever a conduit enters an electrical equipment enclosure from an underground or outdoor location and other locations where indicated on the Drawings, the conduit opening shall be sealed after the wires and/or cables are pulled. One and one half (1½) inch and smaller conduits with more than 20 percent wire fill may be sealed with conduit sealing compound; all other conduits, where required, shall be provided with conduit sealing bushings or compound bushings with ground conductor connectors, as manufactured by O.Z./Gedney or equal. Conduit sealing compound shall be forced into conduits to a minimum depth of 12 inches.
- J. Field bends in conduit shall not be of a lesser radius than that of manufactured elbows of the same trade size and shall show no flattening of the conduit. Conduit bends shall be held to as large a radius as possible for ease in pulling of conductors and to provide a neatly installed appearance. Generally, conduits 1" and smaller shall be bent in the field. Other conduit bends shall conform to the following: 2" and 2½" conduit, 24" radius, 3" and larger with a minimum radius of 36". Except where conduit runs are shown in exact detail on Drawings, the maximum length of straight conduit runs shall be 200 ft. between pull boxes, with 50 ft. deducted for each 90 degree bend and 25 ft. deducted for each 45 degree bend, reduction in length for all other angle bends shall be figured on a similar basis.
- K. Metallic sleeves containing a ground conductor shall be bonded at each end to the ground conductor.
- L. The ends of all metallic conduits or elbows shall be cut square, reamed, and threaded.

- M. The threads of all steel conduit connections concealed in concrete shall be coated at the time of installation with No. B69A45 Zinc clad primary coating, as manufactured by Sherwin William's Corp., Ideal Industries No. 40-630, CRC Chemicals Zinc-It, or equal.
- N. All metallic conduits, except those terminated in metal boxes or enclosures without knockouts and secured with double locknuts, integral hubs, or liquidtight hubs, shall be terminated with insulated grounding bushings. Conduits terminated in metal boxes or enclosures without knockouts and secured with double locknuts shall be terminated with an insulating bushing.
- O. All conduits and sleeves, metallic and non-metallic, intended for the passage of wire or cable and not terminated with a fitting, shall be terminated with a bushing or end bell.
- P. Install non-metallic conduit in accordance with manufacturer's instructions.
- Q. Join non-metallic, PVC conduit using cement as recommended by manufacturer. Wipe non-metallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum. The Contractor shall allow 24 hours, minimum, for all solvents to evaporate after cementing the last joint in the raceway system before pulling in any wires or cables.

END OF SECTION

SECTION 16123
WIRE AND CABLE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Building wire.
- B. Irrigation Control Cable
- C. Wiring connectors and connections.

1.2 RELATED SECTIONS

- A. Section 16110 – Raceways.

1.3 REFERENCES

- A. ANSI/NFPA 70 – National Electrical Code.
- B. Underwriters’ Laboratories Standard UL-83.
- C. Underwriters’ Laboratories Standard UL-44.
- D. Federal Specification A-A-59544.
- E. ANSI Standard C33.80.
- F. ICEA – Insulated Cable Engineers Association.
- G. ASTM – American Society for Testing and Materials.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide for all wire and cable.
- C. Manufacturer’s Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency.

1.5 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Wire and cable routing shown on Drawings is approximate. Route wire and cable as required to meet Project Conditions.

- C. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

1.6 COORDINATION

- A. Determine required separation between cable and other work.
- B. Determine cable routing to avoid interference with other work.

PART 2 PRODUCTS

2.1 GENERAL

- A. All wires and cables shall be permanently identified, at intervals not exceeding 3 feet, indicating type, size, voltage rating, and manufacturer's name.
- B. All wires and cables shall be continuous and shall be delivered in reels or in coils. Reels and coils shall be plainly marked for complete identification, including the wire or cable size, the number of conductors, the type of wire or cable, length, weight, thickness and character of the insulation, and the name of the manufacturer.
- C. All coils and reels of wires or cables shall carry original date perforated inspection labels of the Underwriter's laboratories, Inc. showing the number of feet and type of wire contained.

