



Equal Opportunity Employer

## E.T. MacKenzie Company - Ann Arbor

One of The MacKenzie Companies

6400 Jackson Road  
Ann Arbor, MI 48103

Phone: (734) 761.5050 Fax: (734) 761.5323  
[www.mackenzieco.com](http://www.mackenzieco.com)



# RFP #21-16 PUBLIC WORKS ON-CALL CONSTRUCTION SERVICES

E.T. MacKenzie Company  
6400 Jackson Road  
Ann Arbor, MI 48103  
(734) 761.5050 (P)  
(734) 761.5323 (F)

# COPY

**A. Professional Qualifications**

**1. Physical Locations:**

E.T. MacKenzie Company (Corporate Headquarters)  
4248 West Saginaw  
Grand Ledge, MI 48837  
Phone: (517) 627.8408  
Fax: (517) 627.4470  
[www.mackenzieco.com](http://www.mackenzieco.com)

E.T. MacKenzie Company (Regional Division)  
6400 Jackson Road  
Ann Arbor, MI 48103  
Phone: (734) 761.5050  
Fax: (734) 761.5323

E.T. MacKenzie Company and all of its divisions are a Michigan Corporation, licensed by and in the State of Michigan.

E.T. MacKenzie Company Ann Arbor Division will be the subordinate element entering into the construction services contract with the City of Ann Arbor.

**2. Key Personnel:**

- a. John Niemiec, Ann Arbor Division Manager (Division Management, Project Estimating / Management, Coordination, Supervision and Administration)
- b. Art Arendt, Ann Arbor Project Manager / Estimator (Project Estimating / Management, Coordination, Supervision and Administration)
- c. Duston Kipke, Ann Arbor Project Manager / Estimator (Project Estimating / Management, Coordination, Supervision and Administration)
- d. Andy LaHaie, Ann Arbor Project Manager / Estimator (Project Estimating / Management, Coordination, Supervision and Administration)

Professional information for the above employees can be found in the attached "EXHIBIT 2".

E.T. MacKenzie Company self-performs the majority of the work as required by this RFP. We subcontract to various companies for specialty work only when required. When required, we engage subcontractors who have experience working within the City of Ann Arbor and who are local in nature. Additional subcontractor information can be provided given specific project requirements / scenarios.

In addition to the staff listed above, E.T. MacKenzie Company will draw upon the vast experience of its field and executive personnel (additional information available upon request). As a result, if a specific site condition dictates specialized knowledge that is not possessed by the Ann Arbor Staff, we have the ability to have experts on-site within twenty four hours (in most cases less than three hours).

The Division Manager, Division Superintendent and Scope Forman are on call twenty four hours a day and can be reached via mobile phone when necessary. The Ann Arbor Division is fully staffed year round and, unlike most, we offer our full range of services during all times of the year.

In common situations, E.T. MacKenzie Company can mobilize most of its equipment and work force within twenty four hours of notice to proceed. In emergent situations, equipment and crews will be immediately pulled from non-emergent projects and allocated to the specific issue; most crews and equipment can be mobilized in one to two hours, with a primary response team on-site within one half hour. Specialized situations requiring large equipment may require more time to mobilize due to permitting issues. Please note that we are required to contact the MISS Dig system and have all utilities properly located prior to performing any underground or site related work; typical utility marking takes three business days from the request, emergent situations are usually addressed within a few hours.

### 3. History:

E.T. MacKenzie Company was founded in 1982 in Grand Ledge, Michigan. It has now grown to include offices in Lansing, Ann Arbor and Bradenton (FL). Having several different entities under the MacKenzie Company umbrella provides us with a broad spectrum of knowledge, resources and experience. We have been recognized locally and nationally for innovation, project designs, safety records, and our ability to perform within budget and on schedule.

E.T. MacKenzie Company specializes in large and small scale earthwork operations, public utility construction, road construction, landfill construction, wastewater treatment facility construction, rehabilitation of sewerage infrastructure, site demolition, material recycling, soil and groundwater remediation, environmental consulting, site concrete construction, landscaping and bridge construction. Our large and broad equipment inventory allows us to perform deep and difficult utility construction that most other contractors are not equipped to handle. All of these services are offered throughout our regional divisions and are self-performed.

The Ann Arbor Division of E.T. MacKenzie Company has been in operation since 1992 and has successfully completed many project within the City limits; both private and public in nature. We maintain an excellent working relationship with the Project Management Unit and Field Service Unit and strive to complete all projects on time and within budget.

E.T. MacKenzie Company is considered to be an extremely safe company by industry standards. Through the implementation of our safety policy (see attached), and constant field training by our Corporate Safety Officer we continually have EMR ratings well below 1.0.

Providing comprehensive and regional services gives E.T. MacKenzie more control to reach a profitable and timely outcome for the owner. Benefits include:

- Expedited response and dispatch
- Value engineering
- Risk management

- Regional familiarity
- Aggressive scheduling
- Minimized work disruptions

E.T. MacKenzie Company and the family of MacKenzie Companies have a distinct advantage to most other contractors because of our ability to self-perform a large quantity of work scopes. Our management structure will include one lead project manager that will draw upon the resources of the MacKenzie Companies, allowing our specialized project managers and superintendents to provide timely and effective implementation of the project schedule and goals. This system of management provides the owner a singular contact for the project while allowing MacKenzie to utilize our vast resources and expertise at all times.

4. Key Supervisory Personnel:

- a. Denny McNamara, Ann Arbor Superintendent (Field Management, Coordination and Supervision)
- b. Russ Curby, General Ann Arbor Utility Forman (Field Management and Construction)
- c. Daryl Kempfer, General Ann Arbor Road Construction Forman (Field Management and Construction)

Professional information for the above employees can be found in the attached "EXHIBIT 2"

These three individuals have provided supervision on ALL City of Ann Arbor projects in the past five years as detailed in our "EXHIBIT 4" enclosure.

5. Available Equipment:

Please find the list of available equipment in the attached "EXHIBIT 3".

6. Potential Subcontractors:

For specialty work items that are required for work performed under this RFP, we would typically hire the following Subcontractors:

- a. **Bostwick Company, Inc. (HMA Hand Patching)**  
Ed Vlcek  
3295 West Liberty Road  
Ann Arbor, MI 48106  
(734) 663.5600
- b. **Cadillac Asphalt, LLC (HMA Mainline Paving)**  
Wanda Dwyer  
857 South Wagner  
Ann Arbor, MI 48103  
(734) 662.0491
- c. **Water Tap, Inc. (Line Stops, Tapping Services and Team Valves)**  
Tony Carpani



48595 West Road  
Wixom, MI 48393  
(248) 437.7023

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**B. Past Involvement with Similar Projects**

1. Please find the attached list of project experience in "EXHIBIT 4".

**C. Fee Proposal**

1. Fee proposal can be located in the separate sealed envelopes included with this proposal.

**D. Authorized Negotiator**

1. John Niemiec is named as Authorized Negotiators for the Construction Service Contract.

**E. Attachments**

1. Please find the attached Exhibits and City Attachments following this proposal.

## ADDENDUM No. 1

### RFP No. 21-16

#### Public Works On-Call Construction Services

**Due: May 26, 2021 by 2:00 P.M. (local time)**

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes two (2) pages.**

**The offeror is to acknowledge receipt of this Addendum No. 1, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.**

The following forms provided within the RFP Document should be included in submitted proposal:

- Attachment C - Prevailing Wage Declaration of Compliance
- Attachment D - Living Wage Declaration of Compliance
- Attachment F - Vendor Conflict of Interest Disclosure Form
- Attachment G - Non-Discrimination Declaration of Compliance

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

#### I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the RFP documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Section/Page(s)	Change
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Page 17	As provided in RFP No. 21-16 Document: 26. Identify any subcontractors whom may assist you with potential services identified in this RFP. Include similar reference data for subcontractors and employees as requested herein for the main proposer.
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	As updated herein: 26. Identify any subcontractors whom may assist you with potential services identified in this RFP. The awarded offeror(s) should be prepared to share the same level of information requested herein on subcontractors once a project has a defined scope if requested by the City.
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#### II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the

documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: Please clarify question #26 on page 17 of the RFP. Do you really want the same level of detail for anticipated subcontractors as the main proposer? As this contract may involve any number of potential specialty subcontractors (or none), how are we to determine what is acceptable to the City?

Answer 1: See change made to Question 26 in I. Corrections/Additions/Deletions herein.

Question 2: I see that 40 points are attributed to "Section III – Minimum Information Required". How will the scoring for questions be allocated?

Answer 2: Responses are worth an equal number of points and will be evaluated in totality for that section.

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.

Acknowledged by E.T. MacKenzie  
Company, 05.26.2021

**ATTACHMENT B**  
**LEGAL STATUS OF OFFEROR**

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

Offeror declares that it is:

\* A corporation organized and doing business under the laws of the State of MICHIGAN, for whom MICHAEL S. MARKS, bearing the office title of PRESIDENT, 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 05.26, 2021

(Print) Name Michael S. Marks Title President

Company: E.T. MACKENZIE COMPANY

Address: 6400 JACKSON ROAD, ANN ARBOR, MI 48103

Contact Phone ( ) 734.761.5050 Fax ( ) 734.761.5323

Email jnie@mackenzieco.com

**ATTACHMENT C**  
**PREVAILING WAGE DECLARATION OF COMPLIANCE**

The "wage and employment requirements" of Section 1:320 of Chapter 14 of Title I of the Ann Arbor City Code mandates that the city not enter any contract, understanding or other arrangement for a public improvement for or on behalf of the city unless the contract provides 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. Where the contract and the Ann Arbor City Code are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used. Further, to the extent that any employees of the contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with section 1:320 of Chapter 14 of Title I of the Code of the City of Ann Arbor, employees shall be paid a prescribed minimum level of compensation (i.e. Living Wage) for the time those employees perform work on the contract in conformance with section 1:815 of Chapter 23 of Title I of the Code of the City of Ann Arbor.

At the request of the city, any contractor or subcontractor shall provide satisfactory proof of compliance with this provision.

The Contractor agrees:

- (a) To pay each of its employees whose wage level is required to comply with federal, state or local prevailing wage law, for work covered or funded by this contract with the City,
- (b) To require each subcontractor performing work covered or funded by this contract with the City to pay each of its employees the applicable prescribed wage level under the conditions stated in subsection (a) or (b) above.
- (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.

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 in accordance with the terms of the wage and employment provisions of the Chapter 14 of the Ann Arbor City Code. The undersigned certifies that he/she has read and is familiar with the terms of Section 1:320 of Chapter 14 of the Ann Arbor City Code and by executing this Declaration of Compliance obligates his/her employer and any subcontractor employed by it to perform work on the contract to the wage and employment requirements stated herein. The undersigned further acknowledges and agrees that if it is found to be in violation of the wage and employment requirements of Section 1:320 of the Chapter 14 of the Ann Arbor City Code it shall have been deemed a material breach of the terms of the contract and grounds for termination of same by the City.

E.T. MACHENZIE COMPANY  
Company Name  
[Signature] 05.26.2021  
Signature of Authorized Representative Date  
Michael S. Marks, President  
Print Name and Title  
6400 Jackson Road, Ann Arbor, MI 48103  
Address, City, State, Zip  
734.761.5050 / jmieci@machenzieco.com  
Phone/Email address

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

## ATTACHMENT D

### 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 \$14.05/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than \$15.66/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).

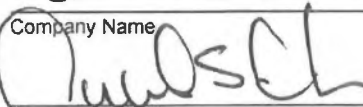
**Check the applicable box below which applies to your workforce**

- 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.

E.T. MACKENZIE COMPANY  
Company Name

  
Signature of Authorized Representative

05.26.2021  
Date

Michael S. Marks, President  
Print Name and Title

6400 JACOBSON ROAD  
Street Address

ANN ARBOR, MI 48103  
City, State, Zip

734.761.5050  
Phone/Email address

juemiec@macbenzieco.com  
Phone/Email address

Attachment E

**CITY OF ANN ARBOR  
LIVING WAGE ORDINANCE**

**RATE EFFECTIVE APRIL 30, 2021 - ENDING APRIL 29, 2022**

**\$14.05 per hour**

If the employer provides health care benefits\*

**\$15.66 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](mailto:cspencer@a2gov.org)**



**ATTACHEMENT F**

**Vendor Conflict of Interest Disclosure Form**

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

<b>Conflict of Interest Disclosure*</b>	
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)
N/A	

\*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.

<b>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:</b>		
E.T. MACKENZIE COMPANY	734.761.5050	
<b>Vendor Name</b>	<b>Vendor Phone Number</b>	
	05.26.2021	Michael S. Marks, President
<b>Signature of Vendor Authorized Representative</b>	<b>Date</b>	<b>Printed Name of Vendor Authorized Representative</b>

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org



**ATTACHMENT G**

**DECLARATION OF COMPLIANCE**

Non-Discrimination Ordinance

The "non discrimination by city contractors" provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis 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. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

- (a) To comply with the terms of the City of Ann Arbor's Non-Discrimination Ordinance and contract compliance administrative policy, including but not limited to an acceptable affirmative action program if applicable.
- (b) To post the City of Ann Arbor's Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.
- (c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.
- (d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

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 in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor 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.

E.T. MACKENZIE COMPANY  
 Company Name

[Signature] 05.26.2021  
 Signature of Authorized Representative Date

Michael S. Marks, President  
 Print Name and Title

6400 JACKSON ROAD, ANN ARBOR, MI 48103  
 Address, City, State, Zip

734 761.5050 / jnemiec@mackenzieco.com  
 Phone/Email Address

Questions about the Notice or the City Administrative Policy, Please contact:  
 Procurement Office of the City of Ann Arbor  
 (734) 794-6500

## ATTACHMENT H

### 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](http://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](http://www.a2gov.org/humanrights). Then submit it to the Human Rights Commission by e-mail ([hrc@a2gov.org](mailto: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](mailto: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.

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**EXHIBIT 1**  
**RFP# 21-16 SECTION III SUBMITTAL**

## **SECTION III - MINIMUM INFORMATION REQUIRED**

### **PROPOSAL FORMAT**

Offerors should organize Proposals into the following Sections:

- A. Contractor Information and Responsible Contractor Criteria
- B. Past Involvement with Similar Projects
- C. Proposed Work Plan
- D. Fee Proposal (include in a separate sealed envelope clearly marked "Fee Proposal")
- E. Authorized Negotiator
- F. Attachments

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.

- A. Contractor Information and Responsible Contractor Criteria - 40 Points

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

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

*Attach additional pages as needed if space below is insufficient.*

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

1. Organization Name: E.T. MacKenzie Company

Social Security or Federal Employer I.D. #: 28-2405622

Address: 4248 West Saginaw Hwy.

City: Grand Ledge State: MI Zip: 48837

Type of Organization (circle one below):

Individual          Partnership          Corporation          Joint Venture          Other

If "Other" please provide details on the organization:

---

Year organization established: 1982

2. Current owners/principals/members/managing members/partners of the organization: Michael S. Marks, President

Thomas MacKenzie, Vice President

Stephanie MacKenzie, Sec/Treasurer

3. Assumed Names, "doing business as" d/b/a, and/or former organization names(s), if applicable: None

Explanation of any business name changes:

N/A

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

N/A

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

*Additional information provided in EXHIBIT 2.*

Please see the attached resumes.

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

State of Michigan - 2104063278; City of A2 Contractor - Cont-4881; City of A2 Sewer Installer - 2849  
City of Grand Rapids - UG-00172 and SBL-10016; City of Lansing Drain Layer - 129 and Demo - 4278  
MDOT prequalified - 01886; City of Jackson prequalified

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

Yes

No

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

Yes

No



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

City of Ann Arbor - 1 employee, 0.5% Washtenaw County - 3 employees, 1.7%

10. Submit documentation as to bidder's employee pay rates (e.g., certified payroll without SSN or personal identifying information, or chart of job titles and pay rates, or other evidence). *Please find the attached Prevailing Wage rates that will be utilized for this project attached after the "Responsible Contractor Criteria".*

11. State whether bidder provides health insurance, pension or other retirement benefits, paid leave (vacation, personal time, sick leave, etc), or other benefits to its employees, and if so, state whether each benefit is provided directly to employees, by payments or contributions to a third-party administered plan, in cash (e.g., fringe benefit portion of prevailing wages), or other manner.

Medical insurance, voluntary dental and vision, a profit sharing 401K plan and an Employee Assistance program is provided to all eligible employees.

12. State whether bidder is an equal opportunity employer and does not discriminate in its hiring on the basis of race, sex, pregnancy, age, religion, national origin, marital status, sexual orientation or gender identity, height, weight, or disability.

Yes

No

13. State whether bidder has Equal Employment Opportunity Programs for minorities, women, veterans, returning citizens, and small businesses, and if so, submit supporting documentation or other evidence of such program(s).

*Please find an attached copy of our Equal Employment Opportunity Policy Statement and our Employee Handbook for supporting documentation.*

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

Yes

No

*See attached list*

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

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

Yes                      No  
See attached

If you answered "Yes", please submit documentation of the Fitness for Duty Program and what it entails. Please find the attached information following the "Responsible Contractor Criteria".

16. Submit documents or evidence of any debarment by any federal, state or local governmental unit and/or findings of non-responsibility or non-compliance with respect to any public or private construction project performed by the bidder. N/A

17. Proof of insurance, including certificates of insurance, confirming existence and amount of coverage for liability, property damage, workers compensation, and any other insurances required by the proposed contract documents. See attached - Proof of Insurance Statement/Policy

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

Yes                      No  
See attached Safety Handbook

If bidder answered "yes" to the question above, submit documentation of your safety-training program.

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

Yes                      No  
EMR = 0.66 See attached letter

20. Will bidder use masters, journeypersons and apprentices on the project?

Yes                       No

If bidder answered "yes" to the question above, provide the ratio of masters and journeypersons to apprentices for this project.

Ratio: N/A

If bidder answered "no" to the question above, submit documentation regarding the qualifications of each worker who may or will be assigned on the project.

If, yes, Ratio = N/A Please find the attached information following the "Responsible Contractor Criteria".

21. Can bidder provide documentation that it participates in a Registered Apprenticeship Program (RAP) that is registered with the United States Department of

Labor Office of Apprenticeship or by a State Apprenticeship Agency recognized by the Office of Apprenticeship? See attached.

Yes

No

If bidder answered "yes" to the question above, please submit a copy of the program document(s) and evidence of its registration.

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

Please find the attached information following the "Responsible Contractor Criteria".

---

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

Yes

No

23. Submit evidence that bidder has financial resources to start up and follow through on the project and to respond to damages in case of default as show by written verification of bonding capacity equal to or exceeding the amount of the bidders scope of work on the project. The written verification must be submitted by a licensed surety company rated B+ or better in the current A.M. Best Guide and qualified to do business within the State of Michigan, and the same audited financial information for any subcontractor estimated to be paid more than \$100,000 related to any portion of the project.

Please find the attached information following the "Responsible Contractor Criteria".

24. Submit evidence of a quality assurance program used by the bidder and the results of same on the bidder's previous projects. Please find the attached information following the

"Responsible Contractor Criteria".

25. Provide a table with a list of equipment available for use on City project tasks. The list shall include a description of the type of equipment and size, if relevant. The equipment list shall include only equipment owned by the Contractor.

Please find this information attached as EXHIBIT 3.

26. Identify any subcontractors whom may assist you with potential services identified in this RFP. Include similar reference data for subcontractors and employees as requested herein for the main proposer.

Please find this information in the body of our proposal, Section 6.



"General Decision Number: MI20210074 01/01/2021

Contractual Wage Rates

Superseded General Decision Number: MI20200074

State: Michigan

Construction Type: Heavy

County: Washtenaw County in Michigan.

Heavy, Includes Water, Sewer Lines and Excavation (Excludes Hazardous Waste Removal; Coal, Oil, Gas, Duct and other similar Pipeline Construction)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/01/2021

CARP0687-006 06/01/2020

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 34.20	28.82

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ELEC0252-009 06/01/2020

	Rates	Fringes
ELECTRICIAN.....	\$ 47.46	23.16

-----  
\* ENGI0325-019 09/01/2020

POWER EQUIPMENT OPERATORS: Underground Construction (Including Sewer)

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 35.88	24.85
GROUP 2.....	\$ 31.15	24.85
GROUP 3.....	\$ 30.42	24.85
GROUP 4.....	\$ 29.85	24.85

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backhoe/ Excavator, Boring Machine, Bulldozer, Crane, Grader/ Blade, Loader, Roller, Scraper, Trencher (over 8 ft. digging capacity)

GROUP 2: Trencher (8-ft digging capacity and smaller)

GROUP 3: Boom Truck (non-swinging, non- powered type boom)

GROUP 4: Broom/ Sweeper, Fork Truck, Tractor, Bobcat/ Skid Steer /Skid Loader

-----  
ENGI0326-008 06/01/2020

EXCLUDES UNDERGROUND CONSTRUCTION

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 42.69	24.95
GROUP 2.....	\$ 41.19	24.95
GROUP 3.....	\$ 39.69	24.95
GROUP 4.....	\$ 39.39	24.95
GROUP 5.....	\$ 38.57	24.95
GROUP 6.....	\$ 37.71	24.95
GROUP 7.....	\$ 36.74	24.95
GROUP 8.....	\$ 35.03	24.95

GROUP 9.....\$ 26.69 24.95

FOOTNOTES: Tower cranes: to be paid the crane operator rate determined by the combined length of the mast and the boom.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane with boom & jib or leads 400' or longer

GROUP 2: Crane with boom & jib or leads 300' or longer

GROUP 3: Crane with boom & jib or leads 220' or longer

GROUP 4: Crane with boom & jib or leads 140' or longer

GROUP 5: Crane with boom & jib or leads 120' or longer

GROUP 6: Regular crane operator

GROUP 7: Backhoe/Excavator, Bobcat/Skid Loader, Boring Machine, Broom/Sweeper, Bulldozer, Grader/Blade, Loader, Roller, Scraper, Tractor, Trencher

GROUP 8: Forklift

GROUP 9: Oiler

-----  
IRON0025-006 06/01/2019

	Rates	Fringes
IRONWORKER		
Reinforcing.....	\$ 30.98	27.99
Structural.....	\$ 36.77	29.03

-----  
LAB00334-009 06/01/2019

EXCLUDES OPEN CUT CONSTRUCTION

	Rates	Fringes
Landscape Laborer		
GROUP 1.....	\$ 20.75	7.10
GROUP 2.....	\$ 18.75	7.10

LANDSCAPE LABORER CLASSIFICATIONS

GROUP 1: Landscape specialist, including air, gas and diesel equipment operator, lawn sprinkler installer and skidsteer

(or equivalent)

GROUP 2: Landscape laborer: small power tool operator, material mover, truck driver and lawn sprinkler installer tender

-----  
LAB00334-018 09/01/2018

SCOPE OF WORK:

OPEN CUT CONSTRUCTION: Excavation of earth and sewer, utilities, and improvements, including underground piping/conduit (including inspection, cleaning, restoration, and relining)

	Rates	Fringes
<b>LABORER</b>		
(1) Common or General.....	\$ 23.75	12.85
(2) Mason Tender- Cement/Concrete.....	\$ 23.86	12.85
(4) Grade Checker.....	\$ 24.05	12.85
(5) Pipelayer.....	\$ 22.90	12.75
(524.20) Pipelayer.....	\$ 22.90	12.85
(7) Landscape.....	\$ 18.14	12.85

-----  
LAB00499-020 08/01/2019

EXCLUDES OPEN CUT CONSTRUCTION

	Rates	Fringes
<b>LABORER</b>		
GROUP 1.....	\$ 29.37	40.40
GROUP 2.....	\$ 29.58	40.40
GROUP 3.....	\$ 29.71	40.40

LABORER CLASSIFICATIONS

GROUP 1: Common or General; Grade Checker

GROUP 2: Mason Tender - Cement/Concrete

GROUP 3: Pipelayer

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PAIN0022-005 07/01/2008

Rates	Fringes
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PAINTER

Brush & Roller.....	\$ 25.06	14.75
Spray.....	\$ 25.86	14.75

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PLAS0514-002 06/01/2018

Rates Fringes

CEMENT MASON/CONCRETE FINISHER....	\$ 31.47	13.81
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PLUM0190-010 06/01/2020

Rates Fringes

PLUMBER.....	\$ 42.26	23.70
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TEAM0007-006 06/01/2020

Rates Fringes

TRUCK DRIVER

Dump Truck under 8 cu. yds.; Tractor Haul Truck....	\$ 27.90	.50 + a+b
Dump Truck, 8 cu. yds. and over.....	\$ 28.00	.50 + a+b
Lowboy/Semi-Trailer Truck....	\$ 28.15	.50 + a+b

FOOTNOTE:

- a. \$470.70 per week.
- b. \$68.70 daily.

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SUMI2010-072 11/09/2010

Rates Fringes

TRUCK DRIVER: Off the Road Truck.....	\$ 20.82	3.69
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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide

employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

## Survey Rate Identifiers

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Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

## Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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## WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on

- a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION





## MacKenzie Companies

Contracting and Consulting

### Equal Employment Opportunity Policy Statement

- A. MacKenzie Companies shall hire and do business in a nondiscriminatory manner, and provide an aggressive and coherent management program to provide for equal employment opportunity.
- B. This policy of equal employment opportunity shall apply to, but is not limited to, hiring, recruitment, selection, placement, training, promotion, demotion, transfer, lay-off, recall, termination, rate of pay, fringe benefits and other forms of compensation. This policy applies to full time, part time, seasonal and temporary employees.
- C. The supervisory staff has been made aware of this policy and is expected to comply with both the letter and the spirit of this policy.
- D. A copy of this Equal Employment Opportunity Statement has been distributed to all employees, and they have been made aware of where to report actions which they feel to be discriminatory.
- E. Only criteria based on an individual's merit will be used in making determinations relating to the actions in paragraph number B and all other personnel matters. These decisions shall not be made on a basis of race, color, national origin, religion, sex (including pregnancy), disability, marital status, height, weight, age, genetic information or arrest record.
- F. The company will maintain a list of agencies to contact when there are job openings. Aside from the local unemployment office, this list will include organizations in the area who maintain lists of qualified minority and women applicants. These agencies will be contacted on an annual basis
- G. The Equal Employment Officer is Heather Hufnagel, and may be contacted at the address and phone number below.

  
\_\_\_\_\_  
Michael S. Marks, President

3/20/20  
Dated



## MacKenzie Companies

Contracting and Consulting

### MacKenzie Companies Affirmative Action Program

- I. Equal Employment Opportunity Policy Statement:
  - A. MacKenzie Companies shall hire and do business in a nondiscriminatory manner, and provide an aggressive and coherent management program to provide for equal employment opportunity.
  - B. This policy of equal employment opportunity shall apply to, but is not limited to, hiring, recruitment, selection, placement, training, promotion, demotion, transfer, lay-off, recall, termination, rate of pay, fringe benefits and other forms of compensation. This policy applies to full time, part time, seasonal and temporary employees.
  - C. The supervisory staff has been made aware of this policy and is expected to comply with both the letter and the spirit of this policy.
  - D. A copy of this Equal Employment Opportunity Statement has been distributed to all employees, and they have been made aware of where to report actions which they feel to be discriminatory.
  - E. Only criteria based on an individual's merit will be used in making determinations relating to the actions in paragraph number B and all other personnel matters. These decisions shall not be made on a basis of race, color, national origin, religion, sex (including pregnancy), disability, marital status, height, weight, age, genetic information and arrest record.
  - F. The company will maintain a list of agencies to contact when there are job openings. Aside from the local unemployment office, this list will include organizations in the area who maintain lists of qualified minority and women applicants. These agencies will be contacted on an annual basis
  - G. The Equal Employment Officer is Heather Hufnagel, and may be contacted at the address and phone number below.

II. Dissemination of the E.E.O. Policy:

- A. The E.E.O. policy is distributed to employees on an annual basis as the construction season begins. This is accomplished either by placing a copy of the policy in payroll envelopes or including in the company's quarterly newsletter. The E.E.O. policy is discussed at regular employees meetings, included in the Employee Handbook, and displayed at offices and jobsites
- B. The fact that the MacKenzie Companies is an Equal Opportunity Employer is stated on our letterhead and in our company newsletter. When advertising for employees or subcontractors the Equal Opportunity Employer notification is included in the ad, and noted on the employment application forms.

III. Management' responsibilities through the designated E.E.O. Officer:

- A. MacKenzie Companies will conduct business in a nondiscriminatory manner. This practice will apply to, but is not limited to, hiring, training, promotion, transfer, termination, layoff, benefits, harassment, non-segregated facilities, and solicitation of minority and female owned contractors. Decisions in all areas will be based on merit and not on the basis of race, color, national origin, religion, sex (including pregnancy), disability, marital status, height, weight, age, genetic information, arrest record or familial status.

1. All supervisory personnel are directed to implement the above policy. Those specifically assigned with the task of monitoring and reviewing policies and decisions are Michael Marks, President and Heather Hufnagel, E.E.O. Officer.

B. Statement of Procedures:

1. The E.E.O. Officer is assigned the task of monitoring all activities pertaining to personnel and identifying any problem areas where discrimination occurs. It is her responsibility to notify recruiting sources of possible job openings in order to meet the company's affirmative action goals.
2. As problem areas or complaints are identified, the E.E.O. Officer has the authority to investigate the situation and suggest corrective action, subject to final approval of the president of the company.
3. The E.E.O. Officer will periodically review the progress made in the Affirmative Action Program and update, where necessary, the policies of the company.



4. Reviews of hiring, terminating, training opportunities, promotion and layoff procedures are performed by the E.E.O. Officer, as well as periodic site visits to determine if unreported incidences of discrimination occur.
5. A list of referral sources for minority and female job applicants includes the organizations below. These organizations are notified at least once a year:

NAWIC Lansing Chapter  
Cristo Rey Community Center  
Michigan Indian Employment & Training Services  
Women's Center of Greater Lansing  
Greater Lansing Urban League  
NAACP Lansing Branch  
Great Lakes Christian College  
UnidosNow  
Manatee County Black Chamber of Commerce  
NAWIC Tampa  
NAACP Manatee County

IV. Goals and Timetables for Minorities and Females:

- A. MacKenzie Companies will strive for workplace diversity within all job classifications.
- B. Approximately every six weeks, the workforce is reviewed by the E.E.O. Officer for compliance. Based on these reviews recommendations are made to the President and supervisory personnel to help reach the goals which have been set by the company.
- C. Approximately every six months, the workforce is evaluated in the areas of rate of pay, fringe benefits, and other forms of compensation, by the E.E.O. Officer and the President.

V. Indicate the Due Process for Handling:

- A. In the event that a complaint is received, it will be reviewed and investigated by the E.E.O. Officer. Appropriate corrective action is to be recommended to and reviewed by the President, including a review of whether discrimination may extend beyond these actions reviewed. Corrective action will include all affected persons.



B. If an employee wishes to appeal a decision made by the President in a case of grievance or harassment, they may do this through the E.E.O. Officer who will reopen the investigation.

C. Persons responsible to handle complaints and appeals are Michael Marks, President and Heather Hufnagel, E.E.O. Officer.

D. Complaints pertaining to civil rights that are not resolved may also be appealed to any of the following departments:

Michigan Department of Civil Rights - Complaint Investigation

Battle Creek Office (616) 964-7193

Benton Harbor Office (616) 925-7044

Detroit Office (313) 256-2658

Flint Office (313) 235-4653

Grand Rapids Office (616) 456-7543

Lansing Office (517) 335-4026

Muskegon Office (616) 739-7168

Saginaw Office (517) 758-1701

Office of Federal Contract Compliance Programs (OFCCP)

Grand Rapids Office (616) 456-2166

Washington, D.C. Office (202) 523-9368

U.S. Equal Employment Opportunity Commission

Detroit Office (313) 226-7636

Washington, D.C. Office (800) 669-4000



# **EMPLOYEE HANDBOOK**

**MacKenzie Companies**

Welcome new employee!

---

On behalf of your colleagues, we welcome you to MacKenzie Companies and wish you every success here.

We believe that each employee contributes directly to MacKenzie Companies' growth and success, and we hope that you take pride in being a member of the team.

The safety, health and welfare of every employee at MacKenzie Companies is at the utmost of our concern. If there is ever a safety concern, or if you ever find an unsafe working condition, we request that you bring it to our attention immediately. This open door policy is strongly encouraged and you are asked to contact us at the phone numbers listed below. In the event of our absence a message will reach us promptly.

This handbook was developed to describe some of the expectations of employees and to outline the policies, programs and benefits available to eligible employees. Employees should familiarize themselves with the contents of the employee handbook as soon as possible, as it will answer many questions about employment with MacKenzie Companies.

We hope that your experience at MacKenzie Companies continues to be challenging, enjoyable and rewarding. Again, welcome!

Sincerely,

Michael Marks - President  
Thomas E. MacKenzie - Vice-President  
Stephanie MacKenzie – Corp. Secretary/Treasurer

(517) 627-8408

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# COMPANY INFORMATION

## Organization Description

The MacKenzie Companies perform underground excavating & construction, contracting and environmental work in the commercial, industrial, municipal and private sectors. With offices located in Michigan and Florida, services provided include:

- Site Development
- Underground Utility Construction
- Highway and Road Construction
- Demolition
- Environmental Construction and Consulting
- Concrete and Paving
- Landscaping
- Site Services
- Bridge Construction

## Mission Statement

At MacKenzie Companies, we believe the single most important concern in the underground excavating & construction, contracting and environmental business is the customer. Our objective is to achieve complete customer satisfaction by offering customers the best possible value. As workers at MacKenzie Companies, we will reach our objective through hard work, determination, and our constant pursuit of excellence.

## Introductory Statement

This handbook is designed to acquaint you with MacKenzie Companies and provide you with information about working conditions, employee benefits and some of the policies affecting your employment. You should read, understand and comply with all provisions of the handbook. It describes many of your responsibilities as an employee and outlines the programs developed by MacKenzie Companies to benefit employees. One of our objectives is to provide a work environment that is conducive to both personal and professional growth.

No employee handbook can anticipate every circumstance or question about policy. The need may arise, and MacKenzie Companies reserve the right to revise, supplement, or rescind any policies or portion of the handbook from time to time as it deems appropriate, in its sole and absolute discretion. The only exception to any change is our employment-at-will policy permitting you or MacKenzie Companies to end our relationship for any reason at any time. Employees will, of course, be notified of such changes to the handbook as they occur.

## ACKNOWLEDGEMENT OF RECEIPT OF HANDBOOK

I received a copy of the MacKenzie Companies' Employee Handbook.

I understand the Handbook does not constitute an employment agreement or contract and that the Handbook can be changed or amended by the company at any time and without notice and that any amendments or changes must be in writing from the President of the company.

I further understand that I am an "at will" employee, meaning that I or the company may terminate my employment at any time, with or without cause and with or without notice.

### **Important**

Although the Handbook is not a contract or employment agreement, as an employee of the company you are contractually bound by the signing of this receipt form that if you have any claim against the company or officer of the company, during or after termination of employment which relates to your employment, that any claim shall be submitted, within six months of the date said claim arises, to be heard and determined by an arbitrator in Lansing, MI, or Bradenton, FL, as appointed by the American Arbitration Association. Any decision rendered through arbitration will be enforced by the Circuit Court in Ingham County, MI, or Manatee County, FL, respectively.

Employee: \_\_\_\_\_

Date: \_\_\_\_\_

*This copy is to be retained in the Employee Handbook.*

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Employee: \_\_\_\_\_

Date: \_\_\_\_\_

*This copy is to be retained by MacKenzie Companies.*

# **EMPLOYMENT**

## **Nature of Employment**

This handbook is intended to provide employees with a general understanding of our personnel policies. Employees are encouraged to familiarize themselves with the contents of this handbook, for it will answer many common questions concerning employment with MacKenzie Companies.

However, this handbook cannot anticipate every situation or answer every question about employment. It is not an employment contract and is not intended to create contractual obligations of any kind. Neither the employee nor MacKenzie Companies is bound to continue the employment relationship if either chooses, at its will, to end the relationship at any time.

In order to retain necessary flexibility in the administration of policies and procedures, MacKenzie Companies reserve the right to change, revise, or eliminate any of the policies and/or benefits described in this handbook, except for its policy of employment-at-will. The only recognized deviations from the stated policies are those authorized by the President of MacKenzie Companies.

## **Employee Relations**

MacKenzie Companies believe that the work conditions, wages, and benefits offered to employees are competitive with those offered by other employers in this area and in this industry. If employees have concerns about work conditions or compensation, they are strongly encouraged to voice these concerns openly and directly to their Division Manager or President of MacKenzie Companies.

Our experience has shown that when employees communicate openly and directly, the work environment can be excellent, communications can be clear, and attitudes can be positive. We believe that MacKenzie Companies amply demonstrates its commitment to employees by responding effectively to employee concerns.