2.2 MANUFACTURERS – BUILDING WIRE

- A. General Cable
- B. Southwire Corporation
- C. Approved Equal

2.3 BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor: Annealed, uncoated copper. All conductors shall be stranded. ASTM designation B-3.
- C. Conductor Temperature Rating: 90°C in wet locations; 90°C in dry locations.
- D. Insulation Voltage Rating: 600 volts.
- E. Insulation: ANSI/NFPA 70, Type THWN; high temperature polyvinyl chloride with nylon jacket or Type XHHW-2, high temperature cross-linked polyethylene.

2.4 MANUFACTURERS – IRRIGATION CONTROL CABLE

- A. Paige Wire

- B. Southwire Corporation
- C. Service Wire Co.
- D. Approved Equal.

2.5 IRRIGATION CONTROL CABLE

- A. Description: Multiple conductors of solid bare copper meeting ASTM B-3, insulated with .015” of 60 degree C color coded PVC insulation, wet/dry, cabled with .025” of an extruded PE jacket with a nylon rip cord. Cable shall be suitable for direct burial, rated 30 volts. Outer jacket shall be UV and sunlight resistant. RoHS compliant.
- B. Conductor: 18 AWG, number of conductors as required for installation.
- C. Splicing: Shall be avoided. Where required, for direct burial or in valve box, provide 3M Company, Model No. DBR/Y-6.

2.6 MANUFACTURERS – WIRING CONNECTORS AND ASSOCIATED MATERIALS

- A. Solderless Pressure Connectors:
 - 1. 3M™ Company Model Scotchlok
 - 2. Thomas & Betts Model Sta-Kon
 - 3. Burndy Model Insulug Type TN
- B. Spring Wire Connectors:
 - 1. 3M™ Company Model Scotchlok
 - 2. Ideal Model Wing-Nut
- C. Compression Connectors:
 - 1. 3M™ Company Model Scotchlok
 - 2. Thomas & Betts Model Color-Keyed
 - 3. Burndy Model Hylug
- D. Tap Connectors:
 - 1. Thomas & Betts Model Color-Keyed
 - 2. Burndy Model Crimpit
 - 3. Anderson Model Crimptaps
- E. Watertight, Twist-On Connectors:
 - 1. 3M™ Company Direct Bury Splice Kits
 - 2. King Innovation “DryConn”
 - 3. Ideal Industries, Inc. Twister DB Plus
- F. Watertight, Insulated Connector Blocks:
 - 1. Utilco Type USPA-SS, Type PSA-SS, or Type PED-SS
 - 2. IlSCO Type USPA-SS
- G. Electrical Insulating Tape:
 - 1. 3M™ Company “Scotch” No. 33+

- 2. Plymouth “Premium Black”
- H. High Temperature Tape:
 - 1. 3M™ Company “Scotch” No. 70
 - 2. Plymouth “Plysil”
- I. Fireproofing Tape:
 - 1. 3M™ Company “Scotch” No. 77
 - 2. Plymouth No. 50
- J. Woven Fiberglass Tape:
 - 1. 3M™ Company “Scotch” No. 69
 - 2. Plymouth “Plyglas”
- K. Color Coding Tape:
 - 1. 3M™ Company “Scotch” No. 35
 - 2. Plymouth “Slipknot” No. 45
- L. Insulating and Watertight Sealing Materials:
 - 1. 3M™ Company “Scotchcast” kits
 - 2. Raychem WCS Series heat shrinkable sleeves
 - 3. 3M™ Company 8400 Series cold shrink materials
 - 4. 3M™ Company “Scotchkote” sealant
- M. Watertight Cord Grip Fittings:
 - 1. Crouse-Hinds CGB-SG Series
 - 2. Appleton Electric Co.
 - 3. Thomas & Betts
- N. Cable or Cord Strain Relief:
 - 1. Hubbell-Kellems
 - 2. Daniel Woodhead Co.
- O. Cable Pulling Lubricant:
 - 1. American Polywater “Dyna-Blue”
 - 2. Ideal “Aqua Gel”
 - 3. Minerallac “Golden Glide”
 - 4. 3M™ Company “GEL”

2.7 WIRING CONNECTORS AND ASSOCIATED MATERIALS

- A. All wiring connectors shall be 75°C rated and suitable for use on copper conductors.
- B. Cable or cord strain reliefs shall consist of stainless steel wire mesh with support bale. Strain reliefs shall be of the split rod type where required or indicated on the Drawings.
- C. Cable Pulling Lubricant:
 - 1. Lubricant shall be UL listed and approved for use on the cable jacket or insulation.
 - 2. Lubricant shall be polymer based and shall dry completely when exposed to air.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire and cable has been completed.

3.2 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

3.3 WIRING METHODS

- A. Exterior Locations:
 - 1. Wire and cable for general power, light, and control for use in raceways exterior to buildings and in underground raceways shall be building wire Type THWN or Type XHHW-2 insulation.
- B. Use wiring methods indicated on Drawings.
- C. Color Coding:

The color schedule for the conductor insulation of wire and cable shall conform to the following:

 - 1. Three phase lighting and power, 208Y/120 VAC-Black, Red, Dark Blue, White or Gray, and Green ground.
 - 2. Three phase lighting and power, 120/240 VAC-Black, Red, Orange (high leg to ground), White or Gray, and Green ground.
 - 3. Single phase lighting and power, 120/240 VAC-Black, Red, White or Gray, and Green ground.
 - 4. Three phase lighting and power, 480 VAC-Brown, Orange, Yellow, and Green ground.
 - 5. Three phase lighting and power, 480Y/277 VAC-Brown, Orange, Yellow, Gray, and Green ground.
 - 6. DC power – Red with White stripe (+) and Light Blue with White stripe (-).
 - 7. Single conductor control, AC voltage – Red.
 - 8. Multi-conductor control cables – ICEA Method 1.
 - 9. Alarm, annunciator, instrumentation, graphic, and telemetering (if not shielded), AC voltage – Pink.
 - 10. Alarm, annunciator, instrumentation, graphic, and telemetering (if not shielded), DC voltage – Light Blue.
 - 11. Intrinsically safe circuits – Purple.
 - 12. On wire sizes larger than Number 8 AWG and/or where authorized by the Owner, coding may be identified by taping with the appropriate colored self-adhesive vinyl color coding tape.
 - 13. Grounding conductors shall be continuous green or bare for all systems.
 - 14. Neutral conductors shall be continuous white or gray for all systems.
- D. The installation of intrinsically safe circuits shall meet all requirements of the NEC.
- E. Wiring Connections:

1. Dry location splices and tap connections shall consist of compression connectors or tap connectors, taped to 150 percent of insulation rating of the conductors.
2. Final connections to equipment wire leads for No. 8 AWG and smaller wire in dry locations only, except 480 volt motor leads, may be made with spring wire connectors.
3. Wet and damp location splices and tap connections shall consist of compression connectors or tap connectors with insulating and watertight sealing materials; water tight, twist-on connectors for wire sizes up to three No. 10 AWG; or watertight, insulated connector blocks; providing watertight connections suitable for direct burial.
4. All conductor terminations at screw terminals shall consist of solderless pressure connectors, except where conductor terminations are included with the equipment being connected.
5. Insulation of connections in lighting fixture and high temperature equipment shall consist of silicone rubber type high temperature tape with a woven fiberglass tape over-wrap.
6. Electrical insulating tape (plastic type) shall be used on all splice and tap connections, unless wire manufacturer's recommendations require otherwise.