## **Federal and State Employment Laws**

In compliance with federal, state and local employment laws, required information is posted in areas readily accessible to all employees. "Your Right to Know" folders are located in every job office and job trailer for quick access. Please refer to the folder for information and/or contact Human Resources with any questions.

## **Equal Employment Opportunity**

In order to provide equal employment and advancement opportunities to all individuals, employment decisions at MacKenzie Companies will be based on merit, qualifications and abilities. MacKenzie Companies do not discriminate in employment opportunities or practices on the basis of race, color, national origin, religion, sex (including pregnancy), disability, marital status, height, weight, age, genetic information, arrest record or any other characteristic protected by law. This policy governs all aspects of employment, including selection, job assignment, compensation, discipline, termination and access to benefits and training.

In addition to a commitment to provide equal employment opportunities to all qualified individuals, MacKenzie Companies has established an affirmative action program.

Any employees with questions or concerns about any type of discrimination in the workplace are encouraged to bring these issues to the attention of their Division Manager, Human Resources, or the President of MacKenzie Companies. Employees can raise concerns and make reports without fear of reprisal. Anyone found to be engaging in any type of unlawful discrimination will be subject to disciplinary action, up to and including termination of employment.

### **Equal Employment Opportunity Statement**

1. MacKenzie Companies shall hire and do business in a nondiscriminatory manner, and provide for an aggressive and coherent management program to provide for equal employment opportunity.
2. This policy of equal employment opportunity shall apply to, but is not limited to hiring, recruitment, selection, placement, training, promotion, demotion, transfer, lay-off, recall, termination, rate of pay, fringe benefits and other forms of compensation. This policy applies to full time, part time, seasonal and temporary employees.
3. Supervisory staff have been made aware of this policy and are expected to comply with both the letter and the spirit of this policy.
4. A copy of this Equal Employment Opportunity Statement has been distributed to all employees, and they have been made aware of where to report actions which they feel are discriminatory.
5. Only criteria based upon an individual's merit will be used in making determinations relating to the actions in paragraph number 2 and all other personnel matters. These decisions shall not be made on a basis of race, color, national origin, religion, sex (including pregnancy), disability, marital status, height, weight, age, genetic information, or arrest record.
6. The company will maintain a list of agencies to contact when there are job openings. Aside from the local unemployment office, this list will include organizations in the area who maintain lists of qualified minority and women applicants. These agencies will be contacted on an annual basis.
7. An Equal Employment Officer may be contacted in both Michigan and Florida main offices.

### **American with Disabilities Act (ADA) and Amendments Act (ADAAA)**

The American with Disabilities Act (ADA) and the Americans with Disabilities Amendments Act (ADAAA), are federal laws that prohibit employers with 15 or more employees from discriminating against applicants and individuals with disabilities and that when needed provide reasonable accommodations to applicants and employees who are qualified for a job, with or without reasonable accommodations, so that they may perform the essential job duties of the position.

It is the policy of MacKenzie Companies to comply with all federal and state laws concerning the employment of persons with disabilities and to act in accordance

with regulations and guidance issued by the Equal Employment Opportunity Commission (EEOC). Furthermore, it is our company policy not to discriminate against qualified individuals with disabilities in regard to application procedures, hiring, advancement, discharge, compensation, training or other terms, conditions and privileges of employment.

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The company will reasonably accommodate qualified individuals with a disability so that they can perform the essential functions of a job unless doing so causes a direct threat to these individuals or others in the workplace and the threat cannot be eliminated by reasonable accommodation and/or if the accommodation creates an undue hardship to MacKenzie Companies. Contact Human Resources with any questions or requests for accommodation.

### **Social Security Privacy Protection Policy**

This Social Security Privacy Protection Policy applies to Social Security Numbers (SSNs) that MacKenzie Companies obtains from employees. Access and/or disclosure of such information is restricted to those who have a legitimate business need for access and is stored in a safe and secure manner.

### **Background and Reference Checks**

To ensure that individuals who join MacKenzie Companies are well qualified and to ensure that MacKenzie Companies maintains a safe and productive work environment, it is our policy to conduct pre-employment background checks on all applicants who accept an offer of employment. Background checks may include verification of any information on the applicant's application form or resume. MacKenzie Companies also reserves the right to conduct a background check for current employees to determine eligibility for promotion or reassignment in the same manner as described above.

### **Sexual and Other Unlawful Harassment**

MacKenzie Companies is committed to providing a work environment that is free of discrimination and unlawful harassment. Actions, words, jokes, or comments based on an individual's sex, race, ethnicity, age, religion, or any other legally protected characteristic will not be tolerated. As an example, sexual harassment (both overt and subtle) is a form of employee misconduct that is demeaning to another person, undermines the integrity of the employment relationship, and is strictly prohibited.

If employees believe they have been subject to sexual harassment or any unwanted sexual attention, they should make their unease and/or disapproval directly and immediately known to the harasser and tell the harasser to stop. If the harasser does not stop, employees should promptly report the matter to his or her Supervisor. If the Supervisor is unavailable or the employee believes it would be inappropriate to contact that person, the employee should immediately contact Human Resources or the President of MacKenzie Companies. Employees can raise concerns and make reports without fear of reprisal.

Any Supervisor or Manager who becomes aware of possible sexual or other unlawful harassment should promptly advise Human Resources or the President

of MacKenzie Companies who will handle the matter in a timely and confidential manner.

Anyone engaging in sexual or other unlawful harassment will be subject to disciplinary action, up to and including termination of employment.

### **Employment Termination**

Termination of employment is an inevitable part of personnel activity within any organization, and many of the reasons for termination are routine. Below are examples of some of the most common circumstances under which employment is terminated:

**RESIGNATION** - voluntary employment termination initiated by an employee.

**DISCHARGE** - involuntary employment termination initiated by the organization.

**LAYOFF** - involuntary employment termination initiated by the organization for nondisciplinary reasons.

Since employment with MacKenzie Companies is based on mutual consent, both the employee and MacKenzie Companies have the right to terminate employment at will, with or without cause, at any time.

### **Return of Company Property**

The separating employee must return all company property at the time of separation, including but not limited to uniforms, cell phones, keys, credit cards, fuel cards and wash cards. Failure to return some items may result in deductions from the final paycheck. MacKenzie Companies may also take all action deemed appropriate to recover or protect its property.

### **Amendments**

No individual, other than the President of MacKenzie Companies, is authorized to amend these policies. The Employee Handbook is intended to give you a general overview of MacKenzie Companies and information regarding policies and procedures. Because we operate in a dynamic industry, some policies and benefits currently in effect may be revised, suspended, or eliminated by MacKenzie Companies in response to business needs or changing legal requirements.



## WORKPLACE SAFETY

To assist in providing a safe and healthful work environment for employees, customers, and visitors, MacKenzie Companies have established a workplace safety program. This program is a top priority for MacKenzie Companies. The Safety Director has responsibility for implementing, administering, monitoring, and evaluating the safety program. Its success depends on the alertness and personal commitment of all. Please refer to the *Safety Program Handbook* for further safety instructions and information.

MacKenzie Companies provide information to employees about workplace safety and health issues through training sessions and regular internal communication channels such as supervisor-employee meetings, bulletin board postings, newsletters, memos or other written communications.

Some of the best safety improvement ideas come from employees. Those with ideas, concerns, or suggestions for improved safety in the workplace are encouraged to raise them with their Supervisor, or with another Supervisor or Manager, or bring them to the attention of the Safety Director. All reports can be made without fear of reprisal.

Each employee is expected to obey safety rules and to exercise caution in all work activities. Employees must immediately report any unsafe condition to the appropriate Supervisor. Employees who violate safety standards, who cause hazardous or dangerous situations, or who fail to report or, where appropriate, remedy such situations, may be subject to disciplinary action, up to and including termination of employment.

In the case of accidents that result in injury, regardless of how insignificant the injury may appear, employees should immediately notify their Supervisor.

### **Workplace Monitoring**

Workplace monitoring may be conducted by MacKenzie Companies to ensure quality control, employee safety, security and customer satisfaction. MacKenzie Companies may conduct video surveillance of workplace areas. Video monitoring is used to identify safety concerns, maintain quality control, detect theft and misconduct, and discourage or prevent acts of harassment and workplace violence.

### **Drivers' License Records**

All employees must maintain a driving record acceptable to MacKenzie Companies. An employee who does not maintain an acceptable driving record will be subject to disciplinary action up to and including termination.

### **Employee Medical Examinations**

To help ensure that employees are able to perform their duties safely, medical examinations may be required.

After an offer has been made to an applicant entering a designated job category, a medical examination will be performed at MacKenzie Companies' expense by a

health professional of MacKenzie Companies' choice. The offer of employment and assignment to duties is contingent upon satisfactory completion of the exam.

Current employees may be required to take medical examinations to determine fitness for duty. Such examinations will be scheduled at reasonable times and intervals and performed at MacKenzie Companies' expense.

Information on an employee's medical condition or history will be kept separate from other employee information and maintained confidentially. Access to this information will be limited to those who have a legitimate need to know.

### **Drug and Alcohol Use**

MacKenzie Companies is committed to providing a safe, efficient and productive work environment for all employees. To promote this goal, employees are required to report to work in appropriate mental and physical condition to perform their jobs in a satisfactory manner.

Using or being under the influence of drugs or alcohol on the job may pose serious safety and health risks. While on MacKenzie Companies' premises (including job sites), during lunch and rest breaks (including off-site locations), and when conducting business-related activities off MacKenzie Companies' premises, no employee may use, possess, distribute, sell, or be under the influence of alcohol or illegal drugs. The legal use of prescribed drugs is permitted on the job only if it does not impair an employee's ability to perform the essential functions of the job effectively and in a safe manner that does not endanger other individuals in the workplace.

Violations of this policy may lead to disciplinary action, up to and including immediate termination of employment, or required participation in a substance abuse rehabilitation or treatment program. Such violations may also have legal consequences.

### **Testing for Alcohol and Drugs**

Employees are subject to testing of urine and/or blood to detect prohibited drugs or alcohol in the following circumstances:

1. **Pre-Employment Testing.**  
All prospective job candidates must pass a drug test as a condition of employment.
2. **Reasonable Cause Testing.**  
Employees may be subject to a fitness for duty evaluation, to include appropriate urine and/or blood testing, when there is reason to believe that drug or alcohol use is adversely affecting job performance. Examples of reasonable cause include but are not limited to the following: (a) physical signs and symptoms consistent with prohibited drug and alcohol use, (b) evidence of the distribution, dispensing, possession or use of prohibited drugs or alcohol, (c) occurrence of an accident that may have been caused by human error.

3. Post-Accident Testing.

Drug and alcohol testing is mandatory for any employee who either contributed to an accident or appears to have contributed to an accident involving death. Drug and alcohol testing may be required in the event of any injury or damage to property, at MacKenzie Companies' discretion.

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4. Return to Duty Testing.

Any employee who has enrolled in a rehabilitation program or is off work for failing a drug and/or alcohol test must pass a return to duty drug or alcohol test before returning to work. Any employee who has completed rehabilitation under the EAP program and who has tested negative on the return to duty test will be subject to unannounced drug and/or alcohol tests after being returned to work.

5. CDL Required Testing.

All CDL drivers are subject to the U.S. Department of Transportation's Federal Motor Carrier Safety Administration's drug and alcohol regulations and testing. For more information, refer to our Drug and Alcohol Plan for CDL Drivers.

Employees with drug or alcohol problems that have not resulted in, and are not the immediate subject of, disciplinary action may request approval to take unpaid time off to participate in a rehabilitation or treatment program. Leave may be granted if the employee agrees to abstain from use of the problem substance; abides by all MacKenzie Companies' policies, rules, and prohibitions relating to conduct in the workplace; and if granting the leave will not cause MacKenzie Companies any undue hardship.

Our Employee Assistance Program (EAP) provides confidential counseling and referral services to employees for assistance with such problems as drug and/or alcohol abuse or addiction. It is the employee's responsibility to seek assistance from the EAP prior to reaching a point where his or her judgment, performance, or behavior has led to imminent disciplinary action. Participation in the EAP after the disciplinary process has begun may not preclude disciplinary action, up to and including termination of employment.

Employees with questions on this policy or issues related to drug or alcohol use in the workplace should raise their concerns with their Supervisor or Human Resources without fear of reprisal.

# **WORKPLACE EXPECTATIONS**

## **New Employee Orientation**

The first thirty (30) days of employment are considered to be an orientation period. During this time, you will have a chance to determine your satisfaction with MacKenzie Companies and your job. At the same time, your Supervisor will evaluate your work and attitude to determine if you are in the right job and able to meet the job requirements.

## **Work Schedules**

Work schedules for employees vary throughout our organization. All employees are expected to report to work as needed. Staffing needs and operational demands may necessitate variations in starting and ending times, as well as variations in the total hours that may be scheduled each day and week. If employees do not avail themselves to work the necessary hours, within reason, they may become ineligible to receive certain benefits. Supervisors will advise employees of their individual work schedules. All employees must be conveniently reachable via phone in order to receive work schedules.

## **Attendance and Punctuality**

To maintain a safe and productive work environment, MacKenzie Companies expect employees to be reliable and to be punctual in reporting for scheduled work. Absenteeism and tardiness place a burden on other employees and on MacKenzie Companies. In the rare instances when employees cannot avoid being late to work or are unable to work as scheduled, they should notify their Supervisor as soon as possible in advance of the anticipated tardiness or absence. Poor attendance and excessive tardiness are disruptive. Either may lead to disciplinary action, up to and including termination of employment.

## **Job Sites/Teamwork**

All crew members are expected to work as a team and remain on site until the following items are complete at the end of every work day:

- All equipment tracks are cleaned
- All equipment is fueled and greased
- The job site is cleaned up.

Please work together to make sure our equipment and job sites are properly maintained.

## **Employee Conduct and Work Rules**

To ensure orderly operations and provide the best possible work environment, MacKenzie Companies expect employees to follow rules of conduct that will protect the interests and safety of all employees and the organization. Employees are expected to act in a professional manner in order to maintain a working environment that encourages mutual respect among coworkers, customers, vendors and subcontractors, and is free from all forms of harassment and violence.

It is not possible to list all the forms of behavior that are considered unacceptable in the workplace. The following are examples of infractions of rules of conduct that

may result in disciplinary action, up to and including termination of employment:

- Theft or inappropriate removal or illegal possession of company property.
- Falsification of timekeeping records.
- Working under the influence of alcohol or illegal drugs.
- Possession, distribution, sale, transfer, or use of alcohol or illegal drugs in the workplace, while on duty, or while operating employer-owned vehicles or equipment.
- Violation of safety or health rules.
- Absenteeism or any absence without notice.
- Behaving in a manner that is hostile or disrespectful.

Employment with MacKenzie Companies is at the mutual consent of MacKenzie Companies and the employee, and either party may terminate that relationship at any time, with or without cause, and with or without advance notice.

### **Confidentiality**

Employees are expected to maintain the confidentiality of MacKenzie Companies' trade secrets and private or confidential information. Trade secrets may include information regarding the development of systems, processes, know-how and technology. Do not post internal reports, job site photos, policies, procedures or other internal business-related confidential communications without prior approval.

Our clients and other parties with whom we do business entrust the company with important information relating to their businesses. It is our policy that all information considered confidential will not be disclosed to external parties or to employees without a "need to know." If an employee questions whether certain information is considered confidential, he/she should first check with his/her immediate supervisor. This policy is intended to alert employees to the need for discretion at all times and is not intended to inhibit normal business communications.

All media inquiries should be directed to the President of MacKenzie Companies. Employees should not speak to the media on MacKenzie Companies' behalf without prior approval from the President of MacKenzie Companies.

### **Social Media Policy**

MacKenzie Companies understand that social media can be a fun and rewarding way to share your life and opinions with family, friends and co-workers around the world. We also appreciate the dedication and enthusiasm of our workforce and the pride our employees have for our projects. However, use of social media also presents certain risks and carries with it certain responsibilities. To assist you in making responsible decisions about your use of social media, we have established these guidelines for appropriate use of social media.

#### **Guidelines**

In the rapidly expanding world of electronic communication, social media can mean many things. Social media includes all means of communicating or posting information or content of any sort on the Internet, including to your own or someone else's web log or blog, journal or diary, personal web site, social networking or affinity web site, web bulletin board or a chat room, whether or not

associated or affiliated with MacKenzie Companies, as well as any other form of electronic communication.

### **Know and follow the rules**

Ultimately, you are solely responsible for what you post online. Before creating online content, consider some of the risks and rewards that are involved. Keep in mind that any of your conduct or postings regarding your job performance, the performance of fellow associates, customers, suppliers, people who work on behalf of MacKenzie Companies or MacKenzie Companies legitimate business interests, could have adverse effects.

Inappropriate postings that may include discriminatory remarks, harassment, and threats of violence or similar inappropriate or unlawful conduct will not be tolerated and may subject you to disciplinary action up to and including termination. Always be fair and courteous to fellow associates, customers, members, suppliers or people who work on behalf of MacKenzie Companies. Also, keep in mind that you are more likely to resolve work-related complaints by speaking directly with your co-workers or by utilizing our Open Door Policy than by posting complaints to a social media outlet. Nevertheless, if you decide to post complaints or criticism, avoid using statements, photographs, video or audio that reasonably could be viewed as malicious, obscene, threatening or intimidating, that disparage customers, members, associates or suppliers, or that might constitute harassment or bullying. Examples of such conduct might include offensive posts meant to intentionally harm someone's reputation or posts that could contribute to a hostile work environment on the basis of race, sex, disability, religion or any other status protected by law or company policy.

### **Be honest and accurate**

Make sure you are always honest and accurate when posting information or news, and if you make a mistake, correct it quickly. Be open about any previous posts you have altered. Remember that the Internet archives almost everything; therefore, even deleted postings can be searched. Never post any information or rumors that you know to be false about MacKenzie Companies, fellow associates, members, customers, suppliers, and others working on behalf of MacKenzie Companies or competitors.

### **Post only appropriate and respectful content**

- Maintain the confidentiality of MacKenzie Companies trade secrets and private or confidential information. Trade secrets may include information regarding the development of systems, processes, products, know-how and technology. Do not post internal reports, policies, procedures or other internal business-related confidential communications.
- Do not create a link from your blog, website or other social networking site to a MacKenzie Companies website without identifying yourself as a MacKenzie Companies associate.
- Express only your personal opinions. Never represent yourself as a spokesperson for MacKenzie Companies. If MacKenzie Companies is a subject of the content you are creating, be clear and open about the fact that

you are an associate and make it clear that your views do not represent those of MacKenzie Companies, fellow associates, members, customers, suppliers or people working on behalf of MacKenzie Companies. If you do publish a blog or post online related to the work you do or subjects associated with ~~MacKenzie Companies, make it clear that you are not speaking on behalf~~ of MacKenzie Companies. It is best to include a disclaimer such as "The postings on this site are my own and do not necessarily reflect the views of MacKenzie Companies."

### **Using social media at work**

Refrain from using social media while on work time or on equipment we provide, unless it is work-related as authorized by your manager or consistent with the Company Equipment Policy. Do not use MacKenzie Companies email addresses to register on social networks, blogs or other online tools utilized for personal use.

### **Retaliation is prohibited**

MacKenzie Companies prohibits taking negative action against any associate for reporting a possible deviation from this policy or for cooperating in an investigation. Any associate who retaliates against another associate for reporting a possible deviation from this policy or for cooperating in an investigation will be subject to disciplinary action, up to and including termination.

Please refer to our Employee Handbook for other policies and procedures that relate to confidentiality and/or social media, and do not allow the posting of internal reports, job site photos, policies, procedures or other internal business-related confidential communications without prior approval.

### **Solicitations, Distributions and Posting of Materials**

Non-employees may not solicit employees or distribute literature of any kind on Company premises at any time. Employees may only admit non-employees to work areas with management approval or as part of a Company-sponsored program. These visits should not disrupt workflow. Former employees are not permitted onto Company property except for official Company business. The sole exceptions to this policy are charitable and community activities supported by MacKenzie Companies' management and company-sponsored programs related to MacKenzie Companies' services.

### **Use of Phone and Mail Systems**

Employees should practice discretion in using company phones when making personal calls and may be required to reimburse MacKenzie Companies for any charges resulting from their personal use. The use of MacKenzie Companies-paid postage for personal correspondence is not permitted.

### **Use of Cell Phones**

In the interest of everyone's safety and production, employees' personal cell phones must be left in vehicles. Equipment operators, laborers and pipe layers shall not take their cell phones onto our job sites. In the event of an emergency, family members may contact the office in order to contact employees between break periods. Cell phones must be a hands-free application in order to use while driving company motor vehicles.

## **Use of Equipment and Vehicles**

Equipment and vehicles essential in accomplishing job duties are expensive and may be difficult to replace. They are for business use only and are only to be operated by the assigned driver or another approved driver of the company. When using property, employees are expected to exercise care, perform required maintenance, and follow all operating instructions, safety standards and guidelines.

All company drivers are expected to remain safe and courteous at all times. Aggressive driving or behaviors, even when reacting to a situation where the other driver is at fault, is never appropriate. Always remain in control of your vehicle, stay safe, maintain a calm demeanor, and do not make or reciprocate any gestures, actions or words.

Please notify the Supervisor if any equipment, machines, tools, or vehicles appear to be damaged, defective, or in need of repair. Prompt reporting of damages, defects, and the need for repairs could prevent deterioration of equipment and possible injury to employees or others. The Supervisor can answer any questions about an employee's responsibility for maintenance and care of equipment or vehicles used on the job.

Equipment Operators are required to complete an *equipment repair request* every week regardless of whether or not the equipment requires repair. The unit number and equipment hours or miles must be written on the repair request in order to track necessary equipment maintenance.

Drivers are required to complete a *daily vehicle inspection report* every day.

The improper, careless, negligent, destructive, or unsafe use or operation of equipment or vehicles, as well as excessive or avoidable traffic and parking violations, can result in disciplinary action, up to and including termination of employment.

## **Employee Purchases**

Receipts must be turned in to the office for all purchases, with a clear description on the receipt for the intended use. An employee who does not deliver the required receipt to the office will be held accountable for the charges.

Any purchase made by any employee of MacKenzie Companies that is not required for use related to a specific project is to be authorized prior to the purchase. Examples of non-project related purchases include but are not limited to cell phones, food and beverages, computers and accessories, and electronics.

In no instance shall an employee purchase an item either with company credit account or company credit card that is intended for non-business use.

## **Documentation and Record Keeping**

Employees are required to maintain, complete and report all necessary records on a timely and accurate basis. Documentation such as receipts, shippers, purchase orders and invoices must be turned in to the appropriate office with purchaser's (employee) name, written legibly (not signed), equipment and/or job number and phase code written legibly on the document. Accidents, damages to equipment and/or property and theft of company property must be reported promptly as well.



## **Personnel Data Changes**

It is the responsibility of each employee to promptly notify MacKenzie Companies of any change in personal information. Personal mailing addresses, telephone numbers, number and names of dependents, individuals to be contacted in the event of an emergency, and other such status reports should be accurate and current at all times. If any personnel data has changed, please notify Human Resources.

## **COMPENSATION**

### **Timekeeping**

Accurately recording time worked is the responsibility of every hourly (nonexempt) employee. Federal and state laws require MacKenzie Companies to keep an accurate record of time worked in order to calculate employee pay and benefits. Time worked is the time actually spent on the job performing assigned duties. Hourly employees should accurately record the time they begin and end their work, as well as the beginning and ending time of each meal period. They should also record the beginning and ending time of any split shift or departure from work for personal reasons. It is the employees' responsibility to sign their time records to certify the accuracy of all time recorded. The Supervisor must review and initial the time record before it is submitted for payroll processing.

Altering, falsifying, tampering with time records, or recording time on another employee's time record may result in disciplinary action, up to and including termination of employment.

All time must be turned in to the appropriate office by the following Monday.

Job site work hours are turned in daily, on job daily reports. Job site Supervisors complete these reports which include all on-site crew members. Therefore, employees working on job sites do not need to complete tickets and have them verified. However, a *Payroll Time Sheet Summary* form is available for employees to complete so that our payroll department may verify hours worked have been turned in on the job daily. You must write your name on this form. The completion of the *Payroll Time Sheet Summary* is not mandatory; it is offered to help ensure the accuracy of your paycheck. You will not be paid from this form.

### **Payment of Wages**

All employees are paid weekly. Each paycheck will include earnings for all work performed through the end of the previous payroll period, and the check will be made available on Friday. In the event that a regularly scheduled payday falls on a day off such as a holiday, employees will receive pay on the last day of work before the regularly scheduled payday.

Employees may have pay directly deposited into their bank accounts if they provide MacKenzie Companies with their account information. The forms necessary to initiate direct deposit may be received from Human Resources. Employees will receive an itemized statement of wages every week.

### **Administrative Pay Corrections**

MacKenzie Companies take all reasonable steps to ensure that employees receive the correct amount of pay in each paycheck and that employees are paid promptly on the scheduled payday. In the event that there is an error in the amount of pay, the employee should promptly bring the discrepancy to the attention of the Payroll Administrator or Human Resources so that corrections can be made as quickly as possible.

### **BENEFITS**

Eligible employees at MacKenzie Companies are provided a wide range of benefits. A number of the programs (such as social security, workers' compensation and state unemployment insurance) cover all employees in the manner prescribed by law.

In addition, Group Health Insurance, Voluntary Benefits, a Profit Sharing/401(k) Plan, and an Employee Assistance Program are offered to eligible employees:

#### **Health Insurance**

Upon completion of a thirty (30) day new employee orientation period, eligible employees of MacKenzie Companies will be offered company provided health insurance within ninety (90) days. Temporary, seasonal employees, whose employment is expected to last for only a limited period of time, are not eligible for company provided health insurance. Employees must maintain an average of thirty (30) hours per week in order to be eligible for company provided health insurance coverage.

All employees must promptly report personal and dependent status changes to Human Resources.

As defined by the federal Consolidated Omnibus Budget Reconciliation Act (COBRA), employees and their qualified beneficiaries may have the opportunity to continue coverage under MacKenzie Companies' health plan, if enrolled, when a "qualifying event", as defined by COBRA, would normally result in the loss of eligibility. Under COBRA, the employee pays the full cost of coverage at MacKenzie Companies' group rates plus an administration fee of 2% (see below).

#### **Benefits Continuation (COBRA)**

The federal Consolidated Omnibus Budget Reconciliation Act (COBRA) gives employees and their qualified beneficiaries the opportunity to continue health insurance coverage under MacKenzie Companies' health plan when a "qualifying event" would normally result in the loss of eligibility. Some common qualifying events are resignation, termination of employment, or death of an employee; a reduction in an employee's hours or a leave of absence; an employee's divorce or legal separation; and a dependent child no longer meeting eligibility requirements.

Under COBRA, the employee or beneficiary pays the full cost of coverage at MacKenzie Companies' group rates plus an administration fee. Each eligible employee shall be provided with a written notice describing rights granted under COBRA when the employee becomes eligible for coverage under MacKenzie Companies' health insurance plan. The notice contains important information about employee rights and obligations.

## **Voluntary Benefits**

Once eligible for company-provided health insurance, employees of MacKenzie Companies may opt for voluntary benefits including dental, vision and Aflac. All policies are voluntary and at the employee's discretion and expense as pre-tax payroll deductions.

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### **Profit Sharing/401(k) Plan**

Provided you are not an Excluded Employee (as defined in the summary plan description), you will be eligible to participate in the Plan once you satisfy the Plan's age and service requirements. You will have met the age requirement when you attain age 18 and the service requirement when you complete one Year of Service. You will have completed a Year of Service if, at the end of your first twelve consecutive months of employment with us, you have been credited with at least 1,000 Hour(s) of service. If you have not been credited with 1,000 Hour(s) of Service by the end of your first twelve consecutive months of employment, your entry date into the Plan will be the first day of the Plan Year quarter coinciding with or next following the date you satisfy the eligibility requirements.

Notwithstanding the preceding, your entry date with respect to salary deferrals is the first day of the quarter coinciding with or immediately following the date you satisfy the Plan's salary deferral eligibility requirements. In addition, and notwithstanding the preceding, your entry date with respect to matching contributions is the first day of the quarter coinciding with or immediately following the date you satisfy the Plan's matching contribution eligibility requirements.

Once eligible to participate in the profit sharing/401(k) plan, all employees will automatically participate in the profit sharing portion of the plan. The profit sharing account is funded by yearly voluntary contributions made by MacKenzie Companies. The 401(k) portion of the plan, however, is voluntary and at the employee's discretion. Each employee is able to contribute up to 100% of his/her gross income (up to yearly IRS limit), and the company may, at its discretion, match a portion of this contribution. Employee contributions are only subject to social security taxes, as they are exempt from federal, state and local taxation. Please refer to the summary plan description for a complete description of participants' rights, obligations and benefits under the plan.

### **Employee Assistance Program**

MacKenzie Companies offer an employee assistance program (EAP) to all employees. All help received through the EAP is completely free and confidential. If you or members of your household seek help, this information is kept private. Only you can decide who will know about your participation. If you or members of your household have a personal problem, your EAP is ready to help. In Michigan, contact Sparrow's GuidanceResources EAPPlus at 877.595.5284. In Florida, contact Centerstone Employee Assistance Program at 941.782.4379.

Employees of MacKenzie Companies may also be referred to the EAP because of poor job performance. While an employee cannot be forced to participate or seek assistance through the program, the EAP can be helpful where job performance is a problem. By making available a system for employees to resolve personal problems,

MacKenzie Companies gain a more productive work force and a better functioning business.

## **TIME OFF/LEAVES OF ABSENCE**

### **Time Off Requests**

It is policy of MacKenzie Companies that all employees use time off requests to ensure better worksite communication.

### **Planned Time Off**

All employees must fill out a time off request when planning to take time off from work. If you are going to be away from the office or job site you must fill out a time off request.

### **Unplanned Time Off**

When unable to come to work for various reasons, such as an illness, you must contact your Supervisor. If your Supervisor is unreachable, you will need to contact the Dispatcher. The Dispatcher will notify your Supervisor of your absence. Your Supervisor or the Dispatcher will complete a time off request for you.

### **Jury Duty**

Upon receipt of notification from the state or federal courts of an obligation to serve on a jury, employees must notify their supervisor and provide him/her with a copy of the jury summons.

### **Military Leave**

MacKenzie Companies is committed to protecting the job rights of employees absent on military leave. In accordance with federal and state law, it is the company's policy that no employee or prospective employee will be subjected to any form of discrimination on the basis of that person's membership in or obligation to perform service for any of the Uniformed Services of the United States.

### **Lactation/Breastfeeding**

Pursuant to the Patient Protection and Affordable Care Act of 2010, and up to one year after a child's birth, MacKenzie Companies shall provide breastfeeding employees with reasonable break times as needed to express breast milk in a private location.

### **Family and Medical Leave (FMLA)**

Under this policy, MacKenzie Companies will grant up to 12 weeks (or up to 26 weeks of military caregiver leave to care for a covered service member with a serious injury or illness) of unpaid leave during a 12-month period to eligible employees. Please refer to the FMLA notice provided in the "Your Right to Know" folder for information on eligibility, types of leave covered, amount of leave, and other details.

3/29/21

E.T. MacKenzie Company

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**OSHA Citations during the past five years:**

5/20/19	#1403568	Closed; no safety manual on site. \$0 Citation.
5/10/18	#1323922	Closed; broken fire extinguisher, CPR, annual excavator inspection. \$0 Citation.
1/11/18	#1287402	Closed; improper angle of repose. \$2400 Citation.
7/24/17	#1249398	Closed; accident/fire prevention. \$0 Citation.
9/16/16	#1177755	Closed; life vest, buoy, step ladder. \$1500 Citation.

## **WORKPLACE SAFETY**

To assist in providing a safe and healthful work environment for employees, customers, and visitors, MacKenzie Companies have established a workplace safety program. This program is a top priority for MacKenzie Companies. The Safety Director has responsibility for implementing, administering, monitoring, and evaluating the safety program. Its success depends on the alertness and personal commitment of all. Please refer to the *Safety Program Handbook* for further safety instructions and information.

MacKenzie Companies provide information to employees about workplace safety and health issues through training sessions and regular internal communication channels such as supervisor-employee meetings, bulletin board postings, newsletters, memos or other written communications.

Some of the best safety improvement ideas come from employees. Those with ideas, concerns, or suggestions for improved safety in the workplace are encouraged to raise them with their Supervisor, or with another Supervisor or Manager, or bring them to the attention of the Safety Director. All reports can be made without fear of reprisal.

Each employee is expected to obey safety rules and to exercise caution in all work activities. Employees must immediately report any unsafe condition to the appropriate Supervisor. Employees who violate safety standards, who cause hazardous or dangerous situations, or who fail to report or, where appropriate, remedy such situations, may be subject to disciplinary action, up to and including termination of employment.

In the case of accidents that result in injury, regardless of how insignificant the injury may appear, employees should immediately notify their Supervisor.

### **Workplace Monitoring**

Workplace monitoring may be conducted by MacKenzie Companies to ensure quality control, employee safety, security and customer satisfaction. MacKenzie Companies may conduct video surveillance of workplace areas. Video monitoring is used to identify safety concerns, maintain quality control, detect theft and misconduct, and discourage or prevent acts of harassment and workplace violence.

### **Drivers' License Records**

All employees must maintain a driving record acceptable to MacKenzie Companies. An employee who does not maintain an acceptable driving record will be subject to disciplinary action up to and including termination.

### **Employee Medical Examinations**

To help ensure that employees are able to perform their duties safely, medical examinations may be required.

After an offer has been made to an applicant entering a designated job category, a medical examination will be performed at MacKenzie Companies' expense by a

health professional of MacKenzie Companies' choice. The offer of employment and assignment to duties is contingent upon satisfactory completion of the exam.

Current employees may be required to take medical examinations to determine fitness for duty. Such examinations will be scheduled at reasonable times and intervals and performed at MacKenzie Companies' expense.

Information on an employee's medical condition or history will be kept separate from other employee information and maintained confidentially. Access to this information will be limited to those who have a legitimate need to know.

#### **Drug and Alcohol Use**

MacKenzie Companies is committed to providing a safe, efficient and productive work environment for all employees. To promote this goal, employees are required to report to work in appropriate mental and physical condition to perform their jobs in a satisfactory manner.

Using or being under the influence of drugs or alcohol on the job may pose serious safety and health risks. While on MacKenzie Companies' premises (including job sites), during lunch and rest breaks (including off-site locations), and when conducting business-related activities off MacKenzie Companies' premises, no employee may use, possess, distribute, sell, or be under the influence of alcohol or illegal drugs. The legal use of prescribed drugs is permitted on the job only if it does not impair an employee's ability to perform the essential functions of the job effectively and in a safe manner that does not endanger other individuals in the workplace.

Violations of this policy may lead to disciplinary action, up to and including immediate termination of employment, or required participation in a substance abuse rehabilitation or treatment program. Such violations may also have legal consequences.

#### **Testing for Alcohol and Drugs**

Employees are subject to testing of urine and/or blood to detect prohibited drugs or alcohol in the following circumstances:

1. **Pre-Employment Testing.**  
All prospective job candidates must pass a drug test as a condition of employment.
2. **Reasonable Cause Testing.**  
Employees may be subject to a fitness for duty evaluation, to include appropriate urine and/or blood testing, when there is reason to believe that drug or alcohol use is adversely affecting job performance. Examples of reasonable cause include but are not limited to the following: (a) physical signs and symptoms consistent with prohibited drug and alcohol use, (b) evidence of the distribution, dispensing, possession or use of prohibited drugs or alcohol, (c) occurrence of an accident that may have been caused by human error.

#### **3. Post-Accident Testing.**

Drug and alcohol testing is mandatory for any employee who either contributed to an accident or appears to have contributed to an accident involving death. Drug and alcohol testing may be required in the event of any injury or damage to property, at MacKenzie Companies' discretion.

#### **4. Return to Duty Testing.**

Any employee who has enrolled in a rehabilitation program or is off work for failing a drug and/or alcohol test must pass a return to duty drug or alcohol test before returning to work. Any employee who has completed rehabilitation under the EAP program and who has tested negative on the return to duty test will be subject to unannounced drug and/or alcohol tests after being returned to work.

#### **5. CDL Required Testing.**

All CDL drivers are subject to the U.S. Department of Transportation's Federal Motor Carrier Safety Administration's drug and alcohol regulations and testing. For more information, refer to our Drug and Alcohol Plan for CDL Drivers.

Employees with drug or alcohol problems that have not resulted in, and are not the immediate subject of, disciplinary action may request approval to take unpaid time off to participate in a rehabilitation or treatment program. Leave may be granted if the employee agrees to abstain from use of the problem substance; abides by all MacKenzie Companies' policies, rules, and prohibitions relating to conduct in the workplace; and if granting the leave will not cause MacKenzie Companies any undue hardship.