3.4 INSTALLATION

- A. Pull all conductors into raceway at same time. Cable pulling tensions shall not exceed manufacturer's recommended values.
- B. Use suitable wire pulling lubricant for wire, No. 4 AWG and larger, and for all cables. No soap flakes, vegetable oils, clays, or grease shall be permitted in raceways.
- C. Use suitable cable fittings and connectors.
- D. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- E. Clean conductor surfaces before installing lugs and connectors.
- F. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
- G. Wire and cable shall be supported in vertical runs by insulated clamps so that wire or cable weight will not be unduly supported from conductor terminations.
- H. Spade or fork tongue lugs shall not be used, except where approved by the Owner.
- I. Wires and cables shall, in general, be run continuously, without splicing, from origination to termination. No splices shall be permitted in any feeder circuit, except in outlet, junction, and/or pull boxes, or where specifically noted on the Drawings. Use sufficient length of wire for connecting to equipment without straining. All methods of splicing shall meet cable manufacturer's recommendations. All splices shall be carefully placed in outlet boxes, etc. without crowding. No splicing shall be permitted in signal cables.
- J. Splices and tap connections shall be made in junction boxes only; conduit type fittings shall not be used as junction boxes.

- K. Wires and cables shall be installed in raceways, as indicated on the Drawings or required, and shall provide a complete and operating system.
- L. All wires and cables shall be tagged as specified in Section 16195.
- M. Where an exposed run of cable or cord enters a box or enclosure, provide a watertight cord grip fitting suitable for the cable or cord diameter.

3.5 INTERFACE WITH OTHER PRODUCTS

- A. Identify wire and cable under provisions of Section 16195.
- B. Identify each conductor with its circuit number or other designation indicated on Drawings.

3.6 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Sections 01400.
- B. Inspect wire and cable for physical damage and proper connection.
- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
- D. Verify continuity of each branch circuit conductor.
- E. Verify continuity of each feeder conductor.

END OF SECTION

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SECTION 16170
GROUNDING AND BONDING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

1.2 RELATED SECTIONS

- A. Section 16010 - General Electrical, Instrument, and Control Requirements.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.4 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data for grounding electrodes and connections.
- C. Test Reports: Indicate facility's overall resistance to ground.
- D. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation and installation of exothermic connectors.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01700.
- B. Accurately record actual locations of grounding electrodes.

1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. or other testing firm acceptable to authority having jurisdiction, as suitable for purpose specified and shown.

PART 2 PRODUCTS

2.1 ROD ELECTRODES

- A. Ground rods shall be 3/4" diameter by 10 feet long and shall have copper jackets and steel cores. The rods shall be as manufactured by Blackburn/Eritech, Erico Electrical Products, Harger, or equal.

2.2 MECHANICAL CONNECTORS

- A. All compression connectors, lugs, etc., used in grounding circuits in any location shall have bolts, nuts, etc., of silicon bronze alloy equal to "Everdur" metal. Grounding connections, clamps, etc., shall be as manufactured by Burndy Engineering Company, Thomas and Betts Company, Delta-Star Electric Company, Harger, or equal.
- B. Fittings for bonding a grounding conductor to metallic conduit shall be Thomas and Betts Series 3900BU or equal. Fittings for bonding a grounding conductor to its own conduit shall be Burndy Engineering Company GAR-BU Series, Thomas and Betts Series 3900, Harger, or equal.
- C. Where connections to ground rods or ground mats must be disconnected for testing, the fittings shall be Burndy Engineering Co. Type GD, GG, GAR; Thomas and Betts Co. Series 3902BU; Harger; or equal.

2.3 EXOTHERMIC CONNECTIONS

- A. Connections to steel, between conductors, and for water stops shall consist of exothermic welding similar and equal to Burndy Engineering Company's "Thermoweld", Erico Products, Inc. "Cadweld Kits", Thomas & Betts Corp. "Furseweld", or Harger.

2.4 CONDUCTORS

- A. Grounding conductors, loops, and risers shall be bare, stranded, soft-drawn copper and shall be of the sizes indicated on Drawings.
- B. All bonding jumpers shall be copper and of a cross-sectional area at least equal to their corresponding grounding conductors.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.2 INSTALLATION

- A. Install Products in accordance with manufacturer's instructions.