Our Employee Assistance Program (EAP) provides confidential counseling and referral services to employees for assistance with such problems as drug and/or alcohol abuse or addiction. It is the employee's responsibility to seek assistance from the EAP prior to reaching a point where his or her judgment, performance, or behavior has led to imminent disciplinary action. Participation in the EAP after the disciplinary process has begun may not preclude disciplinary action, up to and including termination of employment.

Employees with questions on this policy or issues related to drug or alcohol use in the workplace should raise their concerns with their Supervisor or Human Resources without fear of reprisal.

# **Safety Program**

**E.T. MacKenzie Company**



# MICHIGAN SAFETY AND HEALTH PROTECTION ON THE JOB

THE MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ACT, 1974 PA. 154, AS AMENDED, REQUIRES POSTING OF THIS DOCUMENT IN A CENTRAL AND CONSPICUOUS LOCATION. FAILURE TO DO SO MAY RESULT IN A PENALTY.

The Michigan Occupational Safety and Health Act (MIOSH Act), Act No. 154 of the Public Acts of 1974, as amended, provides job safety and health protection for Michigan employees through the maintenance of safe and healthful working conditions. Under the MIOSH Act and a state plan approved in September 1973 by the U.S. Department of Labor, the Michigan Department of Licensing and Regulatory Affairs is responsible for administering the Act. Department representatives conduct job site inspections and investigations to ensure compliance with the Act and with safety and health standards.

The contents of this poster describe many important provisions of the Act. These provisions apply equally to employers and employees in either private industry or the public sector.

#### EMPLOYER REQUIREMENTS: MIOSHA requires that each employer:

1. Furnish to each employee employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to the employee.
2. Comply with promulgated rules and standards and with orders issued pursuant to the Act.
3. Post this and other notices and use other appropriate measures to keep his or her employees informed of their protection and obligations under the Act, including the provisions of applicable rules and standards.
4. Notify the Michigan Department of Licensing and Regulatory Affairs within 8 hours of any work-related fatality. Notification may be accomplished by calling 1-800-858-0397.
5. Notify the Michigan Department of Licensing and Regulatory Affairs within 24 hours of all work-related inpatient hospitalizations, amputations and losses of an eye. Notification may be accomplished by calling 1-844-464-6742 (MIOSHA).
6. Make available to employees, for inspection and copying, all medical records and health data in the employer's possession pertaining to that employee.
7. Afford an employee an opportunity with or without compensation to attend all meetings between the Department of Licensing and Regulatory Affairs and the employer relative to any appeal of a citation by the employer.
8. Give the representative of employees the opportunity to accompany the department during the inspection or investigation of a place of employment and to prohibit the suffering of any loss of wages or fringe benefits or discriminate against the representative of employees for time spent participating in the inspection, investigation, or opening and closing conferences.
9. Provide personal protective equipment, at the employer's expense, when it is specifically required by a MIOSHA standard.
10. Not permit an employee, other than an employee whose presence is necessary to avoid, correct or remove an imminent danger, to operate equipment or engage in a process which has been tagged by the Department and which is the subject of an order issued by the Department identifying that an imminent danger exists.
11. To promptly notify an employee who was or is being exposed to toxic materials or harmful physical agents in concentrations or at levels which exceed those prescribed by a MIOSHA standard.

#### EMPLOYEE REQUIREMENTS: MIOSHA requires that each employee:

1. Comply with promulgated rules and standards and with orders issued pursuant to the Act.
2. Not remove, displace, destroy, or carry off a safeguard furnished or provided for use in a place of employment, or interfere in any way with the use thereof by any other person.

**INSPECTIONS/INVESTIGATIONS:** Inspections and investigations are conducted by trained personnel. The Act requires that an employer representative and a representative of employees be given an opportunity to accompany the department representative for the purpose of aiding in the inspection or investigation.

If a representative of employees does not participate, the department representative will consult with a number of employees concerning matters of safety or health in the place of employment.

**COMPLAINTS:** Employees and employee representatives who believe that an unsafe or unhealthful condition exists in their workplace have the right to request an inspection by giving written notice to the Department of Licensing and Regulatory Affairs. If a condition exists which may present an immediate danger, the Department should be notified in the most expedient manner without regard to a written notice. The names of complainants will be kept confidential and not revealed upon the request of the employee. Employees also have the right to bring unsafe or unhealthful conditions to the attention of the department representative during the conduct of an inspection or investigation.

The Act provides that employees may not be discharged or in any manner discriminated against for filing a complaint or exercising any of their rights under the Act. An employee who believes he or she has been discriminated against may file a complaint with the Michigan Department of Licensing and Regulatory Affairs within 30 days of the alleged discrimination.

The U.S. Department of Labor is monitoring the operation of the Michigan Occupational Safety and Health Administration (MIOSHA) to assure the effective administration of the state act. Any person may make a written complaint regarding the state administration of the state act directly to the Regional Office of OSHA, 230 South Dearborn, Chicago, Illinois 60604.

**CITATIONS:** If upon inspection or investigation the Department of Licensing and Regulatory Affairs believes that a requirement of the Act has been violated, a citation alleging such violation and setting a time period for correction will be issued to the employer. The citation must be prominently posted at or near the place of the alleged violation for three days or until the violation is corrected, whichever is later.

The Act provides for first instance penalties of up to \$7,000 for a violation. Penalties of up to \$7,000 per day may be assessed for failure to correct a violation within a proposed abatement period. Any employer who willfully or repeatedly violates the Act may be assessed penalties of up to \$70,000 for each such violation. Employers may appeal the alleged citation, the proposed penalties or the abatement periods to the Department and to the Board of Health and Safety Compliance and Appeals. Employees may appeal the abatement period in a similar manner. Employees also may appeal to the Board of Health and Safety Compliance and Appeals any decision issued by the Department in response to an employer appeal.

Criminal penalties also are provided for in the Act. A person who knowingly makes a false statement or report pursuant to the Act upon conviction is punishable by a fine of up to \$10,000 or may be imprisoned for not more than 6 months or both. Any willful violation resulting in death of an employee, upon conviction, is punishable by a fine of up to \$10,000 or by imprisonment for not more than one year or both. A second conviction doubles the maximum monetary penalty and is punishable by imprisonment for up to three years.

**VOLUNTARY ACTIVITY & COMPLIANCE ASSISTANCE:** The act encourages employers and employees to reduce workplace hazards voluntarily.

The Michigan Department of Licensing and Regulatory Affairs offers limited on-site consultation assistance to employers to assist them in achieving compliance with occupational safety and health standards. Training specialists are available and can give advice on the correction of hazardous conditions and on the development of safety and health systems. Department staff are available to conduct seminars and training relative to occupational safety and health for both employer and employee groups. Requests for service should be addressed to the department at the address shown below.

The U.S. Department of Labor will continue to enforce federal standards governing maritime operations of long shoring, shipbuilding, ship breaking and ship repairing. These issues are not covered by the Michigan Plan for Occupational Safety and Health.

#### MORE INFORMATION:

Department of Licensing and Regulatory Affairs  
Michigan Occupational Safety & Health Administration  
530 W. Allegan Street, Box 30643  
Lansing, Michigan 48909-8143  
[www.michigan.gov/minsha](http://www.michigan.gov/minsha)

## THIS IS AN IMPORTANT DOCUMENT - DO NOT COVER!



MIOSHA Complaint Hotline ..... 1-800-866-4674  
Fatality Hotline ..... 1-800-858-0397  
MIOSHA Injuries/Illnesses Reporting ..... 1-844-464-6742  
Consultation and Training Assistance ..... 1-517-284-7720



The Department of Licensing and Regulatory Affairs will not discriminate against any individual or group because of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. If you need assistance with reading, writing, hearing, etc., under the Americans with Disabilities Act, you may make your need known to this agency (10,000 copies printed at \$705.54 or \$0.07 per copy)

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# Introduction

It is the policy of this company to provide a safe workplace for its employees. To this end, the company, in concert with employees, will comply with all applicable standards promulgated pursuant to the Michigan Occupational Safety and Health Act (MIOSHA) and the Mine Safety and Health Act (MSHA). MIOSHA and MSHA standards are available upon request (see your Safety Officer), or online at [www.michigan.gov/lara](http://www.michigan.gov/lara) and [www.msha.gov](http://www.msha.gov), respectively.

Since the most important component of any safety policy or program is implementation, it is our intent to communicate the contents of this program to our employees. In turn, all employees are expected to comply with this document and may be disciplined if found to be in noncompliance.

# Accident Prevention Program/ General Safety Rules

1. It is the policy of this company to furnish each employee employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to such employee.
2. This company designates \_\_\_\_\_ as corporate Safety Officer. This person is responsible for the implementation of the company's safety program. If any employee needs to know who the company Safety Officer is, they can find out by asking any foreman.
3. Employees of MacKenzie Companies participate in formal and informal training programs as necessary to their daily work routines.
4. A qualified employee will be designated on each crew or project who will have the following responsibilities:
  - a. Instruct each employee regarding operating procedures, hazard and safeguards of tools and equipment when necessary to perform the job.
  - b. Inspect the construction site, tools and equipment to assure unsafe conditions that may create a hazard are eliminated.
  - c. Instruct each employee in the recognition and avoidance of hazards.
  - d. Instruct each employee, where known harmful plants, reptiles, animals or insects are present, as to the potential hazards, how to avoid injury, and applicable first aid procedures to be used in the event of injury.
  - e. Instruct each employee required to handle or use known poisons, toxic materials, caustics and other harmful substances regarding the potential hazards, safe handling, use personal hygiene, protective measures required and applicable first aid procedures to be used in the event of injury.

- f. Instruct each employee required to enter a confined space regarding the hazards involved, the necessary precautions to be taken, the use of personal protective equipment, and the procedures to be followed if an emergency occurs.
- 
- g. Instruct all employees in the steps to be taken in case of an injury or accident.
5. The job foreman will inspect all machines, tools and equipment on a regular basis to make certain that no defect is present that will affect the safety of employees.
  6. All employee complaints or concerns regarding safety shall be immediately brought to the attention of the Supervisor and/or Safety Officer.
  7. Periodic meetings will be held to inform all employees of the Company safety program.
  8. This safety program shall be made available to all employees.
  9. A copy of the MITA Trench Safety Handbook shall be made available to all employees who are involved in working in open excavations.
  10. Safety bulletins are located at the main office and in each job trailer and include all required safety postings.
  11. All employees are expected to comply with all applicable standards promulgated pursuant to MIOSHA and MSHA as described in the introduction section of this safety handbook.
  12. Employees will adhere to the safety rules and programs within this safety handbook.

# Safety Rules and Programs

## MISCELLANEOUS RULES

1. Do not use tools or equipment that you have not been trained or authorized to use. This rule also applies to power-actuated tools.
2. Gasoline must be stored and transported in approved cans only. Engines must be shut off when refueling and no smoking anywhere near flammable liquids.
3. Immediately report all injuries, whether to yourself or a co-worker, to your foreman.
4. Do not distract the attention of fellow workers.

## TRENCHING RULES

1. Spoil pile must be at least 2 feet back from the lip of the trench.
2. All employees working in excavations or trenches must always stay within the protective system (trench shield, shoring, sloping).
3. Never climb on shoring, trench shields, or sloped walls or ride on any lift, hook, chain, cable, sling, or other equipment parts.
4. Ladders in a trench must extend at least 3 feet above the top of the trench. All employees working in a trench must be within 25 feet of a ladder or ramp.
5. For further excavation information, refer to the *MITA Trench Safety Handbook*, or Part 9 of MIOSHA Standards.
6. All trenches over 5' deep must be cut to the angle of repose, sheeted or shored.

# CONFINED SPACE PROGRAM

## GENERAL

### Confined Space Definition

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1. A confined space is a space having all of the following criteria: (1) is large enough and so configured that an employee can bodily enter, (2) has a limited or restricted means for entry and exit, and (3) is not designed for continuous employee occupancy.

Examples of locations where confined spaces may occur include, but are not limited to, storage tanks, manholes, sewers, water mains, storm drains, underground utility vaults, concrete pier columns, precast concrete manhole units, drilled shafts, pipelines, gatewells, ducts, catch basins and open top spaces such as pits, tubs, vaults, and vessels.

### Confined Space Classifications

1. Non-Permit Space is a confined space that does not contain existing or potential physical or atmospheric hazards. A space having only physical hazard(s) that have been isolated or eliminated can be reclassified as a non-permit space. Reclassifying is not allowed when a space contains an existing or potential atmospheric hazard(s) (i.e. existing sewers, manholes, and other similar locations).
2. Alternate Entry Space is a permit space that contains no physical hazards (or the physical hazards have been eliminated or isolated.; the existing or potential atmospheric hazards can be controlled by continuous mechanical forced air ventilation; and, in the event the ventilation system stops working, entrants can exit the space safely. Alternate entry procedures are less stringent than full permit space procedures.
3. Full Permit Space is a permit space that contains existing or potential physical and/or atmospheric hazards. Full permit space entry procedures are required when workers enter the space.

### MIOSHA Standard References

1. The requirements for confined spaces in construction are covered

in Construction Safety Standard (CS) Part 35 – Confined Space in Construction. Additional requirements for welding activities are covered in CS Part 7 – Welding and Cutting and General Industry Standard Part 12 – Welding and Cutting.

Part 35 – Confined Space in Construction does not apply to certain construction work activities such as diving, excavations, and underground construction (i.e. tunnels, shafts, cofferdams, and caissons). The requirements for these activities are covered in CS Part 9 – Excavation Trenching & Shoring and Part 14 – Tunnels, Shafts, Cofferdams, and Caissons; and Occupational Health Standards Part 504 - Diving Operations and Part 665 - Underground Construction, Caissons, Cofferdams, and Compressed Air.

### **Employee Responsibilities**

1. Employees must not enter a confined space until properly trained and authorized by the supervisor/foreman. If unsure whether an area or space is considered a confined space, contact your supervisor or foreman.

### **Employee Training**

1. Every employee shall receive training and instruction as to the existence, location, and dangers posed by permit spaces and that they must not enter such spaces without authorization by the supervisor/foreman.
2. Employees who are involved in alternate entry and full permit space entry work operations shall receive specific training to ensure they have the knowledge, understanding and skills to perform their duties safely; understand the hazards in the permit spaces and the methods used to isolate, control or protect workers; and the dangers of attempting entry rescue unless authorized.
3. Employee names, trainer names, specific duties training, and dates of training shall be recorded and maintained at the office. The training records shall be made available to employees upon request.



## FIRST STEP: INITIAL WORK SITE EVALUATION

1. Before work begins, the competent person (typically the foreman) must evaluate the worksite to determine if there are any spaces that workers may enter into that meet the definition of a confined space.
2. Employees are not authorized to enter a confined space until the foreman has determined which of the following classifications and entry procedures will be used to enter the space:
  - a. Non-Permit Space Entry
  - b. Alternate Entry Space
  - c. Full Permit Space Entry

Use the **Classifying Confined Spaces** flowchart (See Appendix A. for assistance in determining classification and entry procedures.

3. Each confined space must be evaluated for existing and/or potential physical and atmospheric hazards. Whenever possible, the initial evaluation shall be completed without entering the space. If entry into the space is necessary to complete an initial evaluation, full permit space entry procedures are required.
4. The atmosphere in the space must be tested prior to changing the space's natural ventilation. Direct-reading instruments must be calibrated per manufacturers' specification and used to test for oxygen content, flammable gases and vapors, and potential toxic air contaminants, in this order. The testing will determine whether the following hazards are present or could be introduced by the work operation:
  - a. Oxygen deficiency (concentration less than 19.5 %) or excess (concentration above 23.5 %).
  - b. Concentration of any flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL).
  - c. Airborne combustible dust at a concentration equal to or greater than its lower explosive limit.
  - d. Atmospheric concentration of any substance that can cause death,

incapacitation, impairment of ability to self-rescue, injury or acute illness.

5. **Section 1** of the **Pre Entry Checklist** (See Appendix B. must be completed for each confined space that employees may enter into and kept available at the job site. The Pre-Entry Certification (PEC) is necessary to document the results of the initial evaluation and atmospheric testing; and is the rationale used to classify the space and the entry procedures.

## **NON-PERMIT SPACE ENTRY**

1. If a space does not have an existing or potential physical or atmospheric hazard, it is classified as a non-permit space, and employees may enter. **Danger signs are not required for non-permit spaces.**
2. If a space contains an existing or potential physical hazard(s) only, the space can be reclassified as a non-permit space if the physical hazards have been eliminated or isolated. The rationale must be documented in Section 1 on the Pre Entry Certification (PEC.. Reclassifying is not allowed when a space contains an existing or potential atmospheric hazard (i.e. existing sewers, manholes, and other similar locations). In this situation, go to the Alternate Entry Space section.
3. Periodic atmospheric testing and evaluations may be necessary to ensure employee safety in a non-permit space, especially when a work operation (i.e. welding, cutting, using toxic materials) could introduce a new hazard into the space. Anytime a periodic or subsequent atmospheric test is conducted, the results must be documented and kept at the work site. (See Appendix C.: **Confined Space Atmospheric Testing Data Sheet**. Atmospheric test results are not required to be documented if *continuously monitoring* the atmosphere within the space.
4. Employees must exit the space immediately if a hazard is introduced or detected. The space is then reclassified as a full permit space until additional testing and evaluation demonstrate that the space is

safe for re-entry. The event, hazards, and steps taken to eliminate or isolate the hazard in order to prevent another occurrence must be documented in Section 3 on the PEC. The foreman must include his/her signature authorizing re-entry into the space. In addition, the GC must be informed of any hazards that occurred or were created in the space during entry.

## **ALTERNATE ENTRY SPACE**

1. Alternate entry space procedures are less stringent requirements that may be used in lieu of the full permit space procedures, provided **all** of the following criteria can be obtained:
  - a. All physical hazards in the space are eliminated or isolated;
  - b. The only hazard is an actual or potential hazardous atmosphere that can be made safe for entry using continuous forced air ventilation; and
  - c. In the event the ventilation system stops working, entrants can exit the space safely.
2. Prior to entry, the foreman must inform the controlling contractor of the existence, location, and hazards likely to be confronted or created during entry, and that alternate entry procedures will be used to enter the space. When another employer's employee(s) is working in the space at the same time, or when work activities that could result in a hazard are performed in the space at the same time, the alternate entry procedures must be coordinated with the controlling contractor and the other affected employer.
3. **DANGER – PERMIT-REQUIRED CONFINED SPACE – DO NOT ENTER** signs must be posted at each alternative entry space location to prevent unauthorized entry.
4. *Sections 1 and 2* on the PEC must be completed prior to entering the space when using alternate entry procedures. This will document the hazards, precautions, entry procedures and the supporting data for using alternate entry procedures and to verify the space is safe for entry. The PEC must be made available to each employee entering

the space or to their authorized representative, as applicable, and kept at the job site.

5. Any conditions making it unsafe to remove an entrance cover (i.e. manhole cover) must be eliminated before the cover is removed. If an entrance cover is removed, the opening must be immediately guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and will protect employees from falling objects when working in the space.
6. Continuous mechanical forced air ventilation must be set up and used to ventilate the space. Exhaust ventilation and natural ventilation are not acceptable substitutes for forced air ventilation. The forced air ventilation must be directed to ventilate the immediate areas where each employee will be working within the space and must continue until all employees have left the space. The air supply for the forced air ventilation must be from a clean source and must not increase the hazards in the space.
7. After the space has been ventilated, the atmosphere must be re-tested prior to entry to ensure that the forced air ventilation is preventing the accumulation of a hazardous atmosphere. After re-testing, the atmosphere must be continuously monitored unless periodic monitoring is sufficient to ensure that the atmosphere remains nonhazardous. Anytime a periodic, subsequent or re-test of the atmosphere is conducted, the results must be documented and kept at the work site. (See Appendix C.: **Confined Space Atmospheric Testing Data Sheet**. Atmospheric test results are not required to be documented if *continuously monitoring* the atmosphere within the space.
8. Monitoring instruments must be equipped with an early warning audible alarm that is capable of alerting employees of any atmospheric hazard that may have entered into the space and provides sufficient time to exit the space.
9. If the ventilation system is equipped with an audible alarm, employee(s) must immediately leave the space on their own if the

ventilation stops for any reason when the alarm sounds.

If the ventilation system is not equipped with an audible alarm, an employee stationed at the top of the space opening (top man) must be readily available to monitor the ventilation system and be able to effectively communicate with the employees within to immediately exit the space on their own should the ventilation stop for any reason.

10. A safe method of entering and exiting the space must be provided. Any hoisting system that is used must either be designed or manufactured for personnel hoisting or be approved for personnel hoisting by a registered professional engineer prior to use.
11. Confirm local emergency units are readily available in the case of an emergency. **Attendants, rescue equipment and rescue teams are not required during alternate entry procedures unless the space is reclassified as a full permit space.**
12. If a hazard is detected while employees are working within the space, the foreman must ensure each worker leaves the space immediately. The space is then reclassified as a full permit space until additional testing and evaluation demonstrate that the space is safe for re-entry. The foreman must document the event, hazards, and steps taken to eliminate or isolate that hazard to prevent another occurrence in **Section 3** on the PEC. The foreman must include his/her signature authorizing re-entry into the space.
13. The GC must be notified when work has been completed and informed of any hazards that occurred or were created in the space during entry. Document this in **Section 4** on the PEC.

## **FULL PERMIT SPACE ENTRY**

1. Complete Section 1 of the PEC to verify the conditions of the permit space during the initial work site evaluation and prior to entry. When hazards or potential hazards within a space cannot be eliminated, isolated, controlled with ventilation, or entrants are unable to exit the space in the event the ventilation system stops working, full permit space entry procedures must be established and implemented.

2. DANGER – PERMIT-REQUIRED CONFINED SPACE – DO NOT ENTER signs must be posted at each full permit space location to prevent unauthorized entry.
3. Prior to entry, the foreman must inform the controlling contractor of the existence, and location, of hazards (including any hazards likely to be confronted or created), and that full permit entry procedures will be used to enter the space. The entry procedures must be coordinated with the controlling contractor when another employer's employee(s) is working in the permit space at the same time and when a work activity that could result in a hazard is performed in the space at the same time.
4. Full permit entry procedures must be developed and implemented to ensure safe entry into the space. The entry procedures must include, at a minimum, all of the following:
  - a. Specify the acceptable entry conditions;
  - b. Provide entrants or their authorized representative an opportunity to observe any monitoring or testing of space;
  - c. Isolate the space and physical hazards within the space;
  - d. Purging, inerting, flushing, or ventilating the space as necessary to eliminate or control atmospheric hazards;
  - e. Determine that, in the event the ventilation system stops working, the monitoring procedures and equipment will detect an increase in atmospheric hazard levels in sufficient time for entrants to safely exit the space;
  - f. Provide pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards;
  - g. Verify that conditions within the space are acceptable throughout entry.
5. Provide the following equipment, maintain the equipment, and ensure employees use the equipment properly:
  - a. Testing and monitoring equipment;
  - b. Ventilating equipment;

- c. Communication equipment;
  - d. Personal protective equipment when engineering and work-practice controls do not adequately protect employees;
- 
- e. Approved lighting equipment;
  - f. Barriers and shields;
  - g. Equipment, such as ladders, for safe access and egress;
  - h. Rescue and emergency equipment, unless equipment is provided by rescue services; and
  - i. Any other equipment necessary for safe entry into, safe exit from, and rescue.
6. Full permit space conditions must be evaluated as follows during entry:
- a. Test the atmosphere in the space before entry to determine if acceptable entry conditions exist before changes to the space's natural ventilation are made. If isolation of the space is infeasible, due to being large or is part of a continuous system (such as a sewer), all of the following must be conducted:
    - i. Perform pre-entry atmospheric testing to the extent feasible before entry;
    - ii. Continuous monitoring of conditions in the areas where entrants are working;
    - iii. Provide an early-warning system that continuously monitors for non-isolated engulfment hazards and alerts entrants and attendants in sufficient time to safely exit the space.
  - b. Continuously monitor atmospheric hazards unless periodic monitoring is sufficient to ensure that the atmosphere remains nonhazardous.
  - c. When testing the atmosphere, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.
  - d. Allow entrants or their authorized representative to observe any testing.
  - e. Reevaluate the space as requested by the entrant or their authorized representative and provide them with the results of any

testing.

7. The authorized entrant(s), attendant(s), and foremen each have specific duties whenever work is performed in a permit space. Their specific duties are listed below:

***Authorized entrants*** must:

- a. Know space hazards, including information on the means of exposure such as inhalation or skin contact, and symptoms of the exposure;
- b. Use appropriate personal protective equipment properly;
- c. Stay in communication with attendant as necessary to enable the attendant to monitor the entrant's status and alert to evacuate when necessary;
- d. Exit from the permit space as soon as possible when:
  - i. Ordered by the attendant or foreman;
  - ii. When he/she recognizes the warning signs or symptoms of exposure;
  - iii. A prohibited condition exists; or
  - iv. An automatic alarm is activated.
- e. Alert the attendant when a prohibited condition exists or when warning signs or symptoms of exposure exist.

***Attendants*** must:

- a. Remain outside the permit space during entry operations unless relieved by another authorized attendant;
- b. Perform non-entry rescues when specified by the rescue procedure;
- c. Know existing and potential hazards, including information on the types of exposure, signs or symptoms, consequences, and other effects;
- d. Maintain communication with and keep an accurate account of the workers within the space;
- e. Assess conditions inside and outside the space and order evacuation of the permit space when:



- i. A prohibited condition exists;
  - ii. A worker shows behavioral effects of hazard exposure;
  - iii. A situation exists outside the confined space that could endanger the employees within the space; and
  - iv. The attendant cannot effectively and safely perform required duties.
- f. Summon rescue and other services during an emergency and when a worker becomes injured or ill;
- g. Ensure that unauthorized people stay away from permit spaces or exit immediately if they have entered into the space;
- h. Inform entry employees and foreman if any unauthorized person enters the permit space; and
- i. Perform no other duties that interfere with the attendant's primary duties.

***Foremen*** must:

- a. Know space hazards including information on the mode of exposure, signs or symptoms and consequences;
  - b. Verify that specified entry conditions are satisfied, including permits, tests, procedures and equipment before allowing entry;
  - c. Terminate entry and cancel or suspend permits when entry operations are completed or if a condition that is not allowed under the permit arises;
  - d. Verify that rescue services are available and that the means for summoning them are operable;
  - e. Take appropriate measures to remove unauthorized entrants; and
  - f. Ensure that entry operations remain consistent with the entry permit and that acceptable entry conditions are maintained.
8. At least one attendant must be stationed outside the permit space when workers are working within, and maintain communication with all entrants and keep track of their conditions. If one or more entrants suffers an injury or illness and is unable to exit the space without help, the attendant must initiate a rescue. When an attendant is required to monitor multiple permit spaces, additional procedures

must be implemented in the event of an emergency within one or more of those spaces.

9. ***Rescue and emergency*** procedures must be established for summoning rescue and emergency services and preventing unauthorized personnel from attempting rescue.

- a. ***Non-entry rescue:*** It is preferable if the entrant(s) can be rescued without others entering the space to avoid having additional personnel exposure to the hazard that caused the illness or injury. Therefore, non-entry rescue procedures using retrieval equipment must be implemented, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant, such as when obstructions can snag the retrieval line or the line can become entangled with air lines or electric cords. The attendant must be prepared to perform non-entry rescues if needed.

When non-entry procedure is selected, each entrant must wear a chest or full body harness, with a retrieval line attached at the D-ring in the center of the back or another point which positions the entrant so that he or she is small enough to be pulled out of the space. The other end of the retrieval line must be attached to a mechanical device or a fixed point outside the permit space. A mechanical device must be available to retrieve someone from vertical type permit spaces more than 5 feet deep. Wristlets or anklets may be used instead of a chest or full body harness only if the employer can demonstrate that use of a chest or full body harness is infeasible or creates a greater hazard.

When a non-entry rescue procedure is selected, the foreman must also confirm, before entry begins, that emergency assistance (typically the local fire department) is available if the non-entry rescue fails.

- b. ***Entry rescue:*** When non-entry rescue is not feasible, the only way to rescue an entrant is for others to enter the permit space. For entry rescue, an on-site rescue team consists of our employees or another contractor's employees. An off-site rescue service is a

local fire department or other rescue service. The off-site rescue service must be able to respond in time to get the entrant out of the space to receive medical treatment, which requires the foreman to contact the rescue service prior to entering the space and informing them of the nature and hazards involved in the space. In some cases, this may require a standby rescue team, such as when the entrant is working in an atmosphere that is immediately dangerous to life or health (IDLH) and is wearing an airline respirator or a self-contained breathing apparatus.

When entry rescue takes place, an attendant must be stationed outside the permit space so that additional help can be summoned if needed. If the original attendant is to enter the space as part of the rescue team, a new attendant must be in position before the first attendant enters the space.

- c. ***Training requirements for rescue teams and off-site rescue services:*** All members of a rescue team must receive the training that is required for authorized entrants and have been trained to perform their assigned rescue duties. Rescue team members must be provided with personal protective and rescue equipment, including respirators, and must be instructed on how to use it. All rescuers must be trained in first aid and CPR. At a minimum, one rescue team member must be certified in first aid and CPR. Rescuers must be informed of the hazards within the permit space before entering. Rescue team practices or exercises must take place at least yearly. Off-site rescue services must be provided access to all permit spaces, if requested, in order to practice rescue operations.

Off-site rescue services must notify the foreman in the event that their service is unavailable. The permit space work can be postponed or another off-site rescue service can be used.

If using an off-site rescue service, the foreman must determine that the service has the ability and equipment to carry out a rescue in the particular permit space or type of permit space that entrants are working in. The foreman must contact the rescue service to make

sure that it will be able to respond in a timely manner whenever an entrant is in the permit space.

10. Full permit space entry procedures must be reviewed and deficiencies must be corrected whenever it is discovered that the procedures established may not be protecting employees adequately. Circumstances requiring a review include an injury or near misses, unauthorized entry, detection of a new hazard or condition prohibited by the Entry Permit, or an employee complaint about the program's effectiveness. In addition, the Full Permit Space Procedures will be reviewed annually for effectiveness using the cancelled entry permits
11. Prior to entry, a **Full Permit Space Entry Permit** (See Appendix D. must be completed for each full permit space that employees may enter into. The entry permit includes all of the following information:
  - a. Name of the permit space to be entered, authorized entrants(s), current attendants, and current entry foremen;
  - b. Purpose of entry;
  - c. Date and authorized duration of entry;
  - d. Means of detecting an increase in atmospheric hazard levels;
  - e. Name and signature of foreman who authorizes entry;
  - f. Known hazards in the space;
  - g. Measures to be taken to isolate permit spaces and to eliminate or control space hazards;
  - h. Acceptable entry conditions;
  - i. Test results, date and time of tests(s), and the tester's initials or signature;
  - j. Name and telephone numbers of rescue and emergency services and means to be used to contact them;
  - k. Communication procedures and equipment to maintain during entry;
  - l. Special equipment and procedures, including personal protective equipment and alarm systems;

- m. Any other information needed to ensure employee safety; and
  - n. Additional permits, such as for hot work, that have been issued authorizing work in the permit space.
- 

12. The foreman must cancel entry permits when work has been completed within the space or when new hazards or conditions occur. Once a permit is cancelled, entry under it is no longer permitted. New hazards or conditions must be noted on the cancelled permit and used in revising the permit space program. Once the work has been completed and the entry permit cancelled, it must be kept for a least one year.
13. The foreman may suspend an entry permit instead of cancelling it if a temporary condition has occurred in or near the space that, once corrected, is not expected to reoccur. The permit may be reinstated and entry may occur under the permit if the entry supervisor has determined that the conditions in the space match the allowable conditions listed on the permit.
14. The GC shall be informed when work has been completed within the space and of any hazards that occurred or were created in the space during entry.



## APPENDIX B PRE-ENTRY CHECKLIST

### SECTION 1: INITIAL WORK SITE EVALUATION

Date of Initial Evaluation:	Identify space being entered:	Person completing the evaluation:
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<p>Can the initial evaluation be completed without entering?</p> <p>Yes <input type="checkbox"/> <i>Continue to next box.</i></p> <p>No <input type="checkbox"/> <i>STOP! –Use full permit space procedures.</i></p>	<p>If a cover or guard has to be removed to perform the initial evaluation or testing, have all hazardous conditions been eliminated, isolated, or controlled?</p> <p>Yes <input type="checkbox"/> N/A <input type="checkbox"/></p>
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#### Atmospheric Hazard Assessment

<p>Record initial atmospheric testing:</p> <p>Oxygen <span style="float: right;">%</span></p> <p>Flammable/Explosive Gas <span style="float: right;">% LEL</span></p> <p>Hydrogen Sulfide (H<sub>2</sub>S) <span style="float: right;">PPM</span></p> <p>Carbon Monoxide (CO) <span style="float: right;">PPM</span></p> <p>Other (Specify) _____</p> <p>Record subsequent atmospheric testing on the Confined Space Atmospheric Testing Data Sheet (Appendix C).</p>	<p>Does the space contain a hazardous atmosphere?</p> <p>No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> (Only Alternate Entry or Full Permit Entry procedures are allowed.)</p> <hr/> <p>Could a hazardous atmosphere possibly enter the space after the initial testing, (i.e. sewers and manholes) or could a hazard be introduced from a work operation (i.e. welding, cutting, applying toxic material)?</p> <p>No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> (Only Alternate Entry or Full Permit Entry procedures are allowed.)</p>
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#### Physical Hazard Assessment

<p>Are there existing or potential physical hazards in the space (i.e. electrical, mechanical, engulfment)?</p> <p>No <input type="checkbox"/> Yes <input type="checkbox"/> (Check applicable boxes below)</p> <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Electrical</td> <td><input type="checkbox"/> Entrapment</td> </tr> <tr> <td><input type="checkbox"/> Mechanical</td> <td><input type="checkbox"/> Converging Walls</td> </tr> <tr> <td><input type="checkbox"/> Engulfment/Water</td> <td><input type="checkbox"/> Fall Hazard</td> </tr> <tr> <td><input type="checkbox"/> Hydraulic/Pneumatic</td> <td><input type="checkbox"/> Temp. Extreme</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other (Specify): _____</td> </tr> </table>	<input type="checkbox"/> Electrical	<input type="checkbox"/> Entrapment	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Converging Walls	<input type="checkbox"/> Engulfment/Water	<input type="checkbox"/> Fall Hazard	<input type="checkbox"/> Hydraulic/Pneumatic	<input type="checkbox"/> Temp. Extreme	<input type="checkbox"/> Other (Specify): _____		<p>If physical hazards were detected in the space, were they eliminated or isolated?</p> <p>No <input type="checkbox"/> Yes <input type="checkbox"/> (Check applicable boxes below)</p> <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Lock out/Tag out</td> <td><input type="checkbox"/> Personal Fall Arrest/Rest.</td> </tr> <tr> <td><input type="checkbox"/> Isolate/Guard</td> <td><input type="checkbox"/> Install Work Platform</td> </tr> <tr> <td><input type="checkbox"/> Purge/Drain/Clean</td> <td><input type="checkbox"/> Guard Rails/Hole Covers</td> </tr> <tr> <td><input type="checkbox"/> Blank/Block/Bleed</td> <td><input type="checkbox"/> Ventilation/Ice Vest</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other (Specify): _____</td> </tr> </table>	<input type="checkbox"/> Lock out/Tag out	<input type="checkbox"/> Personal Fall Arrest/Rest.	<input type="checkbox"/> Isolate/Guard	<input type="checkbox"/> Install Work Platform	<input type="checkbox"/> Purge/Drain/Clean	<input type="checkbox"/> Guard Rails/Hole Covers	<input type="checkbox"/> Blank/Block/Bleed	<input type="checkbox"/> Ventilation/Ice Vest	<input type="checkbox"/> Other (Specify): _____	
<input type="checkbox"/> Electrical	<input type="checkbox"/> Entrapment																				
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<input type="checkbox"/> Engulfment/Water	<input type="checkbox"/> Fall Hazard																				
<input type="checkbox"/> Hydraulic/Pneumatic	<input type="checkbox"/> Temp. Extreme																				
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<input type="checkbox"/> Isolate/Guard	<input type="checkbox"/> Install Work Platform																				
<input type="checkbox"/> Purge/Drain/Clean	<input type="checkbox"/> Guard Rails/Hole Covers																				
<input type="checkbox"/> Blank/Block/Bleed	<input type="checkbox"/> Ventilation/Ice Vest																				
<input type="checkbox"/> Other (Specify): _____																					

#### SPECIFY THE APPROPRIATE CLASSIFICATION AND ENTRY PROCEDURES

- Non-Permit Space.** There are no existing or potential physical hazards or atmospheric hazards. Periodic atmospheric testing may be necessary. Employees may enter the space.
- Alternate Entry Space.** There are no physical hazards. There are existing or potential atmospheric hazards that can be controlled by ventilation; and if the ventilation system stops working, entrants can exit the space safely on their own. Continue to Section 2: Alternate Entry Space.
- Full Permit Space.** There are physical hazards that cannot be eliminated or isolated and/or there are existing or potential atmospheric hazards that cannot be controlled by ventilation. Full permit space entry procedures are required.