- B. Install rod electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground. Rod electrodes shall be driven into undisturbed earth or engineered backfill only.
- C. Provide bonding to meet Regulatory Requirements.
- D. The non-current carrying parts of all electrical equipment installed under this Contract, including but not limited to raceways, raceway supports, and equipment enclosures, shall be bonded by means of bare copper cable or copper strap to the grounding system as shown on the Drawings and specified hereinafter.
- E. Where attached to equipment, conduits, cabinets, etc., suitable approved solderless lugs, compression connectors, or clamps shall be used. No soldered connections shall be used on grounding circuits at any point.
- F. Where a grounding cable is to be bonded to structural or architectural metal, the exact location of each bond shall be approved by the Owner. The location of such grounding connections shall be at points where they will not be subject to mechanical damage and, if possible, shall be accessible for inspection.
- G. Taps and splices in grounding cables and connections to ground rods shall be made by an exothermic weld process.
- H. Splices in wire or cable ground leads shall not be permitted.

3.3 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

END OF SECTION

SECTION 16470

PANELBOARDS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Modifications to existing panelboards.

1.2 RELATED SECTIONS

- A. Section 16010 – General Electrical, Instrument, and Control Requirements.

1.3 REFERENCES

- A. NECA (National Electrical Contractors Association) “Standard of Installation.”
- B. NEMA AB 1 – Molded Case Circuit Breakers.
- C. NEMA PB 1 – Panelboards.
- D. NEMA PB 1.1 – Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or less.
- E. NFPA 70 – National Electrical Code.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker arrangement and sizes.
- C. Manufacturer’s Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.5 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Section 01700.
- B. Maintenance Data: Include spare parts data listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NECA Standard of Installation.

1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. or other testing firm acceptable to authority having jurisdiction, as suitable for purpose specified and shown.

PART 2 PRODUCTS

2.1 MODIFICATIONS TO EXISTING PANELBOARDS

- A. Where indicated on the Drawings, provide modifications to existing panelboards as required. The panelboards shall be modified by the addition of new devices, connections to existing devices, and/or disconnection from existing devices.
- B. Circuit breakers for addition to existing panelboards shall be the panelboard manufacturer's compatible replacement parts and shall match the panelboards existing breaker interrupting ratings. Breaker trip ratings and number of poles shall be as indicated on the Drawings.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Provide filler plates for unused spaces in panelboards.
- B. Provide typed circuit directory for modified panelboard.
- C. All panelboard circuit breakers or switches shall have a circuit number marker on or adjacent to the breaker or switch.
- D. Provide engraved plastic nameplates and circuit number markers.

3.2 FIELD QUALITY CONTROL

- A. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers and lugs.

END OF SECTION

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
PROJECT SCHEDULE AND PAYMENT

AA:CJE

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Description

Examination of Plans, Specifications, and Work Site

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

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

1. The Contractor shall begin the work of this project on or before **September 10, 2024**, and only upon receipt of the fully executed Contract and Notice to Proceed. Appropriate time extensions shall be granted if the Notice to Proceed is delayed beyond this date.
2. This Contract requires the demolition of City-owned buildings at 2150 Jackson Ave., 315 Detroit St., 415 W Washington Street and 721 N Main Street.
 - Contractor must mobilize equipment to 415 W Washington Street by **September 10, 2024** and start building demolition operations by **September 16, 2024**. Demolition work at 415 W Washington shall be substantially complete by **December 14, 2024**. (Duration of activities on site shall be no longer than ninety-five (95) consecutive calendar days.)
 - Demolition of 721 N Main Street may begin **September 10, 2024** and shall be substantially complete by **October 1, 2025**. (No longer than three hundred eighty-five (385) consecutive calendar days.)
 - Demolition work at 315 Detroit St. is to commence any time after **January 2, 2025** and shall be substantially complete by **April 30, 2025** (except work is not permitted at this site on Saturdays or Sundays). (Duration of activities on site shall be no longer than sixty (60) consecutive calendar days.)
 - Demolition work at 2150 Jackson is to commence any time after **January 2, 2025** and shall be substantially complete by **October 1, 2025**. (Duration of activities on site shall be no longer than seventy-five (75) consecutive calendar days.)
 - The total calendar days for this overall contract is three hundred eighty-five (385) days.
3. No work shall be performed during Holiday periods as follows, unless approved by the City of Ann Arbor:
 - Labor Day, from 3:00 p.m. Friday August 30, 2024 through 7:00 a.m. Tuesday September 3, 2024
 - Thanksgiving, from 3:00 p.m. Wednesday November 27, 2024 through 7:00 am Monday December 2, 2024.
 - Christmas, from 3:00 pm Tuesday December 24, 2024 through 7:00 a.m. Thursday December 26, 2024.
 - New Year's, from 3:00 p.m. Tuesday December 31, 2024 through 7:00 a.m.