**SECTION 2: ALTERNATE ENTRY SPACE**

Confined space danger sign posted at the space? Yes       Are local emergency services readily available? Yes

GC notified of the work and entry procedure? Yes  N/A       Alternate entry training provided to employees? Yes

Check applicable boxes describing the existing or potential atmospheric hazards detected in the space:

- Oxygen Deficiency       Carbon Monoxide (CO)       Flammable/Explosive Gases/Vapors (Specify):  
 Welding/Cutting       Hydrogen Sulfide (H<sub>2</sub>S)       Other (Specify):

Check applicable boxes that describe how the atmospheric hazards will be isolated or controlled in order to protect entrants:

- Mechanical ventilation system set at 100% outside air       Open additional manholes to increase air circulation  
 Use portable blowers to augment natural ventilation       Repeat atmospheric testing after ventilating the space  
 Continuous air monitoring during and after entry       No burning, cutting, or welding operations in the space  
 Use intrinsically safe lighting in the space       Other (Specify):

In the event the ventilation system stops working, check applicable boxes that describe how the atmospheric hazards will remain at safe levels long enough for entrants to recognize the problem and safely exit the space:

- Fully ventilated space while unoccupied to get non-detect readings for atmospheric hazards; then shut down ventilation and monitored air quality. If atmospheric hazards are detected that reach maximum limits, full permit space procedures will be implemented.  
 The atmospheric testing equipment is equipped with an audible alarm to alert entrants to exit the space.  
 Entrants are wearing personal air monitors that are equipped with an audible alarm to alert them to exit the space.  
 The ventilation system is equipped with an audible alarm to alert entrants to exit the space.  
 A top man is readily available to monitor the ventilation system and alert the entrants to exit the space.  
 Other (Specify):

Check applicable boxes that describe how employees are able to safely exit the space on their own:

- A fixed ladder is located in the space and safe for entrants to use to exit the space.  
 A portable ladder will remain in the manhole during the time entrants are working in the space.  
 A work platform has been installed in the space for egress.  
 Other (Specify):

Check appropriate boxes that describe any additional steps or monitoring to be taken to ensure conditions are safe from physical hazards:  Periodic inspections       Early warning system       Other (Specify):

**SECTION 3: COMPLETE ONLY WHEN A HAZARD IS DETECTED IN THE SPACE AFTER THE INITIAL EVALUATION**

Were employees evacuated from the space when the hazard was detected? Yes

Describe the event, hazard, and steps taken to eliminate or isolate the hazard to prevent another occurrence:

\_\_\_\_\_

\_\_\_\_\_

Is the space safe for re-entry?

Yes  *Employees may re-enter the space.* Foreman Signature: \_\_\_\_\_

No  *Employees must not enter the space. This is now re-classified as a full permit space. Full permit space procedures are required until space has been made safe for re-entry.*

**SECTION 4: AFTER WORK HAS BEEN COMPLETED IN THE SPACE**

GC informed that work has been completed? Yes       GC informed of any hazards detected during entry? Yes  N/A





## APPENDIX D FULL PERMIT SPACE ENTRY PERMIT

1. Permit space to be entered (i.e. sewer, tank, manhole, crawlspace, attic):		Host, GC and Subs notified of the work? Yes <input type="checkbox"/> NA <input type="checkbox"/>							
2. Purpose of entry:		Location:							
3. Date of entry:		Auth. duration of entry permit:		Entry supervisor print name/contact information:					
4. Rescue type selected: Non-entry <input type="checkbox"/> or Entry <input type="checkbox"/> Equipment: Tri-pod/Davit arm <input type="checkbox"/> or Emergency service <input type="checkbox"/> Emer. Service Available (Permit Space only): Onsite <input type="checkbox"/> or <input type="checkbox"/> Off-site (name & phone):		Communication Equipment: Radio <input type="checkbox"/> Voice <input type="checkbox"/> Cell Phone <input type="checkbox"/> Air Horn <input type="checkbox"/> <input type="checkbox"/> Other (Specify):							
Rescuer(s) trained in 1 <sup>st</sup> Aid/CPR (Permit Space only): <input type="checkbox"/> (Note: Part 1 1 <sup>st</sup> Aid requirements)									
5. Authorized entrants (Print Names) Use back or attach page for more entrants		Entry time		Entry time		Entry time		Entry time	
		In	Out	In	Out	In	Out	In	Out
6. Attendant (Print Name)		Date and Time		7. Current training for confined space workers verified?					
		<input type="checkbox"/> AM <input type="checkbox"/> PM		Yes <input type="checkbox"/> No <input type="checkbox"/>					
		<input type="checkbox"/> AM <input type="checkbox"/> PM							
8A. Identify, evaluate and record hazards of space to be entered.		Yes	No	8B. Specify equipment and measures required to eliminate/control hazards before and during entry					
A. Lack of Oxygen or Inert Gas Present (i.e. Argon, Nitrogen)	<input type="checkbox"/>	<input type="checkbox"/>	Continuous forced air ventilation <input type="checkbox"/> Blank, Block and Bleed <input type="checkbox"/>						
B. Flammable Gas/Vapor (%LEL)	<input type="checkbox"/>	<input type="checkbox"/>	Purge, Clean, Drain <input type="checkbox"/> Intrinsically Safe Lighting <input type="checkbox"/>						
C. Toxic Gas/Vapor (i.e. CO and H <sub>2</sub> S)	<input type="checkbox"/>	<input type="checkbox"/>	Respiratory Protection: Supplied Air with Escape Bottle <input type="checkbox"/> SCBA <input type="checkbox"/>						
D. Chemical (impairs self-rescue)	<input type="checkbox"/>	<input type="checkbox"/>	Other (list) <input type="checkbox"/>						
E. Electrical	<input type="checkbox"/>	<input type="checkbox"/>	Lockout/Tagout <input type="checkbox"/> Isolate/Guard <input type="checkbox"/>						
F. Mechanical	<input type="checkbox"/>	<input type="checkbox"/>	Blank, Block and Bleed <input type="checkbox"/> Other (list) <input type="checkbox"/>						
G. Hydraulic/Pneumatic	<input type="checkbox"/>	<input type="checkbox"/>							
H. Temp. Extreme	<input type="checkbox"/>	<input type="checkbox"/>	Continuous forced air ventilation <input type="checkbox"/> Ice Vest <input type="checkbox"/> Other (list) <input type="checkbox"/>						
I. Engulfment	<input type="checkbox"/>	<input type="checkbox"/>	Drain <input type="checkbox"/> Pump <input type="checkbox"/> Other (list) <input type="checkbox"/>						
J. Entrapment/Converging Walls	<input type="checkbox"/>	<input type="checkbox"/>	Install Work Platform <input type="checkbox"/> Hole Covers <input type="checkbox"/> Guard Rails <input type="checkbox"/> Personal Fall Arrest /Restraint <input type="checkbox"/>						
K. Fall Hazard	<input type="checkbox"/>	<input type="checkbox"/>	Other (list) <input type="checkbox"/>						
L. Introduced Hazards (i.e. Chemical, Hot Work)	<input type="checkbox"/>	<input type="checkbox"/>	Fire extinguisher <input type="checkbox"/> Hot Work Permit <input type="checkbox"/> Other (list) <input type="checkbox"/>						
M. Other	<input type="checkbox"/>	<input type="checkbox"/>	Warning signs posted at access <input type="checkbox"/> Additional PPE <input type="checkbox"/>						
9. Gas tester(s)/monitor model(s)/type(s):		Serial/unit no(s):							
		Bump test to confirm function? Yes <input type="checkbox"/> Verified: On-site test <input type="checkbox"/> Documentation <input type="checkbox"/>							
Test Required	Permissible levels	Initial test levels		Subsequent test type: Sample <input type="checkbox"/> Continuous <input type="checkbox"/>					
		(before vent)		(take readings before EACH entry into space)					
				Test 2	Test 3	Test 4	Test 5	Test 6	
A. Oxygen (O <sub>2</sub> )	19.5 to 23.5%								
B. Combustible gas/vapor (LEL)	10% LEL								
C. Hydrogen sulfide (H <sub>2</sub> S)	5 PPM								
D. Carbon monoxide (CO)	< 25 PPM								
E. Other									
	Tester initials								
	Test Times								
10. Are entry conditions acceptable? (Remove debris and other obstructions from entry point) Yes <input type="checkbox"/> No <input type="checkbox"/>									
Entry Suspended (time): _____ AM <input type="checkbox"/> PM <input type="checkbox"/>		Time of reentry: _____ AM <input type="checkbox"/> PM <input type="checkbox"/>							
Reason for suspending permit: _____									
Permit Canceled date/time _____ / _____ AM <input type="checkbox"/> PM <input type="checkbox"/>		Unanticipated Hazards? No <input type="checkbox"/> Yes <input type="checkbox"/> If yes, describe below: _____							
Debriefing occurred after entry? Yes <input type="checkbox"/> No <input type="checkbox"/>									
Entry Supervisor Signature: _____									

## **PERSONAL PROTECTIVE EQUIPMENT RULES**

1. All employees outside of a cabbed vehicle or covered piece of equipment must wear a hard hat. Never use metal hard hats.
2. Wear proper eye and face protection (goggles, safety glasses, etc.) when necessary.
3. Hearing protection shall be used where loud noise is present.
4. Always wear safety vest, hard hats, and boots when directing traffic.
5. All employees must wear required hand protection, gloves, etc., when an employee is exposed to hazards such as radiation, alkalies, acids, adhesives and temperatures extreme other than those caused by weather conditions.
6. Proper clothing will be worn, including hard toe work boots when required, shirts and pants (no cutoffs).

## **WELDING, CUTTING AND HOT WORK**

1. Hot work in any work area creates a fire hazard, especially in confined or enclosed spaces. Good ventilation must be provided to reduce the level of toxic fumes that are released during welding and cutting.
2. Only trained and authorized personnel shall perform welding and cutting operations.
3. Respirators of the proper type must be used in location where ventilation is inadequate and when welding or cutting galvanized metals.
4. Cylinders: Gas cylinders must be capped when transported and when not in use. Cylinders shall be moved on an approved cart or by tilting and rolling them on their bottom edges. Regulators shall be removed and valve caps put in place before cylinders are moved. Cylinders must be secured in an upright position to keep them from being knocked over. Gas cylinders must be in an upright position when in use. A chain, bracket, or other restraining device shall be used at all times to prevent cylinders from falling. Cylinders shall never be used

as rollers or supports. Before connecting a regulator to a cylinder, crack the valve momentarily (away from you, other workers and sources of ignition) to clear the valve of dust and dirt.

5. Welding hoses, regulators and cables must be inspected before use, and damaged equipment must not be used.
6. Hoses and cables must be arranged so that they do not create a tripping hazard and are not damaged by equipment.
7. The frame of arc welding equipment must be grounded.
8. When electrode holders are left unattended, the electrodes shall be removed and the holders protected from contact with employees. Hot electrodes shall not be dipped in water.
9. Whenever welding or cutting, a fire extinguisher of the proper type must be immediately available in the work area.
10. Make sure that each fuel gas cylinder lead is equipped with a flash arrestor to prevent flashback.
11. Perform welding in a well-ventilated area. Use mechanical ventilation in confined or enclosed spaces. Provide both general ventilation to bring in clean air and local exhaust ventilation close to the work to remove hazardous fumes.
12. Wear the proper personal protective equipment: Wear welder's leather coverings or long-sleeve, fire-retardant coveralls without cuffs. Wear high-top leather shoes or boots and keep the cuffs of pants over the top of footwear to prevent sparks from falling into shoes. Wear safety glasses and a welder's helmet with properly shaded lenses to protect eyes from harmful ultraviolet rays.

## **FIRE PREVENTION**

1. Flammable liquids, such as gasoline, must be kept in approved, clearly labeled containers and stored in a separate area away from sources of ignition. Store in the shade whenever possible.
2. The use of gasoline is prohibited for cleaning equipment and tools

and for starting fires. Do not use gasoline to clean your hands.

3. Shut off engines when refueling and do not refuel hot engines if gas could spill on hot engine components such as mufflers.

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4. Do not smoke in any area where flammables or explosives are handled or stored.
5. Oxygen (oxidizers), when stored, must be separated from flammables by 20 feet or by a 5 foot noncombustible wall with at least one-half hour rating. This includes separating oxygen and fuel gases at night when not in use.
6. Know how to use the fire extinguishers. In the event of a small fire, use the correct class of fire extinguisher for the burning material:
  - CLASS A – wood, paper, cloth
  - CLASS B – gas, oil, paints
  - CLASS C – electrical
  - CLASS D – metals

**If the fire is large, evacuate the work area and call the fire department.**

7. Tampering with fire extinguishers or fire hoses is prohibited.
8. Make sure that each fuel gas cylinder regulator or hose is equipped with an anti-flashback device. Regulators must be removed when transporting cylinders and when equipment is not in use.

## **HAND AND POWER TOOLS**

1. Inspect tools daily before use to insure they are in proper working order. Damaged or defective tools must be taken out of service immediately and tagged “Do Not Use.”
2. Hand tools should be used for their intended purposes only. The design capacity of hand tools should not be exceeded by the use of unauthorized attachments.
3. Machine guards must not be removed, blocked or otherwise made

inoperative. Proper adjustment and maintenance of guards is essential.

4. Electrically powered tools and equipment shall be double insulated or of the 3-wire grounded type. Employees using electrical power tools and extension cords must be protected by an approved ground fault circuit interrupter or the tools and the cords must be inspected and electrical grounds tested in accordance with the requirements of the Assured Equipment Grounding Conductor Program.
5. Hand-held pneumatic tools must have an approved safety check valve installed at the manifold outlet of each supply line. Before removing any pneumatic tools or disconnecting hoses from the compressor, determine that the air pressure has been turned off and bled from the system.
6. All pneumatic hose connections must be fastened securely by retaining clips or approved quick disconnect couplings.
7. Always disconnect power tools from the energy source before making adjustments or changing attachments.
8. Electrical shut down switches for all power equipment must be located within the immediate reach of the operator.
9. Power tools should be hoisted or lowered by hand lines, never by their electrical cords or air hoses.
10. Power cords and hoses must be placed so they do not create tripping hazards or become subject to damage from equipment and materials.
11. Do not use electric tools while standing in water.
12. Abrasive wheels should be ping tested and checked for cracks, chips or other defects before mounting. Check the speed rating for the wheel to be sure its rated speed RPMs is not exceeded.
13. Power-actuated tools must be operated only by trained and licensed personnel wearing protective equipment, including but not limited to eye and ear protection.

14. When placing sand, gravel or concrete with pneumatic hoses, employees must wear protective head and face equipment.
15. When a mechanical or hydraulic jack is used, determine that the jack is capable of lifting the required weight and is firmly positioned to prevent the load from slipping off the jack's cap.
16. When it is necessary to work on electrically driven machinery, the disconnect switch for controlling the machine shall be in the opened or off position and locked in place by the worker or workers performing the job.

### **HEAVY EQUIPMENT RULES**

1. Every employee, not just the equipment operator, must be fully aware of all safety aspects of heavy construction equipment.
2. Be constantly alert when working around heavy equipment. The operator cannot always see other personnel around his equipment. Stay out from under suspended loads, away from moving equipment, and counterweights.
3. Only designated individuals shall be permitted to operate or service heavy equipment.
4. Equipment and vehicles essential in accomplishing job duties are expensive and may be difficult to replace. When using, employees are expected to exercise care, perform required maintenance and follow all operating instructions, safety standards and guidelines.
5. Perform frequent and periodic inspections as required, and complete a weekly equipment repair request form so hours and other important information may be recorded for the maintenance of the machine.
6. Immediately notify your Supervisor if any equipment, machines, tools or vehicles appear to be damaged, defective or in need of repair. If a Supervisor is not available, contact the Shop immediately and discontinue operation if necessary to avoid further damage.
7. The equipment operator must wear the seat belt when required.

8. No employee is permitted to ride on any part of the equipment.
9. Do not leave trucks and equipment idling — turn them off.
10. It is the responsibility of all employees to make certain that back-up alarms on obstructed rear view heavy equipment be in operable condition. Use a flagger to move equipment when back up alarms are inoperable.
11. Maintain at least a 10' minimum clearance from energized lines; use a spotter in difficult areas.

### **SAFE CRANE OPERATION**

1. Follow heavy equipment rules listed above.
2. Before operations begin, be sure to level crane and make sure outriggers give reliable stability and are used on proper support.
3. Inspect rigging, hooks and slings daily.
4. Avoid overturning, collapse of the boom and cable failure by recognizing manufacturer's postings of safe loads for boom angles found in the cab. Never exceed these postings.
5. Do not place water dispenser on a crane as a central location for workers.
6. Before leaving the crane for any reason, the operator should set the brakes, block the wheels, lock the boom and place the levers and controls in a neutral position.
7. Crane engines should not be refueled while running and a suitable fire extinguisher must be available.
8. Barricade the swing radius of the rotating superstructure of the crane.
9. Knowledge of hand signals assures safe communication with operator.



## **FORKLIFT AND INDUSTRIAL TRUCKS**

1. Employees who are authorized to operate powered industrial trucks must receive training prior to engaging in their duties.

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2. Follow heavy equipment rules listed above.
3. Persons are not allowed to stand or pass under elevated forks of a truck.
4. If powered industrial trucks are used to elevate persons, an appropriate man lift platform (cage with standard rails and toe-boards) that is attached to the mast must be used.
5. A safe distance must be maintained from the edge of ramps or platforms while on any elevated dock, platform, or freight car. Maintain sufficient headroom under overhead installations such as: lights, pipes, sprinkler systems, etc.
6. An overhead guard must be used as protection against falling objects and operators must wear hard hats in areas where overhead hazards exist.
7. Lift capacity must be marked on all powered industrial trucks. Operators must assure the load does not exceed rated weight limits.
8. All powered industrial trucks (with the exception of pallet jacks) must be equipped with a multi-purpose dry chemical fire extinguisher.
9. Loads should be safely arranged, stable, and centered — always use caution when handling loads.
10. Fuel tanks may not be filled while the engine is running. Avoid spillage.
11. Any powered-operated industrial truck not in safe operating condition must be removed from service. Authorized personnel must make all repairs.

## **FALL PROTECTION & GUARDING**

1. All manholes which present a fall hazard should be covered and identified as a hole.
2. Guardrails around open shafts and bore pits deeper than 6' should be 42" plus or minus 3" high.
3. The intermediate rail should be positioned halfway between the floor and top rail.
4. The threshold for fall protection use is 6'. Fall protection may be accomplished by guarding, personal fall arrest systems or safety nets. Ask your qualified person.
5. Perimeter cables constructed of 3/8" cable with danger signs midway between the cable supports may be used as a fall protection device.
6. Perimeter cables should be 42" above floor with a maximum of 6".

## **TRAFFIC, SIGNALS, SIGNS AND BARRICADES**

1. All traffic control devices are to be placed under the direction of the trained employee.
2. While flagging or directing vehicular traffic, a reflectorized, fluorescent orange warning vest and hard hat shall be worn at all times. Flag people are to be courteous at all times.
3. A six foot staff two-sided paddle sign with "STOP" on one side and "SLOW" on the other shall be used to control traffic.
4. Traffic control devices shall be installed and maintained as prescribed by Part 6 of the *Michigan Manual of Uniform Traffic Control Devices*.
5. When working in or adjacent to vehicular traffic, always face the flow of traffic or use a spotter.
6. Replace traffic control devices that have been damaged or downed signs as soon as possible.

7. Cover construction traffic control when work is not in progress if possible.
  8. Consult the qualified person with traffic regulation questions.
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## **SCAFFOLD SAFETY**

1. Employees must receive training prior to using a scaffold.
2. A trained, competent, employee must inspect a scaffold before each day and after anything happens that could affect the structure.
3. If a scaffold is more than 2 feet above or below a level, there must be a way to get on or off — such as a ladder, ramp, or personnel hoist.
4. Put a standing scaffold on a firm foundation (with base plates attached to feet) — for instance, with one piece of wood under each pair of legs (across the shortest distance), extending at least 1 foot past each leg.
5. Uprights must be vertical and braced to prevent swaying; platforms must be level.
6. A scaffold that is more than 4 times higher than its base is wide must be tied to supports.
7. Most scaffold platforms and walkways must be 18" wide or more. If a work area is less than 18" wide, guardrails and/or personal fall-arrest must be used.
8. Ten-foot planks must extend at least 6" past the end supports, but not more than 12"; no more than 1" between planks or between planks and uprights.
9. Wood planks must be unpainted, so any cracks will show.
10. For supported scaffolds, check at least these points: completely planked platforms, proper access, complete guardrails and proper ties to building (where required..
11. Keep scaffolds 10' or more from power lines.

12. Fall protection is necessary if a scaffold is more than 10 feet above a level.
13. On most scaffolds, guard rails must be on all open sides and ends. On supported scaffolds and some other scaffolds, guardrails or personal fall protection is enough. On most suspension scaffolds, both are needed. Use a harness, not a body belt, for personal fall protection.
14. Scaffold walkways must have no more than a 9.5" gap between planks and a guardrail.
15. Don't let junk collect on the scaffold; you can trip and fall.
16. There must be a 3 1/2" high toe board to prevent things falling off a scaffold. If things on the scaffold are taller than 3 1/2" — above the toeboard — other systems, like debris nets, can be used to catch falling tools or materials. If things can fall off a scaffold, people must be prevented from walking under or near the scaffold.

## **RIGGING MATERIAL HANDLING**

1. Inspect rigging equipment for material handling before use each day and as necessary during its use to ensure that it is safe. Remove defective rigging equipment from service.
2. Do not load rigging equipment in excess of its recommended safe working load.
3. Mark special custom-design grabs, hooks, clamps, or other lifting accessories for such units as modular panels, prefabricated structures, and similar materials to indicate safe working loads, and proof-test them before use to 125 percent of their rated load.
4. Each day before use, the sling and all fastenings and attachments must be inspected for damage or defects by a competent person designated by the employer. Perform additional inspections during sling use where service conditions warrant. Immediately remove damaged or defective slings from service.

5. Make sure that welded alloy steel chain slings have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer.
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6. Check that hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, have a rated capacity at least equal to that of the chain.
  7. Do not use job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments.
  8. Never stand, walk, or work under suspended loads.
  9. Have overhead power lines de-energized and grounded or maintain at least a 10' clearance.
  10. Pipe and other materials shall be properly stacked and remain banded or otherwise secured until needed. When removing banding or chains, never pull them directly toward you. Always check the blocking before cutting the bands or loosening the chains.
  11. All materials and equipment must be stored at least 2' from the edge of the trench.

## **PORTABLE LADDERS**

1. Only use type 1A or type 1 ladders for construction purposes.
2. Always extend ladders 3' above the landing surface to which the ladder is used to gain access.
3. Never use a step ladder as a straight ladder by leaning it against a wall or support.
4. All ladders used in conjunction with platforms must be secured at top and bottom.

## **PERSONAL FALL ARREST SYSTEMS**

1. Personal fall arrest systems must be worn when workers are exposed to falls 6' or greater.

2. The attachment point of harness shall be located in the center of the wearer's back, near the shoulder level.
3. Never use body harnesses as material handling devices.
4. Do not re-use fall protection devices that have been subjected to impact loading until they have been inspected and considered suitable for use by a qualified employee. Tag this equipment out of service until such an inspection can be performed.
5. Visually inspect all harnesses before use.
6. Do not attach fall protection devices to guardrail system.

## **LOCKOUT/TAGOUT**

1. Lockout devices, locks and tags should be installed to isolate valves, switches, circuit breakers and other devices as necessary to ensure that those devices cannot be adjusted, removed, energized, moved or otherwise activated during the time that workers are exposed to potential hazards associated with the equipment being serviced or situations where workers could be exposed to an energy source.
2. If there is no provision for locking out a piece of equipment, a tag must be used without a lock; however, other safety measures should be taken to ensure the safety of the worker(s), such as removing the valve handle or installing a mechanical block.
3. After deactivating, locking out or blocking the energy source, attempt to operate the equipment in the normal way to ensure that it is in fact deactivated.
4. If more than one employee is involved in repairing or maintaining the circuit, piping system, machinery or equipment, each worker shall place a lock and tag on the lockout device.
5. All worker tags attached to lockout devices must be properly signed and dated.
6. When the work is completed, each worker is responsible for removing his/her individual lock and tag. Do not leave your lock and tag on

equipment when the work is completed and you are clear of the potential hazard. Never remove another person's lock and tag.

7. Only when the repair or maintenance operations are complete and all locks and tags removed should the equipment be restored to full operating condition.
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## **EQUIPMENT GROUNDING CONDUCTOR PROGRAM**

This program is designed to inform employees of the inspection and testing of all electrical cords, plugs and tools to prevent injuries from occurring. The foreman, in conjunction with the shop, is responsible for implementing this program.

1. All extension cords, plugs, electrical tools and equipment shall be visually inspected before each day's use for external defects or damage and for possible internal damage. Damaged or defective cords, plugs, electrical tools or equipment shall not be used and sent to the shop for repair.
2. For the generators equipped with ground fault interrupters, please adhere to the following:
  - a. Check all ground fault interrupters every time the generator is started.
  - b. If the reset button pops out, the ground fault interrupter is good.
  - c. If the reset button does not pop out, the ground fault interrupter is bad.
  - d. A bad ground fault interrupter will cause shocking to occur.
  - e. Call the shop to repair or replace a bad ground fault interrupter.
  - f. Do not wire the throttle. It will cause the ground fault interrupter to go bad.
  - g. The frame of all welders must be grounded.
3. The following tests shall be performed:
  - a. All equipment ground conductors shall be tested for electrical continuity.
  - b. Each receptacle or plug shall be tested for correct attachment of the

equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

4. All required tests shall be performed:
  - a. before first use;
  - b. before equipment is returned to service following any repairs;
  - c. before equipment is used after any incident which can be reasonably suspected to have caused damage;
  - d. and at intervals not exceeding three months, except extension cords and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding six months.

## **CONCRETE CONSTRUCTION**

1. Always wear proper personal protective equipment (ppe) when performing concrete construction, including eye protection and rubber boots
2. Fall protection should be utilized when placing concrete in areas more than 6' above adjacent areas. This can be accomplished with ppe, proper barricades or railings.
3. Never work above vertically protruding reinforcing steel unless the steel has been capped to eliminate the hazard.
4. Be aware of energized lines and maintain a clear 10' of clearance with equipment and tools.
5. Do not remove forms until concrete has cured to a point that it can support its own weight and currently intended load.
6. Stripped forms should be stored in an area away from general foot traffic. Be sure to pull or cut all protruding nails, wires or other accessories that may cause injury.
7. Be sure all heavy equipment including concrete paving machines have functioning back-up alarms. If supplier's equipment has nonfunctioning back-up alarms on site, designate a spotter until equipment has left the area.



8. If concrete construction is performed in areas that impact motor traffic, be sure proper signage is used. Refer to the MUTCD or the MITA Traffic Control Handbook. MDOT jobs may already have a required traffic set-up. If so, consult with your supervisor for required signage.
9. When using portable mixer, keep hands out of all moving areas when the unit is running. Keep the engine shroud closed when the motor is engaged.
10. When using a bull float, be aware of traffic and other dangerous contacts that may be present.

## **RESPIRATORY PROTECTION**

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazard substance does not exceed the limits set by MIOSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard. You should do the following:

1. Follow all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certification should appear on the respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect you against. For example, a respirator designed to filter dust particles will not protect you

against gasses, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

## **HAZWOPER**

### **(Hazardous Waste Operations and Emergency Response) Plan**

All employees will be properly trained prior to performing hazardous waste or emergency response operations. Our training program consists of formal classroom instruction and hands on activities, and exceeds the minimal requirements specified under the HAZWOPER detailed under OSHA 29 CFR 1910.120. Upon completion of training, certificates documenting training are provided to all participants.

## **LEAD AWARENESS**

Lead is a common hazard in construction. Any worker who has the potential for exposure to lead shall be protected from the harmful effects that may occur. Paint on metal bridges and buildings may contain lead. Workers become exposed during renovation, demolition and repainting.

1. Effects from Exposure:
  - a. Lead is hazardous when inhaled and/or ingested. Lead can cause headache, poor appetite, dizziness, irritability, anxiety, constipation, metallic taste in mouth, tiredness, weakness, nausea, muscle & joint pain, pallor (pale skin), reproductive problems, hyper activity, and more.
2. Personal Hygiene:
  - a. Wash hands/face before eating, drinking or smoking.
  - b. Never eat, drink or smoke in contaminated areas.
  - c. Remove contaminated clothes before eating.
  - d. Change into work clothes at worksite. Store street clothes separate from work clothes.
  - e) Wash or shower prior to changing back into street clothes to prevent exposing friends or family members.

f) Personal vehicles should be parked away from contaminated area.

3. Health:

a. Blood test for lead levels will be required on an annual basis for all employees at risk of being exposed to lead. Blood lead levels of 1-49 are within acceptable range, levels of 40 or above require a medical exam and consultation, and levels of 50 or above call for removal from the job and any potential lead exposure.

4. Personal Protective Equipment:

a. Half mask respirators and supplied air respirators should use NEPA filters or equivalent.

b. Proper ventilation or controls should be in place to limit exposure outside work area.

c. Air monitor for presence of airborne lead and other hazardous agents.

## **ASBESTOS AWARENESS, INSPECTOR & SUPERVISORY TRAINING**

Asbestos is a combination of minerals (chrysotile, amosite, and crocidolite, and the asbestos forms of tremolite, actinolite and anthophyllite obtained from mines). Its ability to separate into thin, strong particles makes it highly suitable for use as a noncombustible, nonconducting, and chemically resistant material. In its natural state, asbestos is a fluffy, fibrous material.

Asbestos was first used in the 1880s as insulation for steam pipes. During the 20th century, the construction industry used asbestos for cement products, roofing, plastics, insulation and floor tiling. Asbestos is also used for fireproof clothing, fire-resistant curtains, automotive undercoating, brake and clutch linings and nose cones of space vehicles.

Asbestos cannot be recognized by ordinary observation; a sample must be tested in a laboratory utilizing polarized light microscopy (PLM) or an electron microscope.

Any employee whose work activities includes contact with asbestos containing material or presumed asbestos containing material will receive asbestos awareness, inspector and/or supervisory training, depending on

their work activities. This training is in accordance with the requirements of Michigan Public Act 440 of 1988, as amended.

## **BENZENE AWARENESS TRAINING**

Benzene, also known as benzol, is a clear, colorless liquid with a distinctive sweet odor. Benzene evaporates into air very quickly and dissolves slightly in water. Benzene is highly flammable. Most people can begin to smell benzene in air at 1.5-4.7 parts of benzene per million parts of air (ppm) and smell benzene in water at 2 ppm. Most people can begin to taste benzene in water at 0.5-4.5 ppm. One part per million is approximately equal to one drop in 40 gallons. Benzene is found in air, water, and soil, and comes from both industrial and natural sources.

***Industrial Sources and Uses:*** Benzene was first discovered and isolated from coal tar in the 1800s. Today, benzene is made mostly from petroleum. Because of its wide use, benzene ranks in the top 20 in production volume for chemicals produced in the United States. Various industries use benzene to make other chemicals, such as styrene (for styrofoam and other plastics), cumene (for various resins), and cyclohexane (for nylon and synthetic fibers). Benzene is also used in the manufacturing of some types of rubbers, lubricants, dyes, detergents, drugs and pesticides.

***Natural Sources:*** Natural sources of benzene, which include gas emissions from volcanoes and forest fires, also contribute to the presence of benzene in the environment. Benzene is also present in crude oil and gasoline and cigarette smoke.

Everyone is exposed to a small amount of benzene every day. You are exposed to benzene in the outdoor environmental, in the workplace, and in the home.

MIOSHA regulates levels of benzene in the workplace. The maximum allowable amount of benzene in workroom air during an 8-hour workday, 40-hour workweek is 1 ppm. Because benzene can cause cancer and many other health problems, MIOSHA recommends that all workers wear special breathing equipment and protective clothing and equipment (eye and face protection) when they are likely to be exposed to benzene at levels exceeding the recommended exposure limit.

Refer to MIOSHA Standards for more information on benzene regulations. Visit [www.michigan.gov/MIOSHA](http://www.michigan.gov/MIOSHA) standards or see your Safety Officer for information.

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## **EMERGENCY RESPONSE PROGRAM**

1. As part of its safety program, it is the policy of this company to make certain that all employees have been instructed as to proper procedures in case of an injury or accident.
2. This company designates the 911 system as its first response in the event of a medical emergency and/or rescue operation.
3. A list of emergency phone numbers will be posted at the job site when practical. If no suitable or convenient location exists, the list will be kept by the project foreman.
4. All injuries and/or accidents shall be reported to the job foreman immediately.
5. This company will provide a person at each job site who is trained in CPR and first aid procedures as required by any applicable Safety & Health Standards.

## **HAZARD COMMUNICATION AND “RIGHT TO KNOW PROGRAM”**

The following hazard communication program has been established for this company. This program will be available for review by all employees.

1. Hazard Determination
  - a. The Safety Officer will rely on safety data sheets from suppliers to meet determination requirements.
2. Labeling
  - a. Each foreman will be responsible for seeing that all containers coming in are properly labeled. All labels shall be checked for:
    - Identity
    - Hazard
    - Name and address of responsible party

- b. Each foreman shall be responsible for seeing that all portable containers used in their work are labeled with identity and hazard warnings.
3. Safety Data Sheets (SDSs)
    - a. The Safety Officer will be responsible for compiling the master SDS file. It will be kept \_\_\_\_\_.
    - b. Copies of SDS for all hazardous chemicals to which employees may be exposed will be made available to all employees upon request.
    - c. Each foreman will be provided with the required MIOSHA Right-To-Know posters and postings notifying employees of new or revised SDSs.
4. Employee Information and Training
    - a. The Safety Officer shall coordinate and maintain records of training conducted for this company.
    - b. The employee will be informed that the employer is prohibited from discharging, or discriminating against, an employee who exercises the rights regarding information about hazardous chemicals in the workplace.
    - c. Attendance will be taken at training sessions. The records will be kept by the Safety Officer.
    - d. Before any new hazardous chemical is introduced into the workplace, each employee will be given information in the same manner as during the safety briefing.
5. Hazardous Non-Routine Tasks
    - a. On occasion, employees may be asked to do work in potentially hazardous areas (e. g. confined spaces). Prior to starting work in such areas, each employee will be given information about the hazards involved in these areas. This information will include:
      - specific chemical hazards;
      - protection/safety measures the employee can take to lessen risks;
      - and measures the company has taken to lessen the hazards

including ventilation, respirators, the presence of another employee and emergency procedures.

- b. It is the policy of this company that no employee will begin work in a confined space, or any non-routine task, without first receiving a safety briefing.
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6. Informing Contractors

- a. It is the responsibility of the Safety Officer to provide any subcontractors with employees on the job site exposed to our chemicals with the following information:

- Hazardous chemicals with which they may come in contact.
- Measures the employees may take to lessen the risks.
- Where to get SDSs for all hazardous chemicals.

- b. It is the responsibility of the Safety Officer to obtain chemical information from contractors when they will expose our employees to hazardous chemicals which they may bring into our workplace.

7. List of Hazardous Chemicals

- a. The list of the chemicals used by this company can be obtained by reviewing SDSs.

**RESPONSIBILITIES OF FOREMAN/QUALIFIED EMPLOYEE**

1. Assure that the safety program is implemented.
2. Inspect the job site to assure that no unsafe conditions exist
3. Make sure that necessary protective equipment is on hand and used when required.
4. Instruct all employees in safe procedures and job safety requirements. Follow up and insist on compliance.
5. Discuss safety with employees on every operation. Have periodic safety meetings.
6. See that all injuries are cared for properly and reported promptly.

7. Investigate all accidents. File a complete accident report with the Safety Officer and correct the causes immediately.
8. Be familiar with the rules pertaining to safety.
9. Report any hazardous conditions to the Safety Officer even if the condition has been corrected.



# Employee Sign-off Sheet

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\_\_\_\_\_, an employee of this company will immediately read this Safety Handbook in its entirety. I understand that if I have any questions concerning the handbook or safety in general, I may contact the company Safety Officer for clarification. Further, I understand that safety is everyone's responsibility, including my own.

# MacKenzie Companies

## Written Silica Exposure Control Program

### 1.0 Applicability and Scope

#### 1.1 Applicability

This Written Exposure Control Plan (Plan) applies to personnel who are potentially exposed to airborne concentrations of respirable crystalline silica (silica) because of their work activities or proximity to the work locations where airborne silica is being emitted. This Plan also applies to superintendents, foremen, or safety personnel who may be responsible for overseeing a subcontractor's operations that have the potential to expose personnel to airborne concentrations of silica at or above regulatory and industry action levels and exposure limits.

#### 1.2 Scope

This Plan describes the hazards associated with projects involving potential exposure to airborne concentrations of silica and the issues to be addressed during these projects. These projects include, but are not limited to:

- Handheld power saws used to cut concrete, asphalt, concrete masonry block, sheet rock, gypsum fiber roof board, or any other product containing quartz.
- Walk-behind saws used to cut concrete or asphalt.
- Rig-mounted or free standing core saws or drills (including impact and rotary hammer drills) used to penetrate concrete, concrete masonry block, sheet rock, gypsum fiber roof board, or any other structural component or product containing quartz.
- Jackhammers and handheld powered chipping tools used to demolish or modify concrete, concrete masonry block, or any other structural component or product containing quartz.
- Vehicle mounted hammers or chipping tools used to demolish concrete, concrete masonry block, or any other structural component or product containing quartz. (i.e. hydraulic breakers)
- Handheld grinders or cut-off wheels used for mortar removal or cutting/grinding of concrete, concrete masonry block, sheet rock, gypsum fiber roof board, or any other structural component or product containing quartz.
- Walk-behind milling machines or bead blasters used for surfacing activities on concrete, concrete masonry block, asphalt, or any other product containing quartz.
- Hand or power tool sanding of painted surfaces. Current latex paint products contain quartz and the painted substrate (sheet rock, concrete masonry block, concrete) contains quartz.
- Drivable asphalt milling machines used to mill asphalt roadways or walkways.
- Pug mills or crushing equipment used to size or mix products containing quartz (i.e. CTB plant).
- All housekeeping operations associated with the activities described above.

Employees who work in proximity to silica-related operations must be aware of safe work practices and take all necessary precautions associated with avoiding and minimizing airborne silica exposure.

## **2.0 Regulatory Review**

Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1153: Respirable Crystalline Silica (Construction Industry) and 29 CFR 1910.1053: Respirable Crystalline Silica (General Industry), contain regulatory requirements specific to respirable crystalline silica. This Written Exposure Control Plan is developed in accordance with the requirements in 29 CFR 1926.1153(g).

## **3.0 Project Planning**

### **3.1 Training Requirements**

Employees who anticipate working on projects where they could be exposed to airborne silica will be provided training in silica hazards in accordance with the program established to comply with the hazard communication standard (29 CFR 1910.1200). Each employee will have access to labels on containers of crystalline silica and safety data sheets, and be provided information on the health hazards of silica including cancer, lung effects, immune system effects, and kidney effects. In addition, employees will be provided training and information regarding specific activities identified in this Plan that could result in airborne silica exposure, and the specific engineering controls, work practices and respiratory protection requirements to mitigate the potential airborne silica exposures. This training will provide a discussion of silica hazards, initial exposure determination either by complying with 29 CFR 1926.1153 Table 1 requirements or air monitoring, specific engineering and work practice control measures, personal protective equipment (PPE), and medical surveillance requirements. The training will also identify the competent person for silica exposure identification and determination of control requirements. All employees will be provided with access to a copy of 29 CFR 1910.1153 and be trained on the contents of 29 CFR 1926.1153.

### **3.2 Medical Surveillance Requirements**

Medical surveillance is required for employees wearing a respirator 30 or more days per year. Initial medical surveillance consists of medical and work history with emphasis on: past, present, and anticipated exposure to silica, dust and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history; a physical examination with emphasis on the respiratory system; chest X-ray (a single posterior-anterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems), interpreted and classified according to the International Labor Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader; a pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH approved spirometry course; testing for latent tuberculosis infection; and any other tests deemed appropriate by the Occupational Medicine Provider. Subcontractors are responsible for implementing a medical surveillance program for their employees.

### **3.3 Competent Person Requirements**

MacKenzie shall identify a competent person to inspect and oversee all activities with potential airborne silica exposure. Subcontractors working on projects within the scope of this program shall appoint a competent person capable of executing the duties described herein. The competent person must have training in the inspection of work areas and equipment and in the determination of safe working conditions. This person shall have a working knowledge of the 1926.1153 standards, shall be capable of identifying airborne silica hazards, shall determine the need for initial and additional exposure monitoring, shall recommend and implement engineering and work practice controls, shall establish levels of PPE, and shall have the authority to take action to eliminate hazards and correct incidences of noncompliance.

### 3.4 Planning Activities

Projects where anticipated activities involve concrete cutting, grinding, sandblasting, drilling, coring, or other abrasive operations are treated as potential sources for airborne silica exposure. Additionally, existing structures and materials such as sheetrock, any painted surfaces with low volatile organic compounds, tile, brick, or some insulation products may contain silica. Likewise, new material installation may involve silica-containing mortar, paints, or insulation. Where process knowledge indicates the presence of silica, MacKenzie will either implement all controls required by 1926.1153 Table 1- Exposure Control Methods for Selected Construction Operations or conduct an initial determination in accordance with 29 CFR 1926.1153(d)(2).

## 4.0 Project Execution

### 4.1 Safe Work Practices

The requirements of this section are to be followed by employees who may be exposed to airborne concentrations of silica at or above the regulatory limits.

#### 4.1.1 Exposure Assessment

- An exposure assessment is required when employees may be exposed to airborne silica at or above the action level in order to determine the extent to which employees are exposed and the appropriate exposure controls required.
- An initial determination of exposure shall be made at the beginning of operations. The determination shall consist of the collection of personal air samples representative of a full shift including at least one sample for each job classification in each work area, either for each shift, or for the shift with the highest exposure level.
- During the initial determination, until such time that actual airborne concentrations are determined, personnel shall be protected by respiratory protection based on task-specific anticipated airborne concentrations of silica as illustrated in Table 2 below:
- During the initial determination, and in addition to the levels of respiratory protection required, personnel shall be provided with protective clothing and equipment, hygiene facilities, and training.
- Whenever a change in equipment, process, controls, or personnel occurs, or a new task has been initiated, an additional exposure assessment is required.
- When an assessment determines that exposure has occurred above the action level but below the PEL, additional monitoring shall be required at least every 6 months. Additional monitoring shall continue until such time that the monitoring results fall below the action level on two separate occasions at least 7 days apart.
- When monitoring yields results above the PEL, then quarterly monitoring is required. In addition, the quarterly monitoring may be suspended when additional monitoring results fall below the action level on two separate occasions at least 7 days apart.
- When the competent person can clearly demonstrate, in the absence of air monitoring data, that a work activity will not create airborne silica concentrations in excess of the action level, then air monitoring may be unwarranted. When a negative initial determination is reached without air monitoring, the competent person must develop a written explanation as to why exposures are not expected to exceed the action level.

#### 4.1.2 Communication of Hazards

- Each employee shall be provided training and demonstrate knowledge and understanding of the following:
  - Health hazards associated with exposure to respirable crystalline silica.
  - Specific tasks that could result in exposure to respirable crystalline silica.
  - Specific measures that are required to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and required use of respiratory protection.
  - The contents of the 29 CFR 1926.1153.
  - Purpose and description of the medical surveillance program.
- A written compliance program shall be made available to all affected employees.
- In addition, notification to owners, contractors, and other personnel working in the area shall be made.

#### 4.1.3 Control Methods

- Engineering and work practice controls, including administrative controls, shall be implemented to reduce and maintain employee exposure to silica at or below the PEL, to the extent that such controls are feasible.
- Where all feasible engineering and work practice controls that can be instituted are not sufficient to reduce employee exposure to or below the PEL, such controls shall be used, nonetheless, to reduce employee exposure to the lowest feasible level (and in conjunction with respiratory protection).
- Respiratory protection shall be selected based on guidance in 1926.1153 Table 1 or based on a Certified Industrial Hygienist's or competent person's assessment of the potential airborne exposure that may be created by the means and methods of work (high energy operations with high airborne dust generation or low energy operations with low dust generation).
- When using mechanical ventilation to control exposure, regularly evaluate the system's ability to effectively control exposure.
- If administrative controls are used to limit exposure, establish and implement a job rotation schedule that includes employee identification as well as the duration and exposure levels at each job or work station where each affected employee is located.
- A written compliance program shall be established and implemented prior to the start of operations within the scope of this Written Compliance Plan. The written program shall outline the plans for maintaining employee exposure below the PEL.
- Maintain all surfaces as free as possible from accumulations of silica. Select methods for cleaning surfaces and floors that minimize the likelihood of silica becoming airborne (such as using a HEPA vacuum).
- If vacuuming is the method selected, specialized vacuums with HEPA filtration are required. Methods to use and empty vacuums in a manner that minimizes the reentry of silica into the workplace shall be described and used. Use of household vacuums with HEPA filters are not allowed at any time for the collection of dust or debris that contains silica.
- Never use compressed air to remove silica from any surface unless it is used in conjunction with a ventilation system designed to capture the airborne dust created while using the compressed air.
- Employees shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in any areas

where exposure to silica is above the PEL (in other words, regulated areas).

- Do not allow employees to leave the workplace wearing any protective clothing or equipment that is required to be worn during their work shift without HEPA vacuum removal of dust.
- Where feasible, install shower facilities and require employees who work in regulated areas to shower at the end of their work shift. Also provide an adequate supply of cleaning agents and clean towels.
- Provide hand washing facilities for use by employees working in regulated areas. Furthermore, require employees to wash their hands and face at the end of the work shift and prior to eating or entering eating facilities, drinking, smoking, or applying cosmetics.
- Eating facilities or areas shall be provided for employees working in regulated areas. These facilities shall be maintained free of silica contamination and shall be readily accessible to those employees.

#### **4.1.4 Personal Protective Equipment (PPE)**

Respiratory protection must be used for the following conditions:

- During periods when employee exposure to airborne silica exceeds the PEL.
- For work operations where engineering and work-practice controls are not sufficient to reduce employee exposure to or below the PEL.
- During periods when an employee requests a respirator.
- During periods when respirators are required to provide interim protection while conducting initial exposure assessments.
- Powered air-purifying respirators (PAPR) shall be provided to employees who request such a respirator to use where it will provide adequate protection.



**DAVID  
CHAPMAN  
AGENCY**

*Making Insurance and Bonds Easy*

August 15, 2020

MacKenzie Companies  
4848 W Saginaw  
Grand Ledge, MI 48837

Experience Modification Rating (EMR)

To Whom It May Concern:

As insurance agents for the E T MacKenzie Company we are pleased to report their current workers compensation experience modification (EMR) for 8/15/2020 to 8/15/2021 is .66. Their EMR for the previous year 8/15/2019.20 was .68, and for 8/15/2018-19 it was .66.

These are excellent EMRs for the heavy construction industry. The history of low experience modification factors is the direct result of MacKenzie Companies' culture and attention to safety. If you have further questions about MacKenzie Companies, their EMR, or their safety record, please contact us.

Sincerely  
David Chapman Agency, Inc

Robert G Chapman

5700 W. Mount Hope Hwy. Lansing, MI 48917  
517.321.4600  
[www.DavidChapmanAgency.com](http://www.DavidChapmanAgency.com)

**RFP# 21-16 – PUBLIC WORKS ON-CALL CONSTRUCTION SERVICES**  
**ADDITIONAL SELECT RESPONSES TO SECTION III – CONTRACTOR INFORMATION**  
**AND RESPONSIBLE CONTRACTOR CRITERIA**  
**E.T. MACKENZIE COMPANY, 05.26.2021**

Response to Question #20:

Please find the attached lead employee resumes for review. As E.T. MacKenzie Company is a non-union contractor, we do not classify employees based on the “Master”, “Journeyperson” or “Apprentice” definitions. If requested, any and all additional resume information can be provided to substantiate the ability of our work force to perform the required work included in this contract.

Response to Question #21:

See response to Question #20 as detailed above. In addition, all employees participate in regular performance reviews by their immediate foreperson, superintendent, supervisor and upper management to maintain a high level of efficiency and training. Regular equipment training, operation and safety meetings are organized and attended by all field employees. Additional support and supplemental training is provided by qualified personnel on a case by case basis to insure that all employees are working in a safe and productive environment.





GRETCHEN WHITMER  
Governor

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
Lansing

PAUL C. AJEGBA  
Director

May 21, 2021

E.T. MacKenzie Company  
4248 W Saginaw Hwy  
Grand Ledge MI 48837-2225

01886  
(517) 627-8408

Dear Vendor:

In accordance with our Administrative Rules we have established your numerical rating which is based on a financial rating of \$138,428,000.00 covering the classifications in the amounts stated below. This prequalification rating is effective until April 30, 2023.

1000	B	Concrete Pavement
300	Ba	Concrete Pavement Patching And Widening
138428	Ea	Grading, Drainage Structures & Agg. Cons
138428	Fa	Bridges And Special Structures
500	Fb	Structural Steel(Erection)
3000	Fd	Pumphouses
138428	G	Building Moving And Demolition
200	H	Landscaping
30000	I	Sodding And Seeding/Turf Establishment
10000	J	Concrete C, C&G, Driveways, Sidewalks
138428	K	Sewers and Watermains
138428	N2	Clearing & Grubbing

It will be assumed that the rating is satisfactory unless the Prequalification Committee is notified in writing to the contrary within 15 days after the bidder has been advised of the rating granted. The Department, may declare a prequalified bidder ineligible to bid at any time because of developments subsequent to prequalification which, in their opinion, would affect the responsibility of the bidder or their ability to perform the contract work.

Lawrence F. Strzalka  
Manager  
Construction Contracts Section  
Contract Services Division

MURRAY D. VANWAGONER BUILDING • P.O. BOX 30050 • LANSING, MICHIGAN 48909  
[www.michigan.gov](http://www.michigan.gov) • (517) 373-2090

LH-LAN-0(01/11)

### **Financial Information**

It is our company policy that we do not provide financial information for prequalification/bid packages. Please use as a reference our 2019 Michigan Department of Transportation prequalification letter and a letter of reference from our insurance/bonding agency for our financial stability.

If you have any questions, please contact Keith Edgar, our Chief Financial Officer, at 517-627-8408.



DAVID  
**CHAPMAN**  
AGENCY

*Making Insurance and Bonds Easy*

December 3, 2020

E T MacKenzie Company  
4248 W Saginaw Hwy  
Grand Ledge, MI 48837

RE: Surety Bond Reference

To Whom It May Concern:

It has been the privilege of the David Chapman Agency, Inc and The Liberty Mutual Insurance Company to provide surety bonds on behalf of E T MacKenzie Company for many years. We have had excellent experience. All projects have been completed, and all obligations have been met. In addition to considering their experience, we regularly review and analyze their CPA prepared financial statements. In our opinion E T MacKenzie Company is properly financed, equipped, and managed for superior performance on the projects they undertake.

We evaluate each project opportunity based upon its own merits, and the opinion of MacKenzie management. However, we are prepared to provide bonds up to thirty million dollars single project with aggregate of eighty million dollars or more. As always, The Liberty Mutual Insurance Company reserves the right to perform normal underwriting at the time of any bond request, including, without limitation, prior review and approval of relevant contract documents, bond forms and project financing. We assume no liability if for any reason we do not execute such bonds.

The Liberty Mutual Insurance Company is listed on the U.S. Treasury Department's Listing of Approved Sureties and is rated A (XV) by A.M. Best's Company.

Sincerely  
David Chapman Agency, Inc

A handwritten signature in blue ink, appearing to read 'Robert G. Chapman'.

Robert G Chapman

5700 W. Mount Hope Hwy. Lansing, MI 48917  
517.321.4600  
[www.DavidChapmanAgency.com](http://www.DavidChapmanAgency.com)

**E.T. MacKenzie Company**

**Concrete Quality Control Plan**

**West Herbison Road from Old US-27 to west of  
Turner Street**

**Clinton County, Michigan**

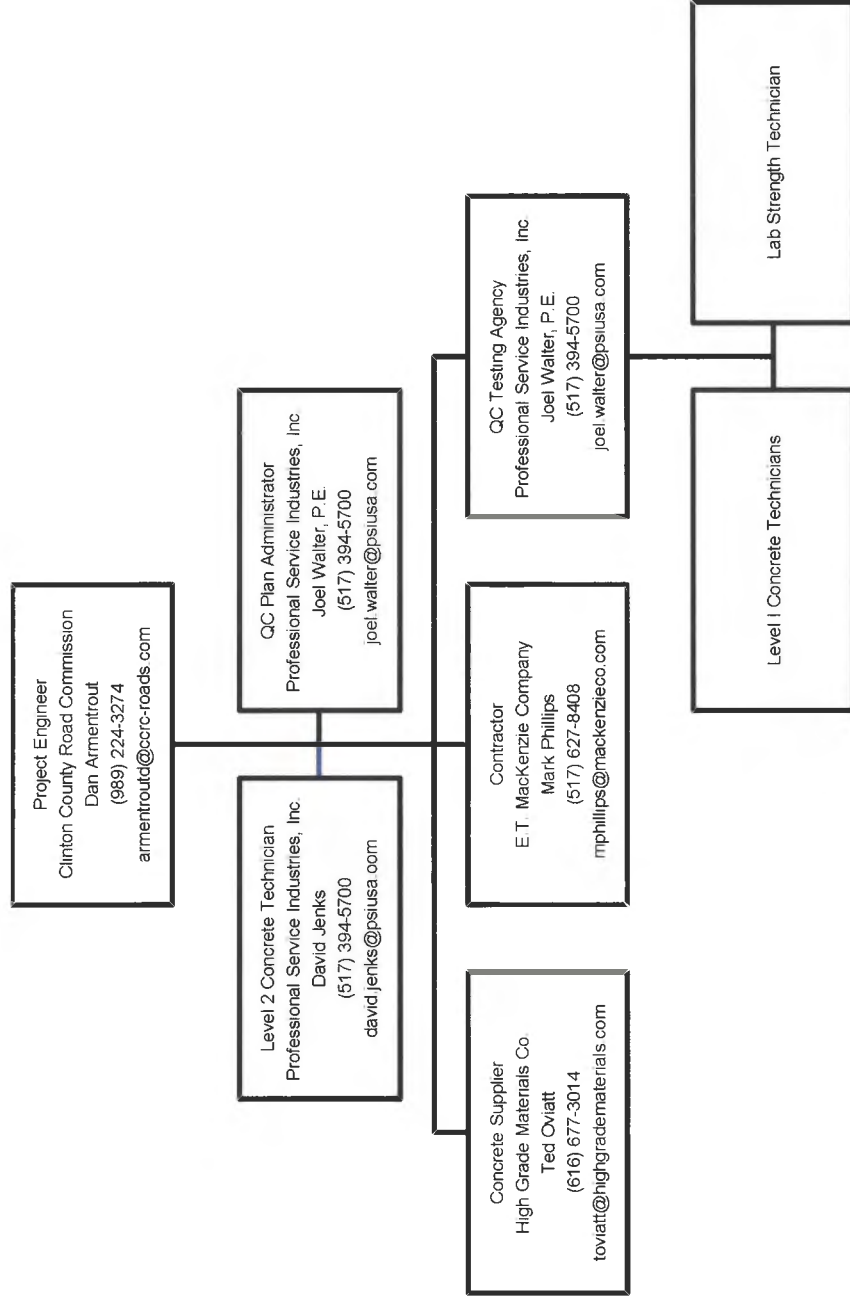
**MDOT Project No. 19000-130450A**

**Date Submitted: August 7, 2017**

**A. Organizational Chart**

**ORGANIZATIONAL CHART**

West Herbison Road from Old US-27 to west of Turner Street  
Clinton County, Michigan  
MDOT Project No. 19000-130450A



## **B. QC Plan Administrator**

The QC plan administrator will be Mr. Joel Walter, P.E. of Professional Service Industries, Inc.

### **Contact Information:**

Mr. Joel Walter, P.E.  
Professional Service Industries, Inc.  
3120 Sovereign Drive, Suite C  
Lansing, Michigan 48911  
Office: (517) 394-5700  
Cell Phone: (517) 937-9006  
Email: joel.walter@psiusa.com

## **C. QC Staff**

This Quality Control Plan will be administered in accordance with Special Provision for Quality Control and Acceptance of Portland Cement Concrete 12SP-604B-06, dated July 13, 2016.

The individual administering the Quality Control Plan for Professional Service Industries, Inc. (PSI) is Joel Walter, P.E., Branch Manager. David Jenks will be our MCA Level 2 technician and will always be available by cellular telephone. Field concrete MCA Level 1 QC testing staff includes David Jenks, Scott Maran, Jeff Southcott and Justin Speaks. Field concrete MCA Level 2 QC testing staff includes David Jenks. PSI's laboratory ACI concrete strength testing technician is David Jenks. Scheduling of technicians will be the responsibility of Joel Walter, P.E. who can be reached at the general office number for the PSI Lansing facility (517) 394-5700 between the hours of 8:00 AM and 5:00 PM.

The concrete supplier QC staff with High Grade Materials Co. will be Ted Oviatt.

Certifications for the above PSI staff can be found appended to this document.

## **D. QC Personnel Interaction**

When concrete loads have test results out of the specified range, PSI will immediately contact (either verbally or via cell phone) the contractor, supplier and the on-site Clinton County Road Commission representative. PSI will make the decision whether to accept and place the concrete or reject the load based on the criteria in this document. When concrete is rejected, placement shall stop until material is brought back within specifications. When concrete loads have test results out of specified ranges and are rejected by PSI, the results will be written on the concrete delivery ticket. Rejected load tickets will become part of the project documents.

In the event of continued production of nonconforming work, concrete production will ~~stop and the PSI quality control plan administrator will work directly with the contractor~~ and supplier to determine the actions required to bring the mix into compliance with project specifications. PSI will work with the supplier to make adjustment, if possible, to immediately correct the deviation. ***If approved by the Clinton County Road Commission***, adjustments to air entraining admixture quantities and water addition rates will be periodically made to keep the concrete mixtures within the specifications.

#### **E. Coordination of Activities**

Coordination of all site activities will be at the direction of the E.T. MacKenzie Company. A 24-hour notice will be given to the Clinton County Road Commission and PSI before concrete is to be placed. The Clinton County Road Commission will be provided the opportunity to witness all sampling and testing.

#### **F. Documentation, Procedures and Submittals**

PSI will be handling the QC concrete testing for the E.T. MacKenzie Company. QC test results will be provided within 24 hours of testing to the E.T. MacKenzie Company and the Clinton County Road Commission. Sample report formats for field testing of plastic concrete and concrete compression reports are appended to this document.

#### **G. Project and Plant Specifics**

Concrete will be supplied by High Grade Materials Co. from their plant located in Lansing, Michigan. The Lansing plant is approximately 6 miles from the project.

#### **H. Concrete Production Facilities Inspections and Certification**

Please reference the plant certification documents prepared by High Grade Materials Co. for the E.T. MacKenzie Company appended to this QC plan.



## **I. Current Testing Equipment Calibrations**

PSI will supply the required testing equipment including: slump kits, thermometers, air meters and locking cure boxes for QA and QC samples as required. In addition to the equipment listed, the testing equipment on site will include a roll-a-meter, unit weight bucket and scale. A roll-a-meter (volumetric) meter will be needed on-site if the pressure meter needs to be verified. If required equipment is not on site, concrete will not be placed until it is present. PSI maintains internal quality control procedures on its field and laboratory equipment. The dimensions of the slump cones are verified every twelve (12) months in accordance with ASTM C143. The calibration records for slump cones are documented on Form CCM-1 of PSI's Corporate Quality Assurance Manual (QA-M-5). The pressure-type air meters are calibrated every three (3) months in accordance with ASTM C231. The calibration records for air meters are documented on Form CCM-3 of QA-M-5. Calibration records for thermometers are documented on Form GL-6 of QA-M5. Calibration records for compression testing and beam breaker machines are provided by Calibration Services Inc.

Records of PSI's latest equipment calibrations for compression machine and beam breaker are appended to this document. Each piece of field equipment assigned to a PSI technician is labeled with a unique identification number, date of last calibration and date of next calibration. PSI will provide specific calibration records for equipment if requested.

## **J. Testing and Initial Curing Facilities for QC and QA Specimens**

PSI field technicians will look for a level area near the site of the concrete placement to perform daily testing activities and to place the initial cure facilities for both QA and QC cylinders or beams. PSI will provide plastic coolers for the cylinders that will have a chain or hasp device to be padlocked. PSI will be responsible for the moving of the initial cure facilities between concrete placement locations. Field cure beams will be left on-site and cured in a manner consistent with the concrete they represent.

## **K. Stockpile Management Plan**

Please reference the aggregate quality control plan prepared by High Grade Materials Co.

## **L. Corrective Action Plan**

When concrete loads have test results out of the specified range, PSI will immediately notify the contractor, supplier and the on-site Clinton County Road Commission representative. PSI will make the decision whether to accept and place the concrete or reject the load based on the criteria in this document. When concrete is rejected, placement will stop until material is brought back within specifications. When concrete loads have test results out of specified ranges and are rejected by PSI, the results will be written on the concrete delivery ticket. Rejected load tickets will become part of the project documents.



In the event of continued production of nonconforming work, concrete production shall stop, the PSI quality control plan administrator will work directly with the contractor and supplier to determine the actions required to bring the mix into compliance with project specifications. PSI will work with the supplier to make adjustment, if possible, to immediately correct the deviation. These adjustments to air entraining admixture quantities and water addition rates will be periodically adjusted to keep the concrete mixtures within the specifications per MDOT Special Provision 12SP-604B-06.

Nonconforming material will not be allowed to be placed. Adjustments will be made before placement.

PSI will maintain records of all quality control tests and observations. These records will indicate what action was taken to correct deficient concrete when quality control tests indicate the concrete was not in compliance with the specifications.

#### M. Mixing Time and Transportation

Transportation of the concrete from the plant to the site will be performed by High Grade Materials Co. The anticipated transportation time to the project site from the Lansing plant is 12 minutes. The time between charging the mixer and placing concrete will be per Table 601-1 of the MDOT 2012 Standard Specification for Construction.

<b>Table 601-1</b>			
<b>Time Between Charging Mixer and Placing Concrete (a)</b>			
<b>Type of Unit</b>	<b>Concrete Temperature (ASTM C1064)</b>		
	<b>&lt;60°F</b>	<b>60°F-85°F</b>	<b>&gt;85°F</b>
Open Top Trucks (b)	60	45	30
Open Top Agitating Units (b)	60	60	30
Closed Top Agitating Units and Truck Mixers	90	60	45
Truck Mixers and Closed Top Agitating Units with Concrete Containing Water Reducing Retarding Admixtures (c)	120	90	70
a. Times shown in the table are in minutes b. Not allowed for structural concrete c. Superstructure concrete must meet the time limits for closed top agitating units and truck mixers			

**N. Placement and Consolidation Methods**

The mixes for the paving, sidewalk and curb and gutter are anticipated to be discharged directly from the truck. The concrete will be placed per MDOT 2012 Standard Specifications for Construction Section 703.03 Item H, "Placing Concrete".

**O. Monitoring Stability of Air Content**

PSI will be performing air content checks by the pressure method on an hourly basis. PSI will also do a comparison air content check with the QA representative at the start of the project to confirm that the air meters coincide with each other.

**P. Hot and Cold Weather Protection**

Hot weather protection for concrete will consist of waiting for favorable weather conditions for placement.

During cold weather, the concrete will be protected to prevent damage. Frozen concrete or concrete damaged by cold weather will be removed and placed. If the air temperature is forecasted to be between 40°F and 50°F, the concrete will be protected per the ordinary protection requirements of Section 706.03.J of the MDOT 2012 Standard Specifications for Construction. If the air temperature is forecasted to be below 40°F during the curing period, the concrete will be protected per the low temperature requirements of Section 706.03.J of the MDOT 2012 Standard Specifications for Construction.

**Q. Control Charts with Action and Suspension Limits**

S2-P1 mixes

<u>Quality Characteristics</u>	<u>Action Limits</u>	<u>Suspension Limits</u>
Air Content	<6.0% or >7.5%	<5.5% or >8.0%
Air Content Loss	>1.0%	>1.5%
Concrete Temperature	<60° or >85°F	<45°F or >90°F
Slump	>2.5"	>3.0"
Slump with Mid-Range	>5.5"	>6.0"

**R. Verification for non-deleterious alkali-silica reactivity**

Please reference the aggregate information prepared by High Grade Materials Co. appended to this QC plan.

**S. Mix Design and JMF**

Please reference the JMF's prepared by High Grade Materials Co. for the E.T. MacKenzie Company.

**T. Proposed Lot Size and Location of Each Mix to Be Placed**

A production lot will be defined as a single day's production or 50 cubic yards, whichever is less.

**U. The frequency of Sampling and Testing**

Sampling of the concrete will take place on site at the point of placement because ready mix concrete is proposed for this project. PSI will verify the correct, approved mix is delivered and placed at the project site.

PSI will sample and test for temperature, slump and air content the first load, and for each class of concrete delivered to the work site each day. Concrete placement will not begin until the quality control tests verify that the concrete meets required specifications. During the concrete placement, PSI will test for temperature, slump and air content of the concrete in a random manner at least once per a single day's production or 50 cubic yards, whichever is less. Unit weight tests shall be performed on each grade of concrete at the beginning of production. Concrete yield will be determined after the start of the first concrete operation for each mix design and immediately after the specified slump, temperature and air entrainment have been attained. PSI will keep track of batch times and discharge times for time limit restrictions. PSI will perform correlation testing with the Clinton County Road Commission inspector each time new equipment is utilized on the project site by either party. The following chart indicates the test method and frequency of proposed testing for this project:

<u>Test Method</u>	<u>Standard</u>	<u>Frequency</u>
Sampling freshly mixed concrete	ASTM C-172	Minimum of 1 per lot
Air content of freshly mixed concrete by the pressure method	ASTM C-231	First load of each mix then a minimum of once per hour
Air content of freshly mixed concrete by the volumetric method	ASTM C-173	As directed by engineer

Slump of hydraulic cement concrete	ASTM C-143	First load of each mix then a minimum of one per hour
Making and curing concrete test specimens in the field	ASTM C-31	Minimum 1 set per day
Compressive strength of cylindrical concrete specimens	ASTM C-39	As required, typically 7 and 28 days
Density (unit weight) and yield of plastic concrete	ASTM C-138	At first concrete operation, then as needed
Making and curing concrete test specimens in the lab	ASTM C-192	Curing of QC cylinders
Temperature of plastic Portland cement concrete	ASTM C-1064	Performed with slump and air tests or a minimum of once per hour

When concrete loads have test results that are out of the specified range, PSI will immediately notify the contractor, supplier and the on-site Clinton County Road Commission representative. If adjustments are made to the mix to correct deviations, the air content and slump will be tested on the next truck.

#### V. Handling and Protection of Test Specimens

PSI will store the concrete test specimens in the initial cure storage facility as indicated in Section J of this document. The following day PSI will return to the project site and retrieve the cylinders from the initial cure storage facility. The cylinders will be transported in an upright position and kept moist during transportation to the PSI laboratory located at 3120 Sovereign Drive, Suite C in Lansing, Michigan. Once at the laboratory the specimens will be stripped and labeled and then placed into our laboratory curing room until the required time for compression testing. The cure room is monitored via a temperature and humidity recorder. The QC cylinders will be retrieved from the cure room and testing for compressive strength at the required dates. PSI will break all of the QC cylinders. Test results of compressive strength testing will be provided to the Clinton County Road Commission and the E.T. MacKenzie Company via electronic distribution within 24 hours of testing.

#### W. Methods to Monitor Construction Equipment Loading and Open to Traffic Strengths

N/A

## **X. Finishing and Curing Procedure**

---

Finishing and curing will be in accordance with Sections 706.03 and 701.03.C of the MDOT 2012 Standard Specifications for Construction.

## **Y. Ride Quality Control**

Not applicable

## **Z. QC Records**

A copy of PSI's Concrete Field Report will be provided for each day of production. The Concrete Field Report will describe the item of work represented and its location. PSI's Concrete Test Report will be provided after the testing of the specimens for compressive strength. Any actions to correct deficiencies will be included in the notes section of the report or a separate daily field report summarizing the actions will be provided.



# Michigan Concrete Association Certification Board of Examiners

hereby certifies that on 3/17/2016

## David Jenks

did, by written and performance examinations, complete the requirements for

### MCA Level II Advanced Concrete Technician

This certification expires on 4/15/2019

MCA Certification Board of Examiners

Michigan Department of Transportation  
ACI – Greater Michigan Chapter  
ACI – West Michigan Chapter  
Alpena Community College



MCA Director of Technical Services/Training



Examiner



Executive Director

# Michigan Concrete Association Certification Board of Examiners

Hereby certifies that on 3/8/2016

## David Jenks

did, by written and performance examinations, complete the requirements for

### Concrete Field Testing Technician Level I

This certification expires on 4/15/2019

MCA Certification Board of Examiners

Michigan Department of Transportation  
ACI - Greater Michigan Chapter  
ACI - West Michigan Chapter  
Alpena Community College



MCA Director of Technical Services/Training



Examiner



Executive Director

# AMERICAN CONCRETE INSTITUTE

*This is to certify that*

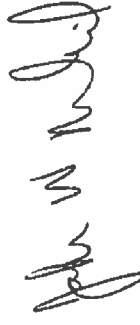
**DAVID A JENKS JR**

*has demonstrated knowledge and ability by  
successfully completing the ACI Certification  
requirements and is hereby recognized as an*

**ACI Concrete Strength Testing Technician**

**Certified Date: 04/08/2016 Expires: 04/08/2021**

**Examiner of Record: Mr Steven M Waalkes**



*ACI Managing Director of Certification*

*The Authenticity of this certification can be verified at [www.ACICertification.org/verify](http://www.ACICertification.org/verify)*



# Michigan Concrete Association Certification Board of Examiners

Hereby certifies that on 1/19/2017

**Scott Maran**

did, by written and performance examinations, complete the requirements for

**Concrete Field Testing Technician Level I**

*This certification expires on 4/15/2020*

MCA Certification Board of Examiners

Michigan Department of Transportation  
ACI – Greater Michigan Chapter  
ACI – West Michigan Chapter  
Alpena Community College



MCA Director of Technical Services/Training



Examiner



Executive Director

# Michigan Concrete Association

## Certification Board of Examiners

Hereby certifies that on 3/9/2017

**Jeff Southcott**

did, by written and performance examinations, complete the requirements for

### Concrete Field Testing Technician Level I

*This certification expires on 4/15/2020*

MCA Certification Board of Examiners

Michigan Department of Transportation

ACI – Greater Michigan Chapter

ACI – West Michigan Chapter

Alpena Community College



MCA Director of Technical Services/Training



Examiner-Steven Waalkes



Executive Director-Daniel DeGraaf

# Michigan Concrete Association Certification Board of Examiners

Hereby certifies that on 5/11/2017

**Justin Speaks**

did, by written and performance examinations, complete the requirements for

**Concrete Field Testing Technician Level I**

*This certification expires on 4/15/2020*

MCA Certification Board of Examiners

Michigan Department of Transportation  
ACI – Greater Michigan Chapter  
ACI – West Michigan Chapter  
Alpena Community College



MCA Director of Technical Services/Training



Examiner-Steven Waalkes



Executive Director-Daniel DeGraaf

# Calibration Services, Incorporated

300 Butternut Road Emlenton, PA 16373

Website [www.calibrationinc.com](http://www.calibrationinc.com)

Phone: (724) 867-6664

Fax: (724) 867-1346

email [info@calibrationinc.com](mailto:info@calibrationinc.com)

## Certificate of Calibration

<b>Client:</b>	Professional Service Industries, Inc	<b>Report Date:</b>	4/7/2017
<b>Address:</b>	3120 Sovereign Dr. Suite C	<b>Calibration Date:</b>	4/4/2017
<b>City/State/Zip:</b>	Lansing, MI 48911	<b>Technician:</b>	Dan Pfeil
<b>Calibration Location:</b>	3120 Sovereign Dr. Suite C	<b>Temperature:</b>	17 Degrees C
<b>City/State/Zip:</b>	Lansing, MI 48911	<b>Humidity:</b>	60.0%
<b>PO Number:</b>	0408	<b>Barometric Pressure:</b>	28.49 in Hg
<b>Cert Number:</b>	171044	<b>Device Type:</b>	Digital Compression Machine
<b>Procedure No:</b>	CAL 1.02A	<b>Manufacturer:</b>	Forney
<b>Condition of Device:</b>	Good	<b>Model Number:</b>	QC-200-GB2
		<b>Serial Number:</b>	76054-GB2-131119-472
		<b>Range:</b>	4,000 lbs to 400,000 lbs

### CALIBRATION SYSTEM USED

All calibration standards used in this calibration are traceable to the International System of Units (SI) through NIST or equivalent National Measurement Institute signatories to the CIPM MRA.