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Thursday January 2, 2025.

- Memorial Day, from 3:00 p.m. Friday May 23, 2025, through 7:00 a.m. Tuesday May 27, 2025

4. No work shall be performed during University of Michigan home football games.

City Council approval is expected on or before **August 8, 2024**. The Contractor shall not begin the work without approval from the Project Engineer, and in no case before the receipt of the Notice to Proceed.

Contractor will be furnished with two (2) copies of the Contract, for his/her execution, before the aforementioned City Council meeting. The Contractor shall properly execute both copies of the Contract and return them, with the required Bonds and Insurance Certificate, to the City within **ten (10) days**.

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 to complete the project by the final completion date. Should the Contractor demonstrate that they must work on some Saturdays and Sundays in order to maintain the project schedule, they may do so between the hours of 9:00a.m. and 5:00 p.m. with prior approval from the City. There will be no additional compensation due to the Contractor for work performed on Saturdays or Sundays.

Prior to the start of any construction, the Contractor shall submit a detailed schedule of work for the Engineer's review and approval. Work shall not be started until a schedule is approved in writing by the Engineer. The proposed schedule must fully comply with the scheduling requirements contained in this Detailed Specification. The Contractor shall update the approved work schedule upon request by the Engineer and present it to the Engineer within seven days of said request.

Liquidated Damages

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, **\$2,000.00** in Liquidated Damages, and not as a penalty, for delays in the completion of the work for each and every calendar day beyond the times for each sub-phase, as required by this Detailed Specification. **This includes meeting the initial mobilization and start of demolition work at the 415 W Washington site.**

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

Measurement and Payment

If the construction Contract is not completed within the specified calendar day period including any extensions of time granted thereto, at the sole discretion of the City of Ann Arbor, this Contract may be terminated with no additional compensation due to the Contractor, and the Contractor may be forbidden to bid on future City of Ann Arbor projects for a period of at least three (3) years.

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If the Engineer elects to terminate the Contract, Contract items paid for on a Lump Sum basis shall be paid up to a maximum percentage equal to the percentage of the Contract work that has been completed.

Costs for the Contractor to organize, coordinate, and schedule all of the work of the project, will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions, Max \$250,000.00".

APPENDIX

ATTACHMENT B
GENERAL DECLARATIONS

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, General Information, 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

ATTACHMENT C
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 _____

ATTACHMENT E

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 \$16.43/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 \$18.32/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

Attachment F

CITY OF ANN ARBOR LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2024 - ENDING APRIL 29, 2025

\$16.43 per hour

If the employer provides health care benefits*

\$18.32 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**



ATTACHEMENT G

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

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org

ATTACHMENT I

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)
															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	
EMPLOYEE INFORMATION	WORK CLASSIFICATION	Hour Type	HOURS WORKED ON PROJECT							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	FEDERAL	STATE	OTHER	TOTAL DEDUCT	TOTAL WEEKLY WAGES PAID FOR ALL JOBS
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0												
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0												
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0												
NAME:									0				\$0.00							\$0.00	\$0.00
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NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0												
NAME:									0				\$0.00							\$0.00	\$0.00
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NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0												
NAME:									0				\$0.00							\$0.00	\$0.00

Date _____

I, _____ (Name of Signatory Party) _____ (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the _____ (Contractor or Subcontractor)
 _____; that during the payroll period commencing on the _____ (Building or Work)
 _____ day of _____, _____, and ending the _____ day of _____, _____,
 all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full _____ (Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.