Code	Instrument	Capacity	Serial Number	Class A
	BAROMETER - Control Company Barometer		S/N 122716347	
	Reference Number: 4247-8351032 Control Company			
	Date of Test: February 28, 2017 Date Due: February 28, 2018			
C	Revere Load Cell	100K	763137	2,000.00C
	Report No. 76313712215 Morehouse Instrument			
	Calibrated: September 22, 2015 Recalibration due: September 22, 2017			
D	Lebow Load Cell	400K	139	29,760.49C
	Report No. 13912215 Morehouse Instrument			
	Calibrated: September 22, 2015 Recalibration due: September 22, 2017			

### Statement of Compliance

This is to certify that the above described testing device has been calibrated in accordance with CSI's QMS Program based on ISO/IEC 17025 in accordance with ANSI/NCSL Z540-3, the procedure listed above, and ASTM E-4-16 (excluding sections: 6.2, 13 all, 16 all, A1 all). The device has been verified within +/- 1% of applied load. Uncertainties were calculated using square root sum of squares (rss) with a confidence factor of 95% and a coverage of k=2. The expanded uncertainty is 0.25% of applied load.

Signed

Calibration Technician

Signed

Quality Director

This Certificate is issued as a statement of the fact that on this date the above instrument(s) had an accuracy as indicated in the data section of this certificate. It should not be construed or regarded as a Guarantee or Warranty of any kind (in favor of the client, the client's customers, or the public at large) that the instrument(s) will continue to retain the same percentage (%) of accuracy or efficiency as determined on the date when the calibration, adjustments if required, was performed and reported by Calibration Services, Inc. since the calibrator has absolutely no control over the future operation, damage, maintenance, repairs, and overall condition of the instrument(s) and hereby expressly disclaims any and all liability for damage, or loss sustained by all parties arising or resulting from deterioration, obsolescence, malfunction, or substandard performance of said instrument(s), which shall be deemed to be and which shall remain the sole responsibility of the machine's regular custodian, owner, and/or manufacturer. This document shall not be reproduced except in full, without the written approval of Calibration Services, Inc.



# Calibration Services, Incorporated

300 Buttertown Road Emlenton, PA 16373  
 Website www.calibrationinc.com

Phone: (724) 867-6664 Fax: (724) 867-1346  
 email info@calibrationinc.com

## Certificate of Calibration

**Client:** Professional Service Industries, Inc  
**Address:** 3120 Sovereign Dr Suite C  
**City/State/Zip:** Lansing, MI 48911

**Report Date:** 4/7/2017  
**Calibration Date:** 4/4/2017  
**Technician:** Dan Pfeil  
**Temperature:** 17 Degrees C  
**Humidity:** 60.0%  
**Barometric Pressure:** 28.49 in Hg  
**Device Type:** Digital Compression Machine  
**Manufacturer:** Forney  
**Model Number:** QC-200-GB2  
**Serial Number:** 76054-GB2-131119-472  
**Range:** 4,000 lbs to 400,000 lbs

**Calibration Location:** 3120 Sovereign Dr Suite C  
**City/State/Zip:** Lansing, MI 48911  
**PO Number:** 0408  
**Cert Number:** 171044  
**Procedure No:** CAL 1 02A  
**Condition of Device:** Good

<b>Range Number 1</b>	<b>Range:</b> 4,000 lbs to 400,000 lbs	<b>Graduation:</b> 10 lbs
-----------------------	--	---------------------------

**Mode:** Compression

**As Found:** In Tolerance      **As Left:** In Tolerance

<u>Grads</u>	<u>Code</u>	<u>Applied Load</u>	<u>As Found</u>	<u>#1 As Left</u>	<u>#2 As Left</u>	<u>Final #1 Error</u>	<u>Final #2 Error</u>	<u>Final #1 Percent</u>	<u>Final #2 Percent</u>	<u>Algebraic Difference Percent</u>	<u>EATU (+/- bias)</u>
lbs		lbs	lbs	lbs	lbs	lbs	lbs				lbs
10	C	4000	3960	4010	4000	10.000	0.000	0.250	0.000	0.250	9.96
10	C	8000	7950	8010	8000	10.000	0.000	0.125	0.000	0.125	19.92
10	C	16000	15840	15990	16010	-10.000	10.000	-0.063	0.063	-0.125	39.84
10	C	24000	23860	23990	24010	-10.000	10.000	-0.042	0.042	-0.083	59.76
10	C	32000	31810	32020	32030	20.000	30.000	0.063	0.094	-0.031	79.68
10	C	40000	39790	40020	40040	20.000	40.000	0.050	0.100	-0.050	99.60
10	C	80000	79680	80010	80030	10.000	30.000	0.013	0.038	-0.025	199.20
10	D	160000	159440	160040	160060	40.000	60.000	0.025	0.038	-0.013	398.40
10	D	240000	239580	240040	240050	40.000	50.000	0.017	0.021	-0.004	597.60
10	D	320000	319790	320060	320050	60.000	50.000	0.019	0.016	0.003	796.80
10	D	400000	399810	400070	400060	70.000	60.000	0.018	0.015	0.003	996.00
<i>Zero Return</i>			-10	10	-10						





Professional Service Industries, Inc.  
3120 Sovereign Drive, Suite C  
Lansing, MI 48911

Phone: (517) 394-5700  
Fax: (517) 394-5796

# Concrete Field Report

Report No: [REDACTED]  
Issue No: 2

Client: [REDACTED] CC: [REDACTED]  
  
Project: [REDACTED]  
EAST LANSING, MI

These test results apply only to the specific locations and materials noted and may not represent any other locations or elevations. This report may not be reproduced, except in full, without written permission by Professional Service Industries, Inc. If a non-compliance appears on this report, to the extent that the reported non-compliance impacts the project, the resolution is outside the PSI scope of engagement.

*[Signature]*

Approved Signatory: Joel Walter (District Manager)  
Date of Issue: 4/8/2013

**General Field Data**  
Technician: David Jenks  
Test Date: 3/22/2013  
Weather: Partly Cloudy

Set No.	Specimens Made	Ticket	Time Batched	Time Unloaded	Cubic Yards Placed	Slump (in)	Air Content (%)	Air Temp. (°F)	Concrete Temp. (°F)
0408642-1-C1	4	14-1797860	14:32	15:25	10.0	6.00	6.40	42	65
0408642-1-C2	0	14-1797875	15:20		18.0		6.20	42	65

Location & Remarks		
General Location: [REDACTED]		
Set No.	Location	Remarks
0408642-1-C1	Strain pole foundation, west median	
General Location: [REDACTED]		
Set No.	Location	Remarks
0408642-1-C2	Signal display poles, south side of intersection	

Set No.	Supplier	Mix	Design Strength (psi)
0408642-1-C1	[REDACTED]	DDP165E9	3500
0408642-1-C2	[REDACTED]	DDP165E9	3500

**Notes**  
Sampled from Revolving Drum Truck Mixer (ASTM C 172, 5.2.3)

**Remarks**  
Applicable ASTM standards unless otherwise indicated: Making Samples: C31 (except sec. 10.1.2); Slump: C143; Air Content: C231 (except sec. 6); Temperature: C1064; Sampling: C172; Grout: C1019; Slump-Flow: C1611; Mortar: C109; Flow: C1437.





Professional Service Industries, Inc  
3120 Sovereign Drive, Suite C  
Lansing, MI 48911

Phone: (517) 394-5700  
Fax: (517) 394-5796

Report No: [REDACTED]

Issue No: 2

# Concrete Test Report

Client: [REDACTED] CC: [REDACTED]

Project: [REDACTED]  
EAST LANSING, MI

These test results apply only to the specific locations and materials noted and may not represent any other locations or elevations. This report may not be reproduced, except in full, without written permission by Professional Service Industries, Inc. If a non-compliance appears on this report, to the extent that the reported non-compliance impacts the project, the resolution is outside the PSI scope of engagement.

Approved Signatory: Joel Walter (District Manager)  
Date of Issue: 4/30/2013

## Mix Data

Mix Data Submitted By	Material	Source	Amount	Moisture (%)
Supplier: [REDACTED]	Cement 1 (lb)	Lafarge	423	N/A
Plant: [REDACTED]	Cement 2 (lb)	Lafarge-GGBFS	141	N/A
Mix Identification: DDP165E9	Fly Ash (lb)			N/A
Specified Design Strength (psi): 3500 at age 28 days	Coarse Agg (lb)	Stoneco-Pit #58-003	1766	
Design Unit Weight (pcf)	Fine Agg (lb)	Carl Schlegel-Pit #19-055	1270	
Cement Factor (Sacks/yd <sup>3</sup> ): 6.00	Admix Agg 1 (lb)	BASF Micro Air	0.8	N/A
Water-Cement Ratio (lb/lb): 0.45	Admix Agg 2 (lb)	BASF Polyheed 997	8.0	N/A
	Water (gal)		30.7	N/A

## Details of Sample

Date Sampled	Date Received	Measured	Specified
3/22/2013	3/23/2013	Slump (in) ASTM C 143: 6.00	- 6
General Location: [REDACTED]		Slump w/ plasticizer (in): N/A	
Sample Location: Strain pole foundation, west median		Air Temp (°F): 42	
Curing Method: One day Field/Laboratory Cure		Concrete Temp (°F) ASTM C 1064: 65	
Field Sample No: [REDACTED]	Field Cure Temp (°F) High/Low	Air Content (%) ASTM C 231: 6.40	5.5 - 8
Contractor: [REDACTED]		Unit Weight (pcf) ASTM C 138: [REDACTED]	
Truck No.: 33	Ticket No.: 14-1797860	Batch Size (yd <sup>3</sup> ): 10	
Sampled By: David Jenks		Water Added (gal) Before/After	
Submitted By: David Jenks		Time Batched: 14:32	
Weather: Partly Cloudy		Time Sampled: 15:20	
Est. Wind (mph): 5-10	Yd <sup>3</sup> Placed: 10.0	Time Placed: 15:25	
Est. Rh (%): 65		Time In Truck (mins): 53	

## Compressive Strength of Concrete Cylinders

ASTM C 39

Specimen ID	Date Tested	Age (Days)	Dimensions (in) Diameter/Height	Area (in <sup>2</sup> )	Type of Cap	Ultimate Load (lbf)	Fracture Type/Remark	Compressive Strength (psi)	Required Strength (psi)
[REDACTED]	03/29/13	7	6.03 / 12.00	28.56	U	90000	4	3150	
[REDACTED]	04/19/13	28	6.03 / 12.00	28.56	U	160000	4	5600	3500
[REDACTED]	04/19/13	28	6.03 / 12.00	28.56	U	158000	5	5530	3500
[REDACTED]		Hold			U				3500

Average 28 Day Compressive Strength (psi) 5570

## Notes

1. Sampling to ASTM C 172
2. Specimen(s) Prepared to ASTM C 31
3. Capping B=Bonded ASTM C 617, U=Unbonded ASTM C 1231, C = Combined

## Remarks

Fracture Type / Remarks: 4 = C39: Diagonal fracture; C1314: Tension Break, 5 = C39: Side fracture-opposite ends; C1314: Semi-Conical Break.  
Applicable ASTM standards unless otherwise indicated: Slump: C143.

# National Ready Mixed Concrete Association



## Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

***Lansing Plant No. 06, Lansing, MI***  
***High Grade Materials Co., Inc.***

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities*. As of the inspection date, the facilities met the requirements for production by

***Truck Mixing with Automatic Batching and Recordings of  
Cementitious Materials, Aggregate, Water, and Chemical Admixtures***



Signature of Licensed Professional Engineer

**February 12, 2016**

Inspection Date

**February 12, 2018**

Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

Signature of Company Official

Title of Company Official

**NOTICE:** The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 810464

Certification ID #: 19575

© 1965, 1992, 2001, 2002, 2006, 2007, 2012

National Ready Mixed Concrete Association 900 Spring Street • Silver Spring • Maryland 20910



# National Ready Mixed Concrete Association



## Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

### *Lansing Plant No. 62, Lansing, MI* *High Grade Materials Co., Inc.*

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities*. As of the inspection date, the facilities met the requirements for production by

### *Truck Mixing with Automatic Batching and Recordings of Cementitious Materials, Aggregate, Water, and Chemical Admixtures*



Signature of Licensed Professional Engineer

February 12, 2016

Inspection Date

February 12, 2018

Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

Signature of Company Official

Title of Company Official

**NOTICE:** The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 843722

Certification ID #: 19576

© 1965, 1992, 2001, 2002, 2006, 2007, 2012

National Ready Mixed Concrete Association 900 Spring Street • Silver Spring • Maryland 20910











**NRMCA CERTIFIED CONCRETE PLANT  
INTERIM CHECK ON ADMIX & WATER DISPENSERS**  
(to be performed at 90 day intervals)

NAME : High Grade Materials

ADDRESS: HG06 Lansing  
1800 Turner St  
Lansing, MI

Date of original certification : \_\_\_\_\_

Admix Manufacture ; GRT

Admix #1  
Name : AE  
Dose Rate : 1 /cwt

Target	Metered	Measured
50	49	49

Admix #2 400NC  
Name : \_\_\_\_\_  
Dose Rate : 3 /cwt

Target	Metered	Measured
100	100	99

Admix #3  
Name : R  
Dose Rate : 3 /cwt

Target	Metered	Measured
100	101	101

Admix #4  
Name : KB1200  
Dose Rate : 5 /cwt

Target	Metered	Measured
150	152	152

**WATER**

Target	Metered	Measured

Performed By : \_\_\_\_\_ Date : 5-2-17  
Witnessed by M.D.O.T. : YES / NO Name : Ted Oviatt

*HIGH*  *GRADE*



---

## *High Grade Materials Co.*

---

0-10561 Linden Drive • Grand Rapids, MI 49544

Office 616-677-1271 • Fax 616-677-3014

[www.highgradematerials.com](http://www.highgradematerials.com)

### **MDOT Quality Control Plan Stockpile Management**

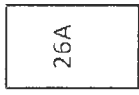
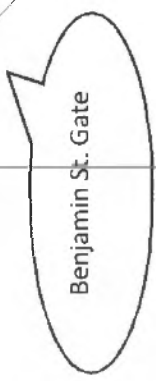
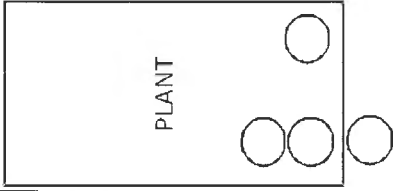
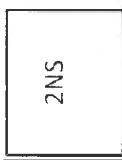
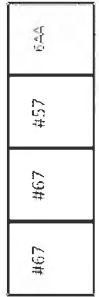
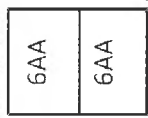
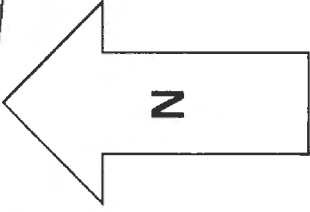
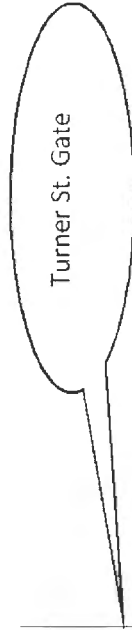
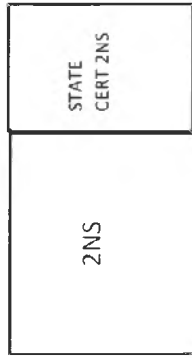
The following methods will be employed to at each of High Grade Materials' permanent batch facilities to prevent contamination of aggregates:

- Aggregate piles are divided by poured concrete walls or stacked 2' x 2' x 6' concrete blocks.
- Each aggregate pile will have a permanent designation label painted on either the dividing wall or an affixed sign.
- Aggregate piles will be monitored by the plant manager for quantity to protect against overflow of aggregate bins.
- Aggregate piles will be placed on concrete and/or operators loading material from aggregate piles into batch plant bins will leave the lower 6-8" of the aggregate pile undisturbed to prevent excess moisture and contamination from the subgrade.
- See attached map indicating location of stockpiles

**ALLENDALE • DUTTON • SAND LAKE • GREENVILLE • KALAMAZOO • BENTON HARBOR  
SIX LAKES • CARSON CITY • LANSING • MUSKEGON**

6AAA	#467	LTWIGHT	#67	#57	6AA
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**HIGH GRADE MATERIALS LANSING STOCK PILE MAP 2017**





# SOILS & STRUCTURES

## Potential Alkali Reactivity of Aggregates ASTM C1293

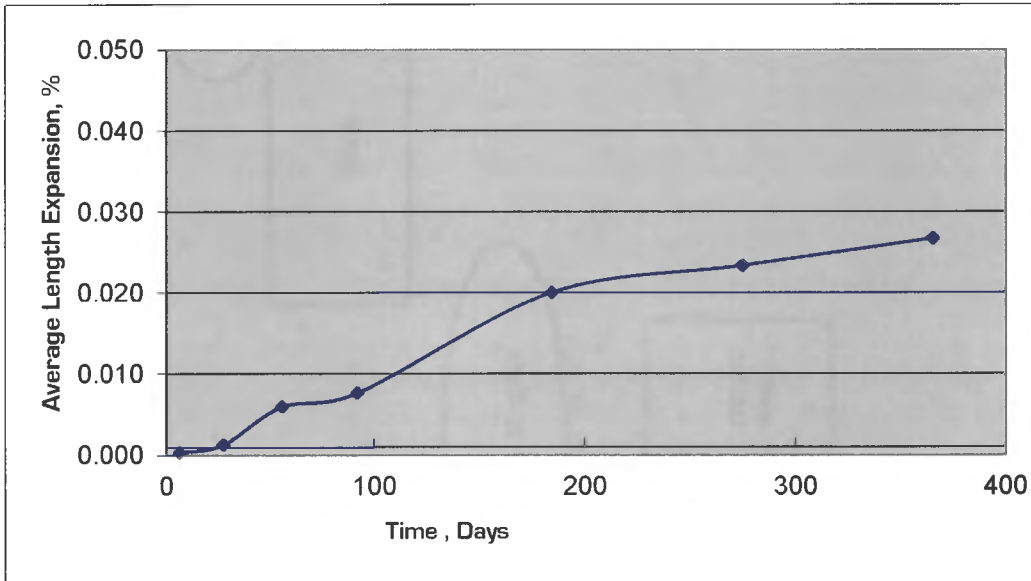
Project: Greenville Sand - 59-44  
 Client: High Grade Materials  
 Job No.: 2015.0244

Date Molded: 3/31/2015  
 Date Stripped: 4/1/2015  
 Date Reported: 4/1/2016

Fine Aggregate: 2NS Pit # 59-44  
 Coarse Aggregate: Port Inland Limestone  
 Portland Cement: Type I St. Marys Cement

Reagent: NaOH  
 Fly Ash: None  
 Other: None

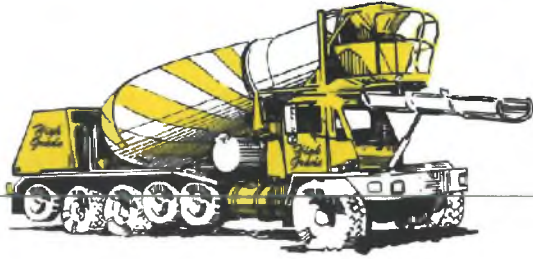
Date	Days Immersed	Specimen			Average Expansion, %
		A	B	C	
4/1/2015	Initial	0.0170	0.0712	0.0773	
4/7/2015	7	0.0170	0.0713	0.0773	0.0003
4/28/2015	28	0.0170	0.0715	0.0774	0.0013
5/26/2015	56	0.0170	0.0722	0.0781	0.0060
6/31/2015	92	0.0174	0.0722	0.0782	0.0077
9/31/2015	184	0.0186	0.0733	0.0796	0.0200
12/31/2015	275	0.0194	0.0734	0.0797	0.0233
3/31/2016	365	0.0198	0.0737	0.0800	0.0267
<b>TOTAL EXPANSION:</b>					<b>0.027</b>



**Comments:** MDOT Special Provision for Quality Control And Acceptance of Portland Cement Concrete - ASTM 1293 - Concrete Prism Test. If the expansion of the concrete prisms is not greater than 0.040 percent after 1 year, the fine aggregate is considered non-deleterious to ASR reactivity and may be used in the concrete without the need for ASR mitigation. **This material meets the MDOT specification.**

Reviewed By: [Signature]





## High Grade Materials Co.

0-10561 Linden Drive • Grand Rapids, MI 49544

Office 616-677-1271 • Fax 616-677-3014

[www.highgradematerials.com](http://www.highgradematerials.com)

August 3, 2017

### MDOT Concrete Submittal

**MDOT Job#** 19000-130450  
**Project Location:** W Herbison Rd (Old US-27 to Turner St)  
**Prime/Subcontractor(s):** E.T. Mackenzie Co  
**Project Engineer:** Dan Armentrout – Clinton CRC  
**Plant Location(s):** HG06 Lansing MI

#### JMFs Included:

Mix Design #	Mix Description	Intended Use	Type of Mix
M.S2W	MDOT S2-P1	Paving, Sidewalk, C&G, Misc	Both
M.S2M	MDOT S2-P1 w/MRWR	Paving, Sidewalk, C&G, Misc	Both
M.S2D	MDOT S2-P1 w/Retarder	Paving, Sidewalk, C&G, Misc	Both
M.S2MD	MDOT S2-P1 w/MRWR & Retarder	Paving, Sidewalk, C&G, Misc	Both
M.S2WSF	MDOT S2-P1 Slipform	Paving, Sidewalk, C&G, Misc	Both
M.S2DSF	MDOT S2-P1 Slipform w/Retarder	Paving, Sidewalk, C&G, Misc	Both

Ted Oviatt  
High Grade Materials, Quality Control  
MCA Level II (ACI# 01176888)

**ALLENDALE • DUTTON • SAND LAKE • GREENVILLE • KALAMAZOO • BENTON HARBOR  
SIX LAKES • CARSON CITY • LANSING • MUSKEGON**

## JOB MIX FORMULA (JMF) CONCRETE FIELD COMMUNICATION

This form applies only to the project listed below and is not transferable to other projects  
**DISTRIBUTION: ORIGINAL – Project Engineer COPIES – Contractor, Lansing CFS, Region, Inspector**

CONTROL SECTION 19000	JOB NUMBER 130450	PROJECT LOCATION W Herbison Rd (Old US-27 to Turner St)	PROJECT ENGINEER Dan Armentrout - Clinton CRC
CONCRETE SUPPLIER HIGH GRADE MATERIALS		PLANT LOCATION Lansing, MI	PLANT NUMBER HG06
GRADE OF CONCRETE S2-P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER M.S2W	INTENDED USE (S)
PRIME / SUBCONTRACTOR(S) E. T. Mackenzie Co			CONTRACTOR QC PLAN Y <input type="checkbox"/> SUBMITTED? (MDOT use only) N <input type="checkbox"/>
STANDARD SPEC DATE 2012	QC/QA SPECIAL PROVISION DATE 07/08/2016	DATE EFFECTIVE 07/13/2016	AGG. CORRECTION 0.2%

### MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE	INTERMEDIATE AGGREGATE	FINE AGGREGATE
Aggregate Type LIME	Aggregate Type	Aggregate Type
Source Name WYANDOT	Source Name	Source Name WHEELER #2
MDOT Source No. 93-31	MDOT Source No.	MDOT Source No. 59-44
MDOT Series Class 6AA	MDOT Services Class	MDOT Series Class 2NS
Specific Gravity (Bulk Dry) 2.61	Specific Gravity (Bulk Dry)	Specific Gravity (Bulk Dry) 2.62
Specific Gravity *Bulk SSD) optional 2.69	Specific Gravity *Bulk SSD) optional	Specific Gravity *Bulk SSD) optional 2.67
Absorption 1.70	Absorption	Absorption 1.40
Unit Weight (Dry Rodded) DR or 95	Unit Weight (Dry Rodded) DR or	Fineness Modulus (FM) 2.80
Unit Weight (Dry Loose) DL NA	Unit Weight (Dry Loose) DL	
Percent Crushed 100	Percent Crushed	
MDOT Freeze-Thaw (F-T) Dilation 0.011	MDOT Freeze-Thaw (F-T) Dilation	
Specific Gravity (Bulk Dry) of F-T Sample* 2.69	Specific Gravity (Bulk Dry) of F-T sample*	
Date of MDOT Freeze-Thaw Report 2014	Date of MDOT Freeze-Thaw Report	

\*If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

### CEMENTITIOUS

Cement Source / Plant	ILLINOIS CEMENT
Cement Type	I
Cement Specific Gravity	3.15
Fly Ash Source (distributor & plant)	NA
Fly Ash Class	NA
Fly Ash Specific Gravity	NA
Slag Cement Source	NA
Slag Cement Grade	NA
Slag Cement Specific Gravity	NA
Other	

### ADMIXTURES

Air Entrainment	GRT POLYCHEM SA-50
Water Reducer	GRT POLYCHEM 400NC (A)
Water Reducer	
Water Reducer	
Accelerator	
Other	
(Indicate Source & Product name with ticket code)	
<b>TYPE OF MIX</b>	
WINTER/SUMMER	
	BOTH

### MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	69	Design Slump	3" MAX
Coarse Aggregate Weight (Dry)	1776	Design Air %	6.75 +/- 1.25
Intermediate Aggregate Weight (Dry)	0	Specified Air %	6.75 +/- 1.25
Fine Aggregate Weight (Dry)	1385	PSI minimum required	3500
Portland Cement Weight	526		
Fly Ash Weight	0	Total Cementitious	526
Fly Ash Percent of Cementitious	0	Yield cu/ft	27.2
Slag Cement Weight	0		
Slag Cement Percent of Cementitious	0		
Total Water Weight	237		
Net Water Weight	237		
WC (as designed)	.45		
Air Entrainment (dosage)	1.0 OZ/CWT		
Water Reducer (dosage)	3.0 OZ/CWT (A)		
Other (dosage)	0		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF

Signature **Ted Oviatt**  
Digitally signed by: Ted Oviatt  
DN: CN = Ted Oviatt email =  
toviatt@highgradematerials.com C =  
US O = High Grade Materials OU =  
High Grade Materials  
Date: 2017.05.05 17:01:18 -0500

MCA Level II Expiration Date: 04/15/2019

Date: 07/27/2017

## JOB MIX FORMULA (JMF) CONCRETE FIELD COMMUNICATION

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CONTROL SECTION 19000	JOB NUMBER 130450	PROJECT LOCATION W Herbison Rd (Old US-27 to Turner St)	PROJECT ENGINEER Dan Armentrout - Clinton CRC
CONCRETE SUPPLIER <b>HIGH GRADE MATERIALS</b>		PLANT LOCATION Lansing, MI	PLANT NUMBER <b>HG06</b>
GRADE OF CONCRETE <b>S2-P1</b>	PSI REQUIREMENT <b>3500</b>	MIX DESIGN NUMBER <b>M.S2M</b>	INTENDED USE (S)
PRIME / SUBCONTRACTOR(S) E.T. Mackenzie Co			CONTRACTOR QC PLAN Y <input type="checkbox"/> SUBMITTED? (MDOT use only) N <input type="checkbox"/>
STANDARD SPEC DATE <b>2012</b>	QC/QA SPECIAL PROVISION DATE <b>07/08/2016</b>	DATE EFFECTIVE <b>07/13/2016</b>	AGG. CORRECTION <b>0.2%</b>

### MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	LIME	Aggregate Type		Source Name	WHEELER #2
Source Name	WYANDOT	Source Name		MDOT Source No.	59-44
MDOT Source No.	93-31	MDOT Source No.		MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Services Class		Specific Gravity (Bulk Dry)	2.62
Specific Gravity (Bulk Dry)	2.61	Specific Gravity (Bulk Dry)		Specific Gravity *Bulk SSD optional	2.67
Specific Gravity *Bulk SSD optional	2.69	Specific Gravity *Bulk SSD optional		Absorption	1.40
Absorption	1.70	Absorption		Fineness Modulus (FM)	2.80
Unit Weight (Dry Rodded) DR or	95	Unit Weight (Dry Rodded) DR or			
Unit Weight (Dry Loose) DL	NA	Unit Weight (Dry Loose) DL			
Percent Crushed	100	Percent Crushed			
MDOT Freeze-Thaw (F-T) Dilation	0.011	MDOT Freeze-Thaw (F-T) Dilation			
Specific Gravity (Bulk Dry) of F-T Sample*	2.69	Specific Gravity (Bulk Dry) of F-T sample*			
Date of MDOT Freeze-Thaw Report	2014	Date of MDOT Freeze-Thaw Report			

\*If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	ILLINOIS CEMENT	Air Entrainment	GRT POLYCHEM SA-50
Cement Type	I	Water Reducer	GRT POLYCHEM KB1200 (MR)
Cement Specific Gravity	3.15	Water Reducer	
Fly Ash Source (distributor & plant)	NA	Water Reducer	
Fly Ash Class	NA	Accelerator	
Fly Ash Specific Gravity	NA	Other	
Slag Cement Source	NA	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	NA	TYPE OF MIX WINTER/SUMMER	
Slag Cement Specific Gravity	NA	BOTH	
Other			

### MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	.69	Design Slump	6" MAX
Coarse Aggregate Weight (Dry)	1776	Design Air %	6.75 +/- 1.25
Intermediate Aggregate Weight (Dry)	0	Specified Air %	6.75 +/- 1.25
Fine Aggregate Weight (Dry)	1385	PSI minimum required	3500
Portland Cement Weight	526		
Fly Ash Weight	0	Total Cementitious	526
Fly Ash Percent of Cementitious	0	Yield cuft	27.2
Slag Cement Weight	0		
Slag Cement Percent of Cementitious	0		
Total Water Weight	237		
Net Water Weight	237		
WC (as designed)	.45		
Air Entrainment (dosage)	1.0 OZ/CWT		
Water Reducer (dosage)	5.0 OZ/CWT (MR)		
Other (dosage)	0		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF

Signature **Ted Oviatt**  
Digitally signed by: Ted Oviatt  
DN: CN = Ted Oviatt email = toviatt@highgradematerials.com C = US O = High Grade Materials OU = High Grade Materials  
Date: 2017.06.09 17:04:31 -0500

MCA Level II Expiration Date: 04/15/2019

Date: 07/27/2017

## JOB MIX FORMULA (JMF) CONCRETE FIELD COMMUNICATION

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CONTROL SECTION 19000	JOB NUMBER 130450	PROJECT LOCATION W Herbison Rd (Old US-27 to Turner St)	PROJECT ENGINEER Dan Armentrout - Clinton CRC
CONCRETE SUPPLIER HIGH GRADE MATERIALS		PLANT LOCATION Lansing, MI	PLANT NUMBER HG06
GRADE OF CONCRETE S2-P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER M.S2D	INTENDED USE (S)
PRIME / SUBCONTRACTOR(S) E. T. Mackenzie Co			CONTRACTOR QC PLAN Y <input type="checkbox"/> SUBMITTED? (MDOT use only) N <input type="checkbox"/>
STANDARD SPEC DATE 2012	QC/QA SPECIAL PROVISION DATE 07/08/2016	DATE EFFECTIVE 07/13/2016	AGG. CORRECTION 0.2%

### MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	LIME	Aggregate Type		Source Name	WHEELER #2
Source Name	WYANDOT	Source Name		MDOT Source No.	59-44
MDOT Source No.	93-31	MDOT Source No.		MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Services Class		Specific Gravity (Bulk Dry)	2.62
Specific Gravity (Bulk Dry)	2.61	Specific Gravity (Bulk Dry)		Specific Gravity *Bulk SSD) optional	2.67
Specific Gravity *Bulk SSD) optional	2.69	Specific Gravity *Bulk SSD) optional		Absorption	1.4U
Absorption	1.7U	Absorption		Fineness Modulus (FM)	2.80
Unit Weight (Dry Rodded) DR or	95	Unit Weight (Dry Rodded) DR or			
Unit Weight (Dry Loose) DL	NA	Unit Weight (Dry Loose) DL			
Percent Crushed	100	Percent Crushed			
MDOT Freeze-Thaw (F-T)Dilation	0.011	MDOT Freeze-Thaw (F-T)Dilation			
Specific Gravity (Bulk Dry) of F-T Sample*	2.69	Specific Gravity (Bulk Dry) of F-T sample*			
Date of MDOT Freeze-Thaw Report	2014	Date of MDOT Freeze-Thaw Report			

\*If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	ILLINOIS CEMENT	Air Entrainment	GRT POLYCHEM SA-50
Cement Type	I	Water Reducer	GRT POLYCHEM R (D)
Cement Specific Gravity	3.15	Water Reducer	
Fly Ash Source (distributor & plant)	NA	Water Reducer	
Fly Ash Class	NA	Accelerator	
Fly Ash Specific Gravity	NA	Other	
Slag Cement Source	NA	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	NA	<b>TYPE OF MIX</b>	
Slag Cement Specific Gravity	NA	WINTER/SUMMER	
Other			BOTH

### MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	.69	Design Slump	3" MAX
Coarse Aggregate Weight (Dry)	1776	Design Air %	6.75 +/- 1.25
Intermediate Aggregate Weight (Dry)	0	Specified Air %	6.75 +/- 1.25
Fine Aggregate Weight (Dry)	1385	PSI minimum required	3500
Portland Cement Weight	526		
Fly Ash Weight	0	Total Cementitious	526
Fly Ash Percent of Cementitious	0	Yield cu/ft	27.2
Slag Cement Weight	0		
Slag Cement Percent of Cementitious	0		
Total Water Weight	237		
Net Water Weight	237		
WC (as designed)	.45		
Air Entrainment (dosage)	1.0 OZ/CWT		
Water Reducer (dosage)	3.0 OZ/CWT (D)		
Other (dosage)	0		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF

Signature **Ted Oviatt**  
Digitally signed by: Ted Oviatt  
DN: CN = Ted Oviatt email = toviatt@highgradematerials.com C = US  
O = High Grade Materials OU = High Grade Materials  
Date: 2017.08.03 17:01:45 -0500

MCA Level II Expiration Date: 04/15/2019

Date: 07/27/2017

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CONCRETE SUPPLIER HIGH GRADE MATERIALS		PLANT LOCATION Lansing, MI	PLANT NUMBER HG06
GRADE OF CONCRETE S2-P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER M.S2MD	INTENDED USE (S) CONTRACTOR QC PLAN Y <input type="checkbox"/> SUBMITTED? (MDOT use only) N <input type="checkbox"/>
PRIME / SUBCONTRACTOR(S) E.T. Mackenzie Co			
STANDARD SPEC DATE 2012	QC/QA SPECIAL PROVISION DATE 07/08/2016	DATE EFFECTIVE 07/13/2016	AGG. CORRECTION 0.2%

### MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	LIME	Aggregate Type		Source Name	WHEELER #2
Source Name	WYANDOT	Source Name		MDOT Source No.	59-44
MDOT Source No.	93-31	MDOT Source No.		MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Services Class		Specific Gravity (Bulk Dry)	2.62
Specific Gravity (Bulk Dry)	2.61	Specific Gravity (Bulk Dry)		Specific Gravity *Bulk SSD) optional	2.67
Specific Gravity *Bulk SSD) optional	2.69	Specific Gravity *Bulk SSD) optional		Absorption	1.40
Absorption	1.70	Absorption		Fineness Modulus (FM)	2.80
Unit Weight (Dry Rodded) DR or	95	Unit Weight (Dry Rodded) DR or			
Unit Weight (Dry Loose) DL	NA	Unit Weight (Dry Loose) DL			
Percent Crushed	100	Percent Crushed			
MDOT Freeze-Thaw (F-T)Dilation	0.011	MDOT Freeze-Thaw (F-T)Dilation			
Specific Gravity (Bulk Dry) of F-T Sample*	2.69	Specific Gravity (Bulk Dry) of F-T sample*			
Date of MDOT Freeze-Thaw Report	2014	Date of MDOT Freeze-Thaw Report			

\*If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	ILLINOIS CEMENT	Air Entrainment	GRT POLYCHEM SA-50
Cement Type	I	Water Reducer	GRT POLYCHEM KB1200 (MR)
Cement Specific Gravity	3.15	Water Reducer	GRT POLYCHEM R (D)
Fly Ash Source (distributor & plant)	NA	Water Reducer	
Fly Ash Class	NA	Accelerator	
Fly Ash Specific Gravity	NA	Other	
Slag Cement Source	NA	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	NA	TYPE OF MIX WINTER/SUMMER	
Slag Cement Specific Gravity	NA	BOTH	
Other			

### MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	69	Design Slump	6" MAX
Coarse Aggregate Weight (Dry)	1776	Design Air %	6.75 +/- 1.25
Intermediate Aggregate Weight (Dry)	0	Specified Air %	6.75 +/- 1.25
Fine Aggregate Weight (Dry)	1385	PSI minimum required	3500
Portland Cement Weight	526		
Fly Ash Weight	0	Total Cementitious	526
Fly Ash Percent of Cementitious	0	Yield cu/ft	27.2
Slag Cement Weight	0		
Slag Cement Percent of Cementitious	0		
Total Water Weight	237		
Net Water Weight	237		
WC (as designed)	.45		
Air Entrainment (dosage)	1.0 OZ/CWT		
Water Reducer (dosage)	5.0 OZ/CWT (MR)		
Other (dosage)	3.0 OZ/CWT (D)		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF

Digitally signed by: Ted Oviatt  
DN: CN = Ted Oviatt email = toviatt@highgradematerials.com C = US O = High Grade Materials OU = High Grade Materials  
Date: 2017.08.03 17:02:00 -05:00

Signature

Ted Oviatt

MCA Level II Expiration Date: 04/15/2019

Date: 07/27/2017



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CONCRETE SUPPLIER HIGH GRADE MATERIALS		PLANT LOCATION Lansing, MI	PLANT NUMBER HG06
GRADE OF CONCRETE S2-P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER M.S2WSF	INTENDED USE (S)  CONTRACTOR QC PLAN Y <input type="checkbox"/> SUBMITTED? (MDOT use only) N <input type="checkbox"/>
PRIME / SUBCONTRACTOR(S) E. T. Mackenzie Co			
STANDARD SPEC DATE 2012	QC/QA SPECIAL PROVISION DATE 07/08/2016	DATE EFFECTIVE 07/13/2016	AGG. CORRECTION 0.2%

### MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	LIME	Aggregate Type		Source Name	WHEELER #2
Source Name	WYANDOT	Source Name		Source Name	WHEELER #2
MDOT Source No.	93-31	MDOT Source No.		MDOT Source No.	59-44
MDOT Series Class	6AA	MDOT Services Class		MDOT Series Class	2NS
Specific Gravity (Bulk Dry)	2.61	Specific Gravity (Bulk Dry)		Specific Gravity (Bulk Dry)	2.62
Specific Gravity *Bulk SSD) optional	2.69	Specific Gravity *Bulk SSD) optional		Specific Gravity *Bulk SSD) optional	2.67
Absorption	1.70	Absorption		Absorption	1.40
Unit Weight (Dry Rodded) DR or	95	Unit Weight (Dry Rodded) DR or		Fineness Modulus (FM)	2.80
Unit Weight (Dry Loose) DL	NA	Unit Weight (Dry Loose) DL			
Percent Crushed	100	Percent Crushed			
MDOT Freeze-Thaw (F-T) Dilation	0.011	MDOT Freeze-Thaw (F-T) Dilation			
Specific Gravity (Bulk Dry) of F-T Sample*	2.69	Specific Gravity (Bulk Dry) of F-T sample*			
Date of MDOT Freeze-Thaw Report	2014	Date of MDOT Freeze-Thaw Report			

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### CEMENTITIOUS

Cement Source / Plant	ILLINOIS CEMENT
Cement Type	I
Cement Specific Gravity	3.15
Fly Ash Source (distributor & plant)	NA
Fly Ash Class	NA
Fly Ash Specific Gravity	NA
Slag Cement Source	NA
Slag Cement Grade	NA
Slag Cement Specific Gravity	NA
Other	

### ADMIXTURES

Air Entrainment	GRT POLYCHEM SA-50
Water Reducer	GRT POLYCHEM 400NC (A)
Water Reducer	
Water Reducer	
Accelerator	
Other	
(Indicate Source & Product name with ticket code)	
<b>TYPE OF MIX</b>	
WINTER/SUMMER	
	BOTH

### MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	.69	Design Slump	3" MAX
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Fly Ash Percent of Cementitious	0	Yield cu/ft	27.2
Slag Cement Weight	0		
Slag Cement Percent of Cementitious	0		
Total Water Weight	237		
Net Water Weight	237		
WC (as designed)	.45		
Air Entrainment (dosage)	1.0 OZ/CWT		
Water Reducer (dosage)	3.0 OZ/CWT (A)		
Other (dosage)	0		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF

Digitally signed by: Ted Oviatt  
DN: CN = Ted Oviatt email =  
toviatt@highgradematerials.com C =  
US O = High Grade Materials OU =  
High Grade Materials  
Date: 2017.05.03 17:02:14 -0500

MCA Level II Expiration Date: 04/15/2019

Date: 07/27/2017

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CONCRETE SUPPLIER <b>HIGH GRADE MATERIALS</b>		PLANT LOCATION Lansing, MI	PLANT NUMBER HG06
GRADE OF CONCRETE S2-P1	PSI REQUIREMENT 3500	MIX DESIGN NUMBER M.S2DSF	INTENDED USE (S) CONTRACTOR QC PLAN Y <input type="checkbox"/> SUBMITTED? (MDOT use only) N <input type="checkbox"/>
PRIME / SUBCONTRACTOR(S) E. T. Mackenzie Co			
STANDARD SPEC DATE 2012	QC/QA SPECIAL PROVISION DATE 07/08/2016	DATE EFFECTIVE 07/13/2016	AGG. CORRECTION 0.2%

### MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	LIME	Aggregate Type		Source Name	WHEELER #2
Source Name	WYANDOT	Source Name		Source Name	WHEELER #2
MDOT Source No.	93-31	MDOT Source No.		MDOT Source No.	59-44
MDOT Series Class	6AA	MDOT Services Class		MDOT Series Class	2NS
Specific Gravity (Bulk Dry)	2.61	Specific Gravity (Bulk Dry)		Specific Gravity (Bulk Dry)	2.62
Specific Gravity *Bulk SSD) optional	2.69	Specific Gravity *Bulk SSD) optional		Specific Gravity *Bulk SSD) optional	2.67
Absorption	1.70	Absorption		Absorption	1.40
Unit Weight (Dry Rodded) DR or	95	Unit Weight (Dry Rodded) DR or		Fineness Modulus (FM)	2.80
Unit Weight (Dry Loose) DL	NA	Unit Weight (Dry Loose) DL			
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Specific Gravity (Bulk Dry) of F-T Sample*	2.69	Specific Gravity (Bulk Dry) of F-T sample*			
Date of MDOT Freeze-Thaw Report	2014	Date of MDOT Freeze-Thaw Report			

\*If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

#### CEMENTITIOUS

Cement Source / Plant	ILLINOIS CEMENT
Cement Type	I
Cement Specific Gravity	3.15
Fly Ash Source (distributor & plant)	NA
Fly Ash Class	NA
Fly Ash Specific Gravity	NA
Slag Cement Source	NA
Slag Cement Grade	NA
Slag Cement Specific Gravity	NA
Other	

#### ADMIXTURES

Air Entrainment	GRT POLYCHEM SA-50
Water Reducer	GRT POLYCHEM R (D)
Water Reducer	
Water Reducer	
Accelerator	
Other	
(Indicate Source & Product name with ticket code)	
TYPE OF MIX WINTER/SUMMER	
	BOTH

### MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	.69	Design Slump	3" MAX
Coarse Aggregate Weight (Dry)	1776	Design Air %	6.75 +/- 1.25
Intermediate Aggregate Weight (Dry)	0	Specified Air %	6.75 +/- 1.25
Fine Aggregate Weight (Dry)	1385	PSI minimum required	3500
Portland Cement Weight	526		
Fly Ash Weight	0	Total Cementitious	526
Fly Ash Percent of Cementitious	0	Yield cu/ft	27.2
Slag Cement Weight	0		
Slag Cement Percent of Cementitious	0		
Total Water Weight	237		
Net Water Weight	237		
WC (as designed)	.45		
Air Entrainer (dosage)	1.0 OZ/CWT		
Water Reducer (dosage)	3.0 OZ/CWT (D)		
Other (dosage)	0		

I certify that all applicable standard test methods have been followed verifying the mix design and JMF

Signature **Ted Oviatt**  
Digitally signed by: Ted Oviatt  
 DN: CN = Ted Oviatt email =  
 toviatt@highgradematerials.com C = US  
 O = High Grade Materials OU = High  
 Grade Materials  
 Date: 2017.08.03 17:02:27 -05'00'

MCA Level II Expiration Date: 04/15/2019

Date: 07/27/2017

**EXHIBIT 2**  
**PROFESSIONAL INFORMATION**





Ann Arbor Division - E.T. MacKenzie Company

o (734) 761.5050

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c (734) 216.0995

jniemiec@mackenzieco.com

# John W. Niemiec

## Division Manager / Project Manager

With nearly 20 years' experience, John directs our Ann Arbor Division's operations and estimates, bids and manages residential, commercial and industrial projects.

### EDUCATION

BS, Civil Engineering, Civil Concentration  
Lawrence Technological University  
May 1998

### ADDITIONAL QUALIFICATIONS

- Member, Chi Epsilon Honor Society, Lawrence Tech Chapter
- Captain, AISC Lawrence Tech Steel Bridge Team
- Passed Part 1, State of Michigan Fundamentals of Engineering Exam
- Certified Storm Water Operator
- Highly proficient in Agtek Software Suite, Bid2Win Estimating Software and all MS Office Software applications.

### PROFESSIONAL EXPERIENCE

#### **E.T. MacKenzie Company**

##### **Division Manager**

Dec 2005 – Present

- Responsibilities include managing Ann Arbor Division and estimating, site planning, equipment and labor coordination, procurement of materials, contracting with subcontractors, scheduling and coordinating of subcontractors, coordination with local municipalities, site safety, creating and maintaining field documents, inspections.

##### **Project Manager / Project Estimator**

Sept 1998 - Dec 2005

#### **Bartlett Nuclear**

Fermi1 Nuclear Power Plant

##### **Radwaste Shipping Engineer**

May 1998 – Sept 1998

#### **Detroit Edison**

Fermi1 Nuclear Power Plant

##### **Radwaste Shipping Technician**

May 1994 – Dec 1997



Ann Arbor Division - E.T. MacKenzie Company

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# Andrew LaHaie

## Project Manager / Estimator

Estimating and managing site development and underground utility projects and overseeing day-to-day operations at project site.

### PROFESSIONAL EXPERIENCE

#### **E.T. MacKenzie Company**

#### **Estimator / Project Manager**

2020

- Responsible for bidding and negotiating contracts, project management and coordination of projects in the areas of site-work, earthwork, mass grading, and site utilities including sanitary sewers, storm sewers, watermain and roads.

#### **Merlo Construction Co., Inc.**

#### **Project Manager / Estimator**

2017 - 2020

- Project manager for the entire project lifecycle, including bidding and estimation for concrete foundations, earthwork and utility contracts.

#### **6K Construction Co., Inc.**

#### **Project Manager / Estimator**

2014 - 2017

#### **Mannik Smith Group**

#### **Project Geologist / Environmental Consultant**

2008 - 2014

### EDUCATION

Bachelor of Science in Hydrogeology

**Eastern Michigan University**

2008

### ADDITIONAL QUALIFICATIONS

- Construction Management
- Field Management
- Certified Storm Water Operator #C-21499
- Bid2Win
- Agtek Earthworks
- Planswift
- OnScreen TakeOff



Ann Arbor Division - E.T. MacKenzie Company

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aarendt@mackenzieco.com

## Art Arendt

### Project Manager

Project manager overseeing commercial, residential, and industrial site development and underground utility projects.

## PROFESSIONAL EXPERIENCE

### E.T. MacKenzie Company

#### Project Manager

2018

- Oversee and coordinate construction projects including underground, road, and mass grading projects.

### RIPA and Associates, Tampa FL

#### Project Manager

2015 - 2018

- Project manager on multiple projects of varying complexity and scope. Often relied upon to serve as PM and sole superintendent from start to completion.

#### Project Engineer

2011 - 2013

- Tracked jobsite quantities for billing purposes, and reviewed and submitted documents and RFI's to the necessary entities.

#### Skilled Laborer

2009 - 2011

- Worked on a pipe crew; learned valuable hands-on experience.

### Pepper Construction, Tampa FL

#### Assistant Project Manager

2014 - 2015

- Assisted project managers and superintendents on multiple DOT projects. Learned requirements and needs related to DOT roadway construction.

## EDUCATION

Bachelor Degree

Major in Marketing, Minor in Management

Kent State University

## CERTIFICATIONS

- Certified Storm Water Operator, License #C-20288
- 30-Hour OSHA, Cert #36-601451774



Ann Arbor Division - E.T. MacKenzie Company

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# Dennis J. McNamara

Foreman

Managing large site development projects, including coordination of subcontractors and scheduling.

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## PROFESSIONAL EXPERIENCE

### **E.T. MacKenzie Company**

#### **Superintendent, Ann Arbor Division**

1996 - Present

- Supervisor for site development. Responsibilities include construction site layout and planning, equipment and labor coordination, procurement of materials, contracting with subcontractors, scheduling and coordinating of subcontractors, coordination with local municipalities, site safety, creating and maintaining field documents, inspections and coordination with customers to assure project meets or exceed needs and expectations.

### **J&D Construction**

#### **Superintendent / Field Supervisor**

1989 - 1996

### **Den-Ron, Inc.**

#### **Part Owner**

1981 - 1989

### **Delta Construction**

#### **Field Supervisor**

1978 - 1981

### **American Excavators**

#### **Heavy Equipment Operator**

1975 - 1978

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## ADDITIONAL QUALIFICATIONS

- Confined Space Training
- OSHA & MIOSHA Training
- CPR & First Aid Certificate
- Competent Person Excavation Training

## EDUCATION

### **Monsignor Orafferty (Catholic Central)**

#### **High School**

Diploma

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Ann Arbor Division - E.T. MacKenzie Company

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dkempheretmc@gmail.com

# Daryl B. Kempfer

## Foreman

Managing large site development projects, including coordination of subcontractors and scheduling.

## PROFESSIONAL EXPERIENCE

### E.T. MacKenzie Company

#### Foreman

2007 - Present

- Supervisor for site development. Responsibilities include construction site layout and planning, equipment and labor coordination, procurement of materials, contracting with subcontractors, scheduling and coordinating of subcontractors, coordination with local municipalities, site safety, creating and maintaining field documents, inspections and coordination with customers to assure project meets or exceed needs and expectations.

#### Equipment Operator

1998 - 2007

### G & W Construction

#### Equipment Operator

1996 - 1998

### Chie Contracting

#### Equipment Operator

1994 - 1995

### L & K Construction

#### Labor/Equipment Operator

1991 - 1994

## ADDITIONAL QUALIFICATIONS

- MI Storm Water Operator License #C-18363
- OSHA & MIOSHA Training
- CPR & First Aid Certificate

## EDUCATION

### Clinton High School

Diploma



Ann Arbor Division - E.T. MacKenzie Company

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rcurbyetmc@gmail.com

## Russell J. Curby

### Foreman

Managing large site development projects, including coordination of subcontractors and scheduling.

### PROFESSIONAL EXPERIENCE

#### E.T. MacKenzie Company

##### Foreman

1994 - Present

- Supervisor for site development. Responsibilities include construction site layout and planning, equipment and labor coordination, procurement of materials, contracting with subcontractors, scheduling and coordinating of subcontractors, coordination with local municipalities, site safety, creating and maintaining field documents, inspections and coordination with customers to assure project meets or exceed needs and expectations.

##### Pipe Layer

1991 - 1994

#### D.N. Higgins Company

##### Pipe Layer

1991

#### Saline Construction

##### Pipe Layer/Equipment Operator/Truck Driver

1984 - 1991

#### United States Marine Corp.

1980 - 1984

### ADDITIONAL QUALIFICATIONS

- MI Storm Water Operator License #C-01705
- 40-Hour OSHA Hazwoper
- OSHA & MIOSHA Training
- Lead, Cadmium & Chromium Training
- Confined Space Entry Training
- CPR & First Aid Certificate
- PipePatch Factory Trained Installer

### EDUCATION

Construction Management

#### Eastern Michigan University

1984 - 1990

Industrial Technology

#### Central Michigan University

1976 - 1980

#### Pioneer High School

Diploma



Ann Arbor Division - E.T. MacKenzie Company

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dkipke@mackenzieco.com

# Duston Kipke

## Project Manager / Estimator

Estimating and managing site development and underground utility projects and overseeing day-to-day operations at project site.

### PROFESSIONAL EXPERIENCE

#### E.T. MacKenzie Company - Ann Arbor Division

##### Estimator / Project Manager

2014 - Present

- Responsible for bidding and negotiating contracts, project management and coordination of projects in the areas of site-work, earthwork, mass grading, and site utilities including sanitary sewers, storm sewers, watermain and roads.

#### Michigan Pipe & Valve

##### Estimator

2012 - 2014

#### E.T. MacKenzie Company - North Carolina Division

##### Entry Level Estimator / Project Manager

2009 - 2011

#### Slusarski Excavating and Paving

##### Internship

Summer 2008

#### Slusarski Excavating and Paving

##### Laborer / Equipment Operator

2002 - 2007

### EDUCATION

Bachelor of Science

Construction Management

**Eastern Michigan University**

2009

### ADDITIONAL QUALIFICATIONS

- Construction Management
- Field Management
- Certified Storm Water Operator #C-18163
- Bid2Win
- OSHA Confined Space Standards 2016
- AGTEK

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**EXHIBIT 3**  
**E.T. MACKENZIE COMPANY EQUIPMENT SCHEDULE**



**Category: 10- 1 Pickups & Cars**

10001	2019 Chevy Silverado LS2500D
10003	2019 Chevrolet Silverado 4WD Ext Cab
10004	2015 Chevy Suburban
10005	2018 Jeep Grand Cherokee
10007	2015 Chevy K1500 Pickup
10008	2013 Chevy 2500HD
10009	2006 GMC Yukon Denali
10011	2015 Chevy Silverado 2500 HD
10012	2016 GMC Sierra LT Crew Cab
10014	2015 Chevy K2500 Pickup
10015	2017 Toyota Tundra
10016	2006 Chevy 3500 Crew Cab Truck
10018	2006 Chevy 1500 4x4 Pickup
10054	2002 Ford F250 XLT Super Duty, 4x4
10057	2013 Chevy Silverado K2500
10058	2013 Chevy Silverado
10060	2015 GMC Sierra 2500 Pickup
10061	2014 Chevy Silverado 1500
10063	2011 Chevy 2500 4x4 Crew Cab Silverado
10066	2015 Chevy 3500 Crew Cab Pickup
10067	2017 Ford F250 Crew Cab Pickup
10068	2015 Chevy 1500 LT
10070	2005 Chevy 1500 4x4 Pickup
10071	2015 Chevy K1500 Silverado
10072	2015 Chevy 3500LT Crew Cab
10073	2015 Chevy Colorado
10074	2017 Chevy Silverado 2500
10075	2015 Chevy 2500 HD
10079	2015 Chevy Silverado LT 2500, Brown
10080	2016 Chevy Silverado LT
10081	2015 Chevy Silverado LT 2500
10082	2015 Chevy 2500
10083	2018 Chevy K1500 Pickup
10085	2016 Ford F-150 Supercrew, Black
10088	2015 Chevy K2500
10089	2015 Ford F150
10090	2016 GMC Sierra 2500
10091	2018 Chevy Traverse
10092	2015 Toyota Tundra
10093	2015 Chevy 1500 Silverado
10094	2015 Chevy K2500 Pickup
10096	2015 BMW X5 LUX
10097	2018 Toyota 4-Runner
10101	2013 GMC Yukon
10104	2005 Chevy 2500 Silverado 4x4
10105	2014 Jeep Grand Cherokee
10106	2003 Chevy 2500H 4x4 Pickup
10108	2008 Chevy 2500 4WD Ext Cab
10109	2013 Chevy Silverado 4X4 1500
10110	2006 Ford 250 Ext cab
10111	2015 Chevy K1500, 4x4 Silverado
10114	2009 Chevy Silverado 1500
10115	2014 Chevy Silverado 1500 4x4
10116	2017 Lexus LX570
10118	2014 Jeep Grand Cherokee Laredo
10119	2014 Jeep Grand Cherokee Laredo
10121	2015 Ford Explorer XF01F0
10123	2014 Jeep Grand Cherokee LTD
10130	2015 Ford F350, XLT Crew
10133	2018 Jeep Laredo 4WD

## EM Equipment List

## Equipment and Components

10134 2018 Ford F-150 4x4 Crew Cab  
 10145 2007 Starcraft Bus  
 10186 Eric Horstman's Personal Pickup

**Category: 10- 2 Truck-Tractors**

10020 2018 Freightliner 122SD  
 10029 2006 Freightliner Tractor  
 10036 2017 Freightliner Tractor  
 10037 2006 Freightliner Tractor  
 10038 2014 Freightliner Tractor  
 10040 1992 Kenworth Tractor T800  
 10042 2000 Kenworth Tractor T800  
 10043 2014 Freightliner Tractor  
 10044 2014 Freightliner Tractor  
 10045 2014 Freightliner Tractor  
 10046 2014 Freightliner Tractor  
 10047 2014 Freightliner Tractor  
 10051 2016 Freightliner Tractor  
 10052 2016 Freightliner Tractor  
 10053 2016 Freightliner Tractor  
 10055 2016 Freightliner Tractor  
 10059 2015 Freightliner Tractor

**Category: 10- 5 Dump Trucks - 5 Yard**

10050 1986 GMC Brigadier Single Axle  
 10197 1983 Ford 8000 Single Axle Dump  
 10198 1983 Ford 8000 Single Axle Dump  
 10199 1988 Chevy C70 Single Axle Dump

**Category: 10- 6 Dump Trucks - Tandem**

10021 2018 Freightliner Tri-Axle Dump  
 10007 1999 Kenworth T-800 Tri-axle Dump  
 1000 2003 Kenworth T800 Tri-Axle  
 10049 2015 Freightliner Tractor Tri-Axle

**Category: 10- 7 Dump Truck - Quad Axle**

10039 2014 Freightliner SD122 Quad Dump  
 12371 Sokkia level B-20 32X

**Category: 10- 8 Boom - Salt - Water Truck**

176 2001 Houle Water Tank EL54445  
 183 PortaTank PT3000 3,140 gallon  
 10026 1998 International 4000 gal water truck  
 10041 1997 Freightliner 120 Water Truck  
 10164 1977 Ford 8000 Boom Truck 10 Ton  
 10165 1989 Peterbilt TriAxle Boom Tr  
 10181 1989 Kenworth T900 Water Truck 4750 gal  
 10185 1984 White water truck  
 10952 Snorkel Articulated Boom Lift

**Category: 10- 9 Stake & Flatbed Truck**

10017 2004 Ford F250 4x4  
 10023 2002 Kenworth T800 Dozer Truck  
 10048 2003 Ford F-550 Flat Bed  
 10095 2016 Ford F550  
 10112 2000 GMC Sierra Pickup Flatbed  
 10131 1996 Ford L9000-Dozer Truck  
 10132 1996 Ford L9000 Dozer Truck  
 10146 2009 Chevy 3500 Flat Bed  
 10157 2011 Ford F550 Dump/Stake Truck  
 10150 1999 Ford F450 Stake Truck  
 10150 2003 Ford F350 Flatbed 4x4  
 10170 2003 Ford F350 Flatbed 4x4  
 10171 2000 Ford F650 Flatbed  
 10172 1974 Diamond Rio Flatbed w/ water tank  
 10173 1984 GMC C-30 Flatbed  
 10178 2016 Ford F550 Flat Bed Truck

## EM Equipment List

## Equipment and Components

10179	2016 Ford F550 Flat Bed Truck
10194	2002 Chevy 3500 Flatbed
<b>Category: 10- 10 Sweeper Truck</b>	
602	FMC Sweeper
603	1986 Self-propelled Sweeper
10600	1992 Mobil M9A Sweeper
10601	1986 Mobil M8 Sweeper
10604	2003 Freightliner Sweeper Truck
10605	Laymor SM300 8' Sweeper
10606	Laymor SM300 8' Sweeper
10607	2008 Elgin Whirlwind Sweeper Truck
<b>Category: 10- 11 Lube &amp; Cube Trucks</b>	
10186	1983 International Lube Truck
10187	1987 Intertational Cube Van
10188	1987 Interntational Cube Van
10189	2001 International 4700 Van Tr
<b>Category: 10- 12 Vacuum Truck</b>	
10127	1996 Chevrolet Kodiak Vac Truck
<b>Category: 10- 14 Off Road Dump Truck</b>	
2221	Rental Off Road Truck
10660	2014 Cat 730 Off Road Truck
10661	2014 Cat 730 Off Road Truck
10665	2018 Cat 745 Off Road Truck
10666	2018 Cat 745 Off Road Truck
10667	2018 Cat 745 Off Road Truck
<b>Category: 10- 15 Truck-Tractor &amp; Lowboy</b>	
11900	1989 Burkett Lowboy
11901	1989 Burkett Lowboy JoeDog
11902	1989 TrailKing 50 Ton Lowboy
11903	1995 TrailKing 50 Ton Lowboy w/4th axle
11904	2003 TrailKing 50 Ton Lowboy
11906	1995 TrailKing JoeDog
<b>Category: 10- 16 Tandem &amp; Lowboy</b>	
11910	BNM 18' Tandem Flatbed Trailer
<b>Category: 10- 18 Utility Truck</b>	
10013	2001 Ford F350 Flatbed 4x4 Truck
10099	2002 Ford F350XL V8 Service Truck
10100	2004 Ford F350 Mechanics Truck
10153	2010 Sterling Mechanics Truck
10154	2008 International 4300 Service Truck
10155	2008 Ford F-750 Service Truck
10161	1999 Ford F550 Service Truck
10162	2003 Ford F550 Service Truck Flat Bed
10174	2007 Freightliner chassis Service Truck
10175	2000 Chevy C-6500 Mechanics Truck
10191	1985 Ford 8000 Drill Rig tande
10192	1994 Ford F700 Mechanics Truck
10193	Trailer Mounted Drill Rig
<b>Category: 10- 19 Fuel Truck</b>	
10140	1000 Gallon Fuel Wagon (Red)
10141	1000 Gallon Fuel Wagon (green)
10142	1991 Internat'l 4700 Fuel Truck
10144	1987 Ford Fuel Truck
<b>Category: 10- 20 Trailer - Lead</b>	
11954	2007 Trail King - Lead 24' (aluminum)
11956	2019 East Lead (Steel)
11958	2001 East Lead (steel)
11964	2003 East Lead (Steel)
11968	1990 Fruehauf Lead 24' (aluminum)
11972	2000 Fruehauf Lead (steel)
11974	2018 East Lead Dump (Steel)

## EM Equipment List

## Equipment and Components

11976	1999 Fruehauf Lead (Contracting Welding Steel Tub)
11980	2018 Trail King Trailer TKT60LP
11982	2003 East Lead (steel)
11	1998 Freehauf Lead (aluminum)
11986	1999 East Lead (aluminum)
11988	2017 East Lead (Steel)
11990	1989 Fruehauf Lead (steel)
11994	2000 Fruehauf Lead
11998	1991 Fruehauf 24' Lead (steel)

**Category: 10- 21 Trailer - Pup**

11955	2007 Trail King Pup 18' (aluminum)
11957	2019 East Pup (Steel)
11959	2001 East Pup (Steel)
11961	2000 Benson Pup (aluminum)
11963	2001 Benson Trailer
11965	2003 East Pup (steel)
11967	1999 Fruehauf Pup (steel)
11969	1998 Fruehauf Pup (aluminum)
11973	2000 Fruehauf Pup (steel)
11975	1997 East Pup (aluminum)
11977	1999 Fruehauf Pup (Contracting Welding Steel)
11978	2017 East Pup (Steel)
11979	1989 Fruehauf Pup w/East Tub(steel)
11983	2003 East Pup (steel)
11985	1998 Fruehauf Pup (aluminum)
11987	1999 East Pup (Aluminum)
11989	2017 East Pup (Steel)
11991	1989 Fruehauf Pup w/CW (steel)
11992	1989 Fruehauf Pup (steel)
11	2000 Fruehauf Pup

**Category: 10- 22 Trailer - Lowboy & Flatbed**

1950	1972 Dorsey 40ft Flatbed Trail
1951	Fruehauf 40ft Flatbed Trailer
1952	1994 Dorsey 45ft Flatbed Trail
11907	1974 Dorsey Drop Deck Trailer
11908	2005 Dakota 53' Hydraulic Drop Deck
11909	2005 BNM 20' tag trailer
11946	2005 Manac 8-axle Trailer with sides
11947	1992 Fruehauf 3 axle, Flatbed
11948	1971 Dorsey Dropdeck 45' Trailer
11949	1973 Daco 8-axle Trailer
11953	1994 Dorsey 45' Flatbed w/Spread Lift Axle
11960	2014 Trail King LowboyTrailer
11962	Trail King Flip Axle - Air Ride

**Category: 10- 23 Tool Trailer**

1801	1987 Dorsey 53ft Van
1805	1977 Dorsey Van
1807	1978 Budd Van
1814	Van Trailer
1815	Pines 45' Van Trailer
1816	1971 Dorsey 45' Tool Trailer
1819	1979 Trim Trailer
11800	1994 Great Dane 45ft Van
11803	1982 Fruehauf 45ft Van
11804	1977 Dorsey 45' Van
11	1977 Theurer 45' Van
11812	1977 Dorsey 42ft Van
11813	1979 Timte 48' Van
11818	"Sparty" 1982 Monon Van Trailer 53' or 45'
11822	1994 Stoughton Van Trailer - White
11942	2017 Wells Cargo Trailer

11999	2018 Wells Cargo 7x16 2-axle Trailer
<b>Category: 10- 24 Misc. Trailer/Finn Hydroseeder</b>	
726	1986 Ford L8000 Tac Truck
1820	Delcor 45' house trailer
1833	2005 Wells Cargo Trailer
1834	2002 United Trailer
1838	2001 Interstate Cargo Trailer
1911	1998 Talbert 2-Axle Trailer
1913	1997 Talbert 2Axle Trailer
1917	2001 Pequea 2-Axle Trailer
1920	2005 Assembled Saw Trailer
1924	2003 Assembled Trailer
1925	1994 Utility Trailer
1926	Water Separator Trailer
1927	2005 Assembled Trailer
1930	2003 Assembled 6 x 8' Trailer
1932	2000 Utility Trailer
1939	1995 BNM Trailer
1941	Office Trailer 45ft
10180	Demco Water Trailer 2" Pump
10704	2005 Finn T90TII Hydroseeder
10707	2005 Finn Hydroseeder
11594	Trailstar single axle trailer *EXEMPT*
11817	Sure-Trac Trailer
11831	2005 Wells Cargo Trailer
11832	2005 Wells Cargo Trailer
11835	2004 Cargo Mate 6ft x 13 ft
11836	2014 Liberty 16' Trailer
11841	2005 Wells Cargo Trailer owned by SSI
11905	1981 Dorsy 43' Van - ClarkRd Power #11842
11912	2000 Entyre 3Axle Trailer
11914	1999 Leavitt Tandem axle 18'
11915	Ditch Witch Trailer
11917	2001 Pequea 2-Axle Trailer
11918	2003 Talbert 10Ton 2-Axle Trai
11919	2005 Pequea 612t Trailer
11921	2010 American 16' tandem axle trailer
11923	1993 Paris Flatbed Trailer
11928	2005 Boat Trailer
11929	2002 Cherne Air Test Trailer
11931	1985 Assembled Utility Trailer
11933	2001 Assembled Trailer
11936	Assembled Tandem Trailer
11937	1994 Tandem Axle Saw Trailer
11938	1997 Utility Trailer
11940	2002 MFE Office Trailer
11943	2006 Assembled Welder Trailer
11944	Test Trailer for Pit Aggregates
11945	2015 Sure-Trac Dump Trailer

**Category: 11- Non-plated Vehicles**

10124	1988 International Attenuator Truck
10125	1988 International Attenuator Truck
10128	1993 International Attenuator Truck
10129	1994 International Attenuator Truck

**Category: 20- 1 390, 385 & 375 Cat Excavator**

10243	2016 CAT 390 FL Excavator
10275	1995 Cat 375L Excavator
10276	2000 Cat 375L Excavator

**Category: 20- 3 350 Cat Excavator**

10250	1997 Cat 350L Excavator *EXEMPT*
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**Category: 20- 4 336, 345 & 349 Cat Excavator**

## EM Equipment List

## Equipment and Components

2213	Rental 335,336 & 349 Excavator
10236	2017 Cat 335FL Excavator
10227	2013 Cat 336EL Excavator
1C	2014 Cat 336E Excavator
10239	2014 Cat 336E Excavator
10240	2015 Cat 336FL Excavator
10241	2015 Cat 336FL Excavator
10242	2015 Cat 336FL Excavator
10244	2018 Cat 336 FL PQ Excavator
10245	2019 Cat 335FL CRP+ Excavator
10246	2019 Cat 336
10247	2017 Cat 349FL Excavator
10249	2015 Cat 349FL Excavator
<b>Category: 20- 6 320-329 Cat Excavator</b>	
2214	Rental 320-329 Excavators
10225	2013 Cat 321D Excavator
<b>Category: 20- 7 314 - 315 Excavator</b>	
2215	Rental 311-318 Excavators
10205	2008 Cat 314CL Excavator
10206	2015 Cat 314ELCR Excavator
10207	2017 CAT 315 FLCR Excavator
<b>Category: 20- 8 Cat 215 Excavator</b>	
10214	1986 Cat 215BLC Excavator
10215	1986 Cat 215BLC Excavator
10216	1988 Cat 235C Excavator *EXEMPT*
<b>Category: 20- 9 300-308 Excavator</b>	
2216	Rental 300-308 Excavators
<b>Category: 20- 11 325 Cat Excavator</b>	
10224	2018 Cat 325F
1C	2014 Cat 329EL Excavator
10227	2000 Cat 325BL Excavator
10228	2017 CAT 325FLCR Excavator
<b>Category: 25- 1 Ditch Witch Trencher</b>	
10297	1992 Ditch Witch 7520DD Trencher
<b>Category: 25- 2 Conveyor</b>	
10254	McCloskey R230-2DT Tracked Scalper/Screenner *TAX EXEMPT*
10255	36" x 50' Superior Conveyor *EXEMPT* portable
10256	36" x 50' Superior Conveyor *EXEMPT* stackable w10257
10257	36" x 40' Superior Conveyor *EXEMPT* stackable w10256
10258	36" x 60' Conveyor *EXEMPT* w/scales
10260	Wash-Screen Plant Repairs-AP USE ONLY
10262	24" x 60' Overland Conveyor *TAX EXEMPT*
10263	24" X 80' Overland Conveyor *TAX EXEMPT*
10264	18" x 20' Overland Conveyor *TAX EXEMPT*
10267	24' x 40" TESAB Hartman-Fabco Conveyor *EXEMPT*
10268	4'x14' Simplex Three Deck Rinse Screen *EXEMPT*
10269	McLanahan Sand Screw *EXEMPT*
10270	Coarse Material Washer 42" x 90' *EXEMPT*
10271	McLanahan Log Washer *EXEMPT*
10274	36" x 50' Portable Radial Stacking Conveyor *EXEMPT*
10277	18"x60' Truss Type Radial Stacker w/belting & motor *EXEMPT*
10278	Kolberg Triple Deck Rinse Screen, 4' x 10' *EXEMPT*
10279	McCloskey portable conveyor *EXEMPT*
10281	18"x60' Truss Type Conveyor w/belting & motor *EXEMPT*
10282	24" x 55' Truss Type Conveyor w/belting & motor *EXEMPT*
1C	McCloskey MCB 36X125 Conveyor *EXEMPT*
10288	Superior Conveyer 36x125 PS125 *EXEMPT*
10295	2004 Webco type100-30 Conveyor *EXEMPT*
10298	24" x 40' Portable Transfer Conveyor *EXEMPT*
10300	TESAB Scalper 1550 Screenner *TAX EXEMPT*
<b>Category: 25- 3 Asphalt Paver (small)</b>	

701	Pavemore Concrete Paver
10702	Gomaco C-350 Paver
<b>Category: 25- 4 Crane- 74Lnkbelt- BE- American</b>	
10290	1980 Bucyrus Erie 60XC Crane
10293	1969 American Mobil 5460 Crane
10294	1974 Linkbelt Truck Crane
<b>Category: 25- 5 Crane - Terex &amp; LBelt LS-518</b>	
10283	1982 LinkBelt LS-518 Crane
10285	Link Belt LS-418A Crane, 110 ton
10287	2006 Terex American Crane
<b>Category: 25- 6 Crane - NW Crawler</b>	
10259	1975 Northwest Crane *EXEMPT*
10291	1960 Northwest Crawler Crane
<b>Category: 25- 7 Dredger</b>	
10299	1989 DMC Dredge *EXEMPT*
11597	Dredge Barge *EXEMPT*
<b>Category: 25- 8 Boring - Moling Machines</b>	
713	2005 McLaughlin Moling Machine
<b>Category: 25- 9 Curb Machine</b>	
10700	2003 Miller M1000 Curb Machine
<b>Category: 25- 10 Scales</b>	
12027	Chamberlain Rd Scales 80' TAX EXEMPT
12028	Chamberlain Road Scales, 70' TAX EXEMPT
12029	Clark Road 70' Truck Scales TAX EXEMPT
<b>Category: 30- 1 D-8 Cat Dozer</b>	
2207	Rental D8 Dozer
10366	2002 Cat D8R Dozer
<b>Category: 30- 2 D-6 Cat Dozer</b>	
2208	Rental D6 Cat Dozer
10360	2019 D6TL-19A LGP Dozer
10361	2014 Cat D6K2L Dozer
10362	2014 Cat D6TLGP Dozer
10368	2003 Cat D6R Dozer
<b>Category: 30- 3 D-4H &amp; D5 Cat Dozer</b>	
2209	Rental D4H - D-5 - 650JD Dozer
10363	2018 Cat D5K2L Dozer
10364	2018 Cat D5K2L Dozer
10367	Cat D5K2X
<b>Category: 30- 4 D4C/G/K Cat Dozer &amp; Kom 37/39</b>	
2210	Rental D4C, D4G, D4K & JD450 Dozer
10388	2018 Cat D4K2 XL Dozer
10389	D4 Dozer - Coming in July
10390	2014 Cat D4K2 LGP Dozer
10391	2014 Cat D4K2 LGP Dozer
10392	2015 Cat D4K2L Dozer
10393	2015 Cat D4K2LGP Dozer
10394	2015 Cat D4KLGP Dozer
10395	2016 CAT D4KLGP
10396	2016 CAT D4K2 XL
10397	Komatsu D39 Dozer
10398	Komatsu D39 Dozer
10399	2018 Komatsu D37EX-24
<b>Category: 30- 5 Dozer - Cat D4G</b>	
10365	2018 Cat D5K2 LGP Dozer
10374	2005 Cat D4G Dozer
10375	2005 Cat D4G Dozer
10382	2006 Cat D4GXL Dozer
10384	2006 Cat D4G Dozer
10385	2006 Cat D4GLGP Dozer
<b>Category: 40- 1 815B Roller</b>	
10415	1997 Cat 815B Compactor

**Category: 40- 2 CS 563 Roller**

10408	1998 Cat CP563C Roller
10410	2017 CAT CS54B Roller w/sheepsfoot kit
10	2017 CAT CS54B Roller
10418	2014 CAT CS54B Roller
10419	2015 CAT CS54B Roller
10421	1998 Cat CS563C Roller
10425	2002 Cat CS563D Roller
10426	2007 Cat CS563E Smooth Drum Roller
10427	Cat CS56 Roller

**Category: 40- 3 Raygo - Sakai - Bomag Rollers**

416	2001 Hyster C450A Compactor
2212	Rental Roller
10400	1984 Raygo 400 Roller -smoothd
10401	1997 Cat PS130 Roller
10404	1988 Sakai SV70TF Roller
10405	1988 Sakai SV70TF Roller
10406	1984 Raygo 420C Roller -S.Foot
10407	1996 Champion 840 Roller
10409	1973 Raygo 400 Roller Smooth Drum
10411	1986 Ingersoll DD56 Roller
10412	1997 Galion Dresser D784 Roller
10414	Sakai SV500TF Roller
10424	Sakai TS-200-3 Roller

**Category: 40- 4 Cat 815F roller**

10403	2001 Cat 815F Compactor
10422	2007 CAT 815F Series II Compactor

**Category: 50- 1 580 & 416 Backhoe**

2211	Rental Backhoe
10	1993 Cat 416B Backhoe 4x4 cab
10586	1997 Cat 416C Backhoe 4x4 cab
10587	1987 Case 580E Backhoe 4x4 cab
10589	1999 Cat 416C Backhoe 4x4 cab

**Category: 50- 2 420 & 426 Cat Backhoe**

10590	2001 Cat 420D Backhoe 4x4 cab
10592	1999 Cat 426C Backhoe 4x4 w/cab
10593	2002 Cat 420D Backhoe 4x4
10596	2007 Cat 420E 4x4 Backhoe/loader

**Category: 60- 2 615 Cat Scraper**

10616	2000 Cat 615CII Scraper
10617	1996 Cat 615 CII

**Category: 60- 4 Quad Track - Challengers**

10608	Cat Eject SC17U Pull Scraper
10609	Cat Eject SC172T Pull Scraper
10614	2012 Cat TS185 Scraper (rear)
10615	2012 Cat TS185 Scraper (front)
10623	2007 Challenger MT965B Tractor
10642	2006 Reynolds Pan 17E10.5
10643	2006 Reynolds Pan 17E10.5
10681	E-Ject 17E Pan (rear) (696)
10682	E-Ject 17E Pan (front) (696)
10683	E-Ject 17E Pan (rear) (695)
10684	E-Ject 17E Pan (front) (695)
10685	E-Ject 17E Pan (rear) (694)
10686	E-Ject 17E Pan (front) (694)
10687	E-Ject E-17 Pan (Rear)
10688	E-Ject E-17 Pan (Front)
10690	2015 CAT MT875C Challenger
10691	2012 CAT MTS865C Challenger
10692	2012 CAT MTS865C Challenger
10693	2004 CAT MT865 Challenger Tractor



## EM Equipment List

## Equipment and Components

10695	2007 CAT MT875B - Challenger
10696	2007 CAT MT875B - Challenger
10697	2018 CAT MT875E Challenger Tractor
10698	2019 Challenger MT875E Track Tractor
<b>Category: 65- 2 Cat 143H Grader</b>	
10677	1998 Cat 143H Grader
10678	2005 Cat 143H Grader
<b>Category: 65- 3 12G&amp;H-670-770-Champion Graders</b>	
10674	1971 Cleveland D680 Grader
10675	1977 John Deere 770 Grader
10676	1989 Champion 740 Grader
10679	2013 CAT 12M2 AWD Grader
10680	1999 Cat 12H Grader
<b>Category: 70- Attachments</b>	
564	Sweepster 6' Broom bucket-mntd
565	Sweepster 6' Broom bucket-mntd
566	Sweepster 6' Broom bucket-mntd
567	1984 Sweepster 7' S32 Broom
654	Rome Disc 30"
655	John Deere 210 Disc
656	Wilbeck 1638 Disc 14" blade
657	2000 Brush Hog 3610-02 - batwing
729	Cyclone Breaker
730	Arrow G400 Concrete Breaker
742	Sheeting Driver Hair Pin
944	John Deere 36" Auger
945	John Deere 250 Pallet Forks
948	JCB 18" Auger
1093	UB 215 Frost Tooth
1095	Case 580 Frost Tooth
1097	215 Ripper Hensley T702P
1101	Landscape Rake 6'
1102	Landscape Rake 6'
1103	Box Scraper
1104	Box Scraper
1108	2005 Stihl FS55 Trimmer
1111	2005 Land Pride 8' Rake LR3596
1117	2007 Fertilizer Spreader
1121	Landscape Rake 6'
1494	LaBounty UP-40SII
1498	Demo Ball 3,000lbs
1499	Demo Ball 4,000lbs
2065	Lowe Auger (215)
10612	MT-14 Roller Blade Attachment
10635	Cat Landscape Rake
10636	Landpride 6' Rake
10638	Landpride 3-point Primary Seeder
10649	Sunflower 4232-21 Chisel Plow w/wings
10650	Sunflower 4212-6 Chisel Plow
10651	DMI Chisel Plow
10652	2005 DMI 2500 Chisel Plow
10653	Rome TRCW-12 Disc, 9'
10658	Rome TRCW-12 Disc, 9'
10743	Delmag D-12 Pile Hammer
10744	Delmag D-19 Pile Hammer
10745	PileCo D30-32 Pile Driver
10917	Road Widener BL Skid Steer Attachment
10943	John Deere CA25 Auger
10947	Cat CV18B Roller for Skid Steer
10949	JD 12' Boom for Skid Steer
10972	2010 Cat A19B Auger

## EM Equipment List

## Equipment and Components

11092	Cat 416 Frost Tooth
11100	Stihl Trimmer 225FS85
11105	1995 Harley Power Rake T-6
11	Countyline 6' Brush Hog
11110	2005 Woods GHT 72" Tiller
11118	Cat 72" Brush Cutter SSLBR172
11120	Bradco BC60 Skid Steer Mower Deck
11122	Massey Harris 7' Chisel Plow
11134	Plow - Uni-mount
11135	Plow - Western 8' blade
11136	Plow - Hiniker
11137	Plow - Uni-Mount 8' Blade
11138	Plow - 12' Snow Box
11139	Plow - 16' Snow Box
11140	Plow - Western Uni-Mount 8'
11143	Boss Snow Blade 9' 2"
11144	Boss Snow Blade, 8'2"
11145	Snow Ex Salt Spreader
11146	Boss Snow Blade, 9'2"
11150	Landpride Straw Crimper w/Tank
11151	Sprayer, 60 gal, 3pt hitch, 7 Nozzle
11152	Stihl BR450 Back Pack Blower
11153	Stihl F556R Weed Whip
11154	Stihl BG50 Small Blower
11407	Kenco Barrier Clamp
11408	Kenco Barrier Clamp
11414	LaBounty CP 80 Concrete Pulverizer
11431	SEC 2 in 3 Grapple (Cat 330)
17007	320 Ripper
17	Kenco 345 Ripper 48" Frost Tooth
17094	WB Frost Tooth, WBRT4
17097	Hensley 314 Frost Tooth
17098	300 Ripper Hensley T702P
17099	Kenco 330 Ripper Tooth 6Y-0359

**Category: 70- 1 Buckets**

17000	CAT 416 22" Bucket
17001	Cat 420 Bucket, 22"
17002	Cat 225B - 24" Bucket, 4 Tooth
17003	Cat 312/314E, 42" Bucket
17004	Cat 420D - 12" Bucket, 3 Tooth
17005	Cat 580C - 12" Bucket, 3 Tooth
17006	Cat 330 - 30" Bucket, 3 tooth
17007	CF 336, 52" Bucket
17008	Cat 215 - 30" Bucket, 4 Tooth
17009	Cat 336 50" Bucket
17010	CAT 320 30" Bucket
17012	CAT 375 68" Bucket
17013	Cat 336 F 50" Bucket
17014	Cat 375 Sand Bucket
17015	CAT 385 74" Bucket
17016	Big Black Bucket 375?
17017	VOS 245 Sand Bucket
17019	416B - 12" Bucket, 3 Tooth
17020	Cat 335F 42" Bucket
17003	Cat 321 50" Bucket
17	CAT 375 42" Bucket
17025	Cat 345-350 - 48" Bucket, 5 tooth
17026	CAT 416C 18" Bucket, 4 tooth
17027	CAT 375 48" Bucket
17028	Cat 385 50" Bucket
17029	Cat 325 - 36" Bucket, 5 Tooth

## EM Equipment List

## Equipment and Components

17031	Komatsu 300 - 30" Bucket, 4 tooth
17032	Cat 375 - 50" Bucket, 4 Tooth
17033	CAT 345/350 34" Bucket
17034	CAT 330 56" Skeleton Bucket
17035	Cat CF375 32" Bucket
17036	Cat 375 - 36" CF Bucket
17037	CAT 375 32" Bucket
17038	245-250 54"-CF Bucket, 6 tooth
17039	Cat 349 72" Bucket
17040	CAT 375 56" Bucket
17042	Cat 365 - 54" Bucket VB Linkage, 5 tooth
17044	Cat 330 - 30" Bucket 2005
17046	Cat 330 - Sand Bucket (Large)
17047	CAT 314/315FL 18" Bucket
17048	Cat 314 - 36" Bucket
17049	318-320 - 60" Ditching Bucket
17050	Cat 345-350 CF - 48" Bucket, 5 tooth
17053	Cat 416C - 36" Bucket, 5tooth
17054	Cat 48" Bucket
17055	Cat 60" Bucket
17058	Garbow 2yd Concrete Bucket
17059	Garbow 2yd Concrete Bucket
17060	Cat 320C - 24" Bucket
17061	Cat 320C - 48" Bucket
17062	Cat 314C - 24" Bucket
17063	Cat 314C - 32" Bucket
17065	Cat 385 - 84" Bucket HLinkage, 6 tooth
17066	Cat 330C - 30" Bucket
17067	CAT 390 52" Bucket
17069	Cat 416 - 30" Bucket, 5 tooth
17071	CAT 420 28" Bucket
17072	CAT 416 28" Bucket
17073	Komatsu 42" Bucket, 5 tooth
17074	Balderson 36" Bucket, 5 tooth, Cat 325
17075	Cat 330 - 28" Bucket, 3-tooth
17076	CF 330 Bucket, 5 tooth
17077	Hensley - 48" Bucket
17078	Cat 345-350 - 30" Bucket, 3 tooth
17079	Bradco 76" Grapple Bucket
17080	Pemberton 48" Concrete Ripping Bucket
17081	Cat 420 36" Backhoe Bucket
17082	Cat 336E 48" Bucket. 5 tooth
17083	CAT 336 48" Bucket
17085	Cat 336E, 48" Bucket
17086	CAT 329 54" Bucket
17088	Balderson 325 48" Bucket
17089	Page Dragline Bucket, 3.5cy
17092	CF 416 Frost Tooth
17100	Esco Dragline Bucket
17101	Hendrix Dragline Bucket 3 1/2 yd
17102	Page Dragline Bucket 3 1/2 yd
17107	Hendrix Dragline Bucket 3 1/2 yd
17108	Hendrix 3YD Drag Bucket
17110	84" Rock Bucket for Skid Steer
17111	Sauerman 12 Yd Bucket for EQ10261
17112	Sauerman 12 yd. Bucket for EQ10261

**Category: 70- 2 Forks**

10637	Landpride Pallet Forks
11131	Pemberton 950K Logging Forks
17091	WB 330 Frost Tooth

**Category: 75- Tractor**

## EM Equipment List

## Equipment and Components

11113	Ford 3000 C1013C Tractor
<b>Category: 75- 1 Tractor - small</b>	
10634	2001 John Deere 4100 Tractor w/accessories
10	New Holland T6.180 Tractor
10644	Steiger ST325 Tractor
10645	1982 JD 8650 Tractor 4x4
10647	1993 John Deere 8870 Tractor
11115	2005 Kubota L-5030 HST
<b>Category: 75- 2 Tractor - mid/large</b>	
10630	2015 Kubota L3901 HST Tractor w/Bucket
<b>Category: 80- Misc. Large</b>	
738	Terramite screed w/BS Engine
10715	Genie TZ50 Manlift (Red)
10717	1990 Mitsubishi Tree Spade
10752	MBW Blitzscreed with 6 sections
12017	Schulz 20hp 230v Shop Air Compressor
12018	Schulz 20hp 230v Shop Air Compressor
12019	Overhead 5 Ton Shop Crane
12022	Clean Burn Shop Heater
12023	Clean Burn 250000BTU multifuel
12024	Energy Logic Waste Oil Furnace
12025	Energy Logic Waste Oil Furnace
12026	G0746 Lathe 20" x 60"
12030	Bridge Beam Ramp/Launcher
12100	Sewer Box 9x11 (3")
12101	Sewer Box 8 X 16
12102	Sewer Box 8X16
12103	Sewer Box 8x16
12104	Sewer Box 4x20 (1")
12	Sewer Box 6x20
12106	Sewer Box 4x20
12107	Sewer Box 4x24
12108	Sewer Box 6x24
12109	Sewer Box 7x24
12110	Sewer Box 8x24
12111	Sewer Box 8x24
12112	Sewer Box 8x24
12113	Sewer Box 8x24
12114	Sewer Box 8x25
12115	Sewer Box 4x26
12116	Sewer Box 6x26
12117	Sewer Box 6x26
12118	Sewer Box 8x26
12119	Sewer Box 8x26
12120	Sewer Box 10x26
12121	Sewer Box 4x28 (1")
12122	Sewer Box 4x28
12123	Sewer Box 8x28
12124	Sewer Box 8x28
12125	Sewer Box 8x28
12126	Sewer Box 8x28
12127	Sewer Box 8'X20' 8'
12822	20' Shipping Container
12823	20' Shipping Container
12824	20' Shipping Container
12825	20' Shipping Container
12826	20' Shipping Container
12827	20' Shipping Container
12828	20' Shipping Container
12829	20' Shipping Container
12830	20' Shipping Container

## EM Equipment List

## Equipment and Components

**Category: 80- 1 Chipper**

733 Balderson BBBP Brush Burner  
10736 1995 Morbark 30/36 Chipper

**Category: 80- 2 Sewer Box**

11837 Sewer Box Catwalk  
11839 Shore-Tec Trench Box 4x8x16'

**Category: 80- 3 Pressure Washer/Steam Cleaner**

10826 Clemco Sand Blaster w/Helmet  
10827 Aaladin Pressure Washer  
11934 2000 Tandem Power Washer Trail  
11935 HydroChem Power Washer Trailer

**Category: 80- 4 Lite Plants**

514 Allmand Maxi Lite Plant  
10501 2001 Allmand Lite Plant  
10502 2001 Allmand Lite Plant  
10503 2001 Allmand Lite Plant  
10504 2001 Allmand Lite Plant  
10505 Specialty Lighting BTP62MH  
10506 2002 Allmand Nite Lite Pro  
10507 2002 Allmand Nite Lite Pro  
10508 2002 Allmand Nite Lite Pro  
10509 2002 Allmand Nite Lite Pro  
10510 2002 Allmand Nite Lite Pro  
10511 2002 Allmand Nite Lite Pro  
10512 2000 Allmand Maxi Lite Plant  
10513 2000 Allmand Maxi Lite Plant

**Category: 80- 5 Mulcher**

706 Finn B-50 Mulcher  
708 Finn BCG2 Mulcher

**Category: 80- 6 Welder**

10900 Miller Bobcat 250 Welder  
10902 Miller Bobcat 250 Welder  
10904 Miller 302 Welder  
10905 Miller Gold Star 452 Welder  
10907 Hobart G213 Welder  
10908 Miller Bobcat 250a Welder  
10909 Snap-On MIG Welder  
10910 Lincoln Wire Feed Welder  
10912 Lincoln Mig Aluminum Welder  
10913 Lincoln DC-600 Wire feed welder  
10914 Miller Mig Arc Welder-Ann Arbor  
10915 Miller 304 Welder  
10916 Miller Bobcat 250 Welder, Kohler engine  
10918 Miller Bobcat 250 Kohler Welder/Generator  
10919 Spray Welder

**Category: 80- 7 Generator**

1825 Honda 2000 watt generator  
1826 Honda 2000 watt generator  
1827 Honda EU2000 watt generator  
1845 2008 Honda 5000w11HP generator  
1846 Honda 6500 watt generator  
1848 Coleman Generator  
1849 2005 Honda 5000W Generator  
1850 2001 Honda 5000W Generator  
1851 2005 Honda 5000W Generator  
1854 2005 Honda EB5000XKT  
1860 1996 Honda 6500W Generator  
1862 1994 Honda 2500W Gen on 176  
1863 Honda 5000W Generator  
1865 MultiQuip 5000W Generator  
1866 MultiQuip 3200W Generator

## EM Equipment List

## Equipment and Components

1868	Honda 3500W Generator
1869	1996 Coleman 7000W Generator
1870	Homelite 3500W Generator
1871	Homelite 4400W Generator
1873	1997 Honda EB5000 Generator
1874	1998 Honda EB5000 Generator
1875	1998 Honda EB5000 Generator
1876	1998 Honda EB5000 Generator
1878	1998 Honda EB5000 Generator
1880	1999 Honda EB5000 Generator
1882	1999 Honda EB5000 Generator
1883	1999 Honda EB5000 Generator
1884	2001 Honda EB5000 Generator
1885	2001 Honda EB5000 Generator
1887	2003 Titan 7000W Generator
1888	2004 Honda 5000W Generator
1893	Lima 70KW Generator
1894	2002 Titan 5500 Generator
1895	2005 Honda EB6500 Generator
1896	2005 Honda EB5000 Generator
1899	2007 Honda 6500 watt 13HP generator
10819	30KW Gillette Generator w/ trailer
10820	30KW Gillette Generator w/trailer
11802	Honda EB5000X 11hp Generator
11824	Wacker G6.5kw Generator
11828	Cat 125 demo Generator *EXEMPT*
11829	Cat 125 demo Generator *EXEMPT*
11830	Cat SR-4, 180KW Generator
11842	Gillette 300KW Generator
11	Detroit Diesel 6-71 Generator
11844	Honda 5000W Generator, 11HP
11847	Honda 6500 Generator
11851	2018 Honda 3000W Generator
11852	2005 Honda 5000W Generator
11853	2000 Caterpillar XQ75 Generator
11855	Honda 5000W Generator
11856	Honda EBPC5000 Generator
11857	1999 Caterpillar XQ125 Generator
11858	1996 Caterpillar XQ125 Generator
11859	2014 Honda ETB5000 Generator
11861	2014 Honda ETB5000 Generator
11864	North Star 8000W generator
11867	Honda EB5000X 11hp Generator
11872	1997 Honda EB3500 Generator
11877	1998 Honda EB5000 Generator
11879	1998 Honda EB5000 Generator
11881	Coleman 3750 Powermate Generator
11882	Honda EB5000X Generator
11883	Honda EB5000X Generator
11886	2002 Honda 6500W Generator
11889	2012 Honda 5000W Generator, 11HP
11890	2012 Honda 5000W Generator, 11HP
11891	2002 MultiQuip 25KW Generator
11892	2010 Honda EB6500 Generator
11897	Honda 5000W Generator
11	2007 Honda EB5000 watt Generator
12400	Honda 6500KW Generator
12401	Honda EB6500 Generator
<b>Category: 80- 8 Air compressor</b>	
803	Sullair 185DP-JD Compressor
804	Sullair 185DP Air Compressor

## EM Equipment List

## Equipment and Components

806	Grimmer Schmidt 125 Compressor
807	Grimmer Schmidt 125 Compressor
808	Grimmer Schmidt 125 Compressor
810	Sullair M185DPQ-JD Compressor
814	Sullair 150 Compressor gas eng
830	Kobalt Air Compressor, 17 gal tank
10800	Sullair 185Q Air Compressor
10801	Sullair 185DP Air Compressor
10802	Sullair 185DPQ Air Compressor w/trailer
10805	Sullair 160DP Air Compressor
10809	Sullair M100DPQKUP Compressor
10811	Sullair 175DPQ-JD Compressor
10812	Sullair 185DPQ-JD Compressor
10813	Sullair 185DPQ-JD Compressor
10815	Sullair 185DPQ Air Compressor
10816	DeVilbiss VDV5065 15hp Air Compressor
10817	DeVilbiss VDV5065 15hp Air Compressor
10828	Ingersol Rand 7.5 HP 175PSI
10829	Air compressor, 5HP, 135PSI
10831	Sullair Air Compressor 185
10832	Sullair Air Compressor 185
10833	Sullair Air Compressor 185

**Category: 80- 9 Pumps - water, electric etc.**

1200	Tsurumi 3" 220V Pump SP L3455
1201	Tsurumi 3" 220V Pump SP NK215
1203	Tsurumi 3" 220V Pump SP NK222
1204	Tsurumi 3" 220V Pump SP NK215
1207	Tsurumi 3" 220V Pump SP NK215
1208	Tsurumi 3" 220V Pump KTZ322
1209	Tsurumi 3" 220V Pump KTZ322
1210	Prosser 3" 220V Pump 9-35000
1211	Prosser 3" 220V Pump 9-35000
1212	Tsurumi 3" 220V Pump NK15
1213	Tsurumi 3" 220V Pump NK15
1214	Tsurumi 3" 220V Pump NK15
1215	Tsurumi 3" 220V Pump NK15
1216	Tsurumi 3" 220V Pump NK215
1217	Tsurumi 3" 220V Pump NK215
1218	Tsurumi 3" 220V Pump NK215 2hp
1219	Tsurumi 3" 220V Pump NK215 2hp
1220	Tsurumi 3" 220V Pump SP NK2
1221	WEDA Pump
1222	Tsurumi 3" 220V Pump SP NK215
1223	Tsurumi 3" 37CEZ Water Pump
1224	Tsurumi 3" 37CEZ Water Pump
1225	Flygt 3" 2066 Water Pump
1226	Flygt 3" 2066 Water Pump
1227	Prosser 3" 220V Pump 9-35000
1228	Prosser 3" 220V Pump 9-35000
1229	Prosser 3" 220V Pump 9-35000
1230	Prosser 3" 220V Pump 9-35000
1232	Tsurumi 3" NK215 Pump
1233	Tsurumi 3" NK215 Pump
1236	Tsurumi 3" N215 Pump
1237	Tsurumi 3" 220V Pump
1238	Tsurumi 3" elec subm pump
1250	Berkely 4" Sub Elec Pump
1260	Franklin 4" Electric Pump
1264	Mody 4" elec subm pump
1301	Gorman Rupp 6" Water Pump
1306	Honda 3" Trash Pump WT30X

## EM Equipment List

## Equipment and Components

1307	Honda 3" Trash Pump WT30X
1309	Honda 3" Trash Pump WT30X
1310	Multiquip 3" Pump 30ITA
1311	Multiquip 3" Pump 30ITA
1315	Honda 3" Trash Pump WT30X
1316	Homelite 3" Diaphragm Pump
1318	Wacker 3" Pump PTSA
1319	Midland 3" Pump Model 353002
1320	Homelite 3" Pump 853-1R
1321	Honda 3" Trash Pump WT30X
1322	Multiquip 2" 110V Pump 2010A
1323	Flygt 2" 110V Pump 2050
1341	Tsurumi 2" 110V Pump HSD255S
1342	Tsurumi 2" 110V Pump HSD255S
1343	Tsurumi 2" 110V Pump HSD255S
1344	Tsurumi 2" 110V Pump HSD255S
1345	Tsurumi 2" 110V Pump HSD255S
1346	Tsurumi 2" 110V Pump HSD255S
1347	Tsurumi 2" 110V Pump HSD255S
1348	Tsurumi 2" 110V Pump LB3750
1349	Tsurumi 2" 110V Pump LB3750
1350	Tsurumi 2" 110V Pump LB3750
1351	Tsurumi 2" 110V Pump LB3750
1352	Tsurumi 2" 110V Pump LB3750
1353	Tsurumi 2" 110V Pump LB3750
1354	Tsurumi 2" 110V Pump LB3750
1355	Tsurumi 2" 110V Pump LB3750
1356	Tsurumi 2" 110V Pump LB3750
1357	Tsurumi 2" 110V Pump LB3750
1358	Tsurumi 2" 110V Pump LB2750
1360	Tsurumi 2" 110V Pump LB2750
1361	Tsurumi 2" 110V Pump LB2750
1362	Tsurumi 2" 110V Pump LB2750
1363	Tsurumi 2" 110V Pump LB2750
1364	Tsurumi 2" Water Pump, LB2750
1365	Tsurumi 2" 110V Pump LB2750
1366	Tsurumi 2" 110V Pump LB2750
1367	Tsurumi 2" 110V Pump LB2750
1368	Tsurumi 2" 110V Pump LB2750
1369	Tsurumi 2" 110V Pump LB3750
1370	Tsurumi 2" 110V Pump LB3750
1371	Tsurumi 2" 110V Pump LB3750
1372	Tsurumi 2" 110V Pump LB2750
1373	Tsurumi 2" 110V Pump LB2750
1375	Tsurumi 2" 110V Pump LB2750
1376	Multiquip 2" 110V Pump 2010A
1377	Tsurumi 2" 110V Pump LB2750
1378	Tsurumi 2" 110V Pump LB2750
1379	Tsurumi 2" 110V Pump LB400
1380	Tsurumi 2" 110V Pump LB400
1381	Tsurumi 2" 110V Pump LB3750
1382	Tsurumi 2" 110V Pump LB2750
1383	Tsurumi 2" 110V Pump KTV22L
1384	Multiquip 2" 110V Pump 2010A
1385	Tsurumi 2" 110V Pump LB3750
1386	Tsurumi 2" 110V Pump HSDS-55.5
1387	Tsurumi 2" 110V Pump HSDS-55.5
1388	Tsurumi 2" 110V Pump LB2750
1390	Tsurumi 2" 110V Pump LB2750
1391	Tsurumi 2" 110V Pump LB2750
1392	Tsurumi 2" 110V Pump LB2750



## EM Equipment List

## Equipment and Components

1393	Tsurumi 2" 110V Pump LB2750
1394	Tsurumi 2" 110V Pump LB2750
1395	Tsurumi 2" 110V Pump LB2750
1397	Tsurumi 2" 110V Pump LB2750
1398	Tsurumi 2" 110V Pump LB2750
1399	Tsurumi 2" 110V Pump LB2750
1504	Tsurumi 2" 110V Pump LB2750
1505	Tsurumi 2" 110V Pump LB2750
1506	Tsurumi 2" 110V Pump LB3750
1507	Tsurumi 2" 110V Pump LB3750
1508	Tsurumi 2" 1 HP 110V Pump LB3750
1509	Tsurumi 2" 110V Pump LB3750
1510	Tsurumi 2" 110V SubPump LB3750
1511	PowerQuip 3" AC3
1512	Tsurumi 2" 1 HP 110V Pump LB3750
1513	Tsurumi 2" Elec. Pump NK2-15
1516	Tsurumi LB3-750 Pump
1517	Tsurumi 2" LB3-750 pump
1520	Tsurumi LB2-400 pump
1523	Flygt 2" 110v Ready pump
1524	Tsurumi 2" 110V Pump LB3750
1527	Flygt Ready 8 Pump
1528	Flygt Ready 8 Pump
1529	Flygt 2" 100v pump Ready4
1530	Tsurumi 2" 110V Pump LB3750
1531	Flygt 2" Ready 8 110v pump
1581	Honda 3" WB30XR2 pump
1582	Multiquip 3" gas water pump
2042	Rex Test Pump Model 463011
10774	Well Point Accessories
11202	Tsurumi 3" 220V Pump
11203	Tsurumi 3" 220V Pump
11205	Tsurumi 3" 220V Pump SP FTZ322
11206	Tsurumi 3" 220V Pump SP NK215
11231	Tsurumi 3" NK215 220V Pump
11234	BJM 6" 440V 21hp Pump SPV160
11235	Tsurumi 3" NK215 220V Pump
11239	Tsurumi 8" 440V Pump KRS-822
11240	Tsurumi 8" 440V Pump KRS-822
11245	4" 50hp Water Pump, 1,100 gal/min.
11246	Flygt 3" BK101 220v
11251	Tsurumi 3" NK215 220V Pump
11252	Tsurumi 3" NK215 220VPump
11300	Gorman Rupp 6" Water Pump
11302	Godwin 6" Water Pump
11303	Honda 4" Trash Pump WT40X
11304	Honda 4" Trash Pump WT40X
11305	Honda 3" Trash Pump WT30X
11308	Honda 3" Trash Pump WT30X
11310	Honda 3" Trash Pump WT30X
11311	Multiquip 3" Pump 30ITA
11313	Multiquip 3" Pump 30ITA
11317	Multiquip 3" Pump 30ITA
11324	Tsurumi 2" 110 V Pump
11325	Tsurumi 2" 110 V Pump
11326	Tsurumi 2" 110V Pump
11327	Tsurumi 2" 110V Pump
11328	Tsurumi 2" 110V pump
11329	Tsurumi 2" 110V Pump
11330	Tsurumi 2" 110V Pump
11331	Tsurumi 2" 110V Pump

## EM Equipment List

## Equipment and Components

11332	Tsurumi 2" 110V Pump
11333	Tsurumi 2" 110V Pump
11334	Tsurumi 2" 110 Pump
11335	3" Honda Trash Pump
11337	3" Honda Trash Pump
11338	Honda 3" Trash Pump
11339	Tsurumi 4", 15HP Pump
11501	Tsurumi 2" 110V Pump
11502	Tsurumi 2" 110V Pump
11503	Tsurumi 2" 110V Pump
11514	Flygt 3" pump, electric, 3.2hp, 460 volt
11515	Flygt 2" pump
11519	Flygt 2" Ready Pump
11522	Tsurumi 2" 1HP Pump LB3-750
11525	Hydromatic 2" electric submersible pump
11526	Grindex Matador Dewatering Pump, 27 HP **TAX EXEMPT**
11579	Hydro Test Pump
11583	Honda 3" Trash Pump, 8HP
11584	Honda 3" Trash Pump, 8HP
12032	Mayco C30 HDG Grout Pump

**Category: 80- 10 Vibro unit - not vibro plate**

1412	Allied Hoepack 9700C
1413	Hed Hoepack
1415	Allied Hoepack 8700C
1416	Allied Hoepack 9800 or 5800
1418	Cat CVP75 Hoepack CWTS/AP
1423	Allied Hoepack 9800
1426	Cat CVP75 Hoepack
10712	H&M H-75A Vibro unit
10713	H&M H1700 Vibro Unit driver ex
11410	Allied Hoepack 9700C
11411	Allied Hoepack 9700C
11417	Allied Hoepack 9700C
11419	Cat CVP40 Hoepack
11420	Allied Hoepack 9700C
11421	Allied Hoepack 8700C
11422	Stanley Hoepack HS6000
11424	Allied Hoepack 8700C
11425	Cat CVP75 Hoepack
11427	Cat 2008 CVP75 Hoe Pack
11428	Allied Hoepack Compactor 9700L
11429	Stanley Hoepack HS6000 for Cat 416
11430	Allied Hoepack 8700
11432	Allied E-68 Hydraulic Hammer
11433	Allied S-83 Hydraulic Hammer PARTS ONLY
11434	Allied E-68 Hydraulic Hammer
11495	Rammer RD 32RA Crusher / Cutter

**Category: 80- 11 Trencher unit**

10289	1997 Vermeer V-1350 Trencher
11116	Burchland Silt Fence Layer

**Category: 80- 13 Breakers (Okada etc..)**

11400	Cyclone Breaker
11401	Okada Breaker U08-2
11402	IR Bobcat Breaker
11403	ITC Breaker PM501
11404	ITC Breaker PM125 hydraulic
11405	Cat Breaker H160D S
11406	Cat Breaker H160S
11440	CAT H-110ES Breaker
11441	CAT H-140ES Breaker
11493	Zanetis 12" Hydraulic Pulverizer

**Category: 80- 14 Morbark Wood Hog (only)**

10735 2004 Morbark 7600 Wood Hog \*EXEMPT\*  
 10737 Morbark Wood Hog Shredder \*EXEMPT\*

**Category: 80- 15 Boats - Bridge Division**

11592 Sylvan (Red) 14' Aluminum Boat w/15hp motor and trailer  
 11593 Meyers 16' Aluminum Boat w/EZ Load Trailer, 6hp  
 11595 16' Tracker Aluminum Boat \*EXEMPT\*

**Category: 80- 16 Dragline**

10261 Pioneer Skyline Dragline \*TAX EXEMPT\*  
 17113 Sauerman 4 Sheave Trolley

**Category: 85- Misc. Small**

795 Spartan 1065 Sewer Tape  
 798 Bemis Arrow Board Signboard  
 799 Arrow Board Signboard  
 824 Airlessco Paint Sprayer  
 FLA Florida equip repair account  
 1698 Morrison 25' Vibrating Screed  
 2000 1991 JD Heater Model 100  
 2001 John Deere Heater Model A50  
 2003 John Deere Heater Model A50  
 2012 Genear Leak Locator  
 2036 Electric Fan, 42"  
 2037 Electric Fan, 42"  
 2099 All Tap Machines  
 2220 Rental Misc. Small (attachments)  
 FILT Filters  
 FUEL Fuel for Fleet  
 SHOP Shop Expenses  
 10077 2016 Honda TRX500  
 10177 Lube Skid - Field Service Use  
 10705 Finn Straw Blower B260  
 10709 M-1 Core Drill w/ Meka motor  
 10796 Concrete Vibrator Northrock Pro 2.0  
 10797 Concrete Vibrator Northrock Pro 2.0  
 10823 Clark Rd Sm.Engine Expenses  
 10825 Clark Rd Paint Shop Expenses  
 11124 Troy-Bilt 20" Push Mower  
 11127 Spreader 80# SS Commercial  
 11128 Honda 6.5hp Z-Vac  
 11181 Pro-Tech Sno Pusher, 16'  
 11182 Pro-Tech Sno Pusher, 16'  
 11183 2006 Kubota RTV900W Utility Vehic  
 11184 Kubota RTV X900G-A Utility Vehicle  
 11185 Kubota RTV X900G-A Utility Vehicle  
 11598 1997 Mercury Motor \*EXEMPT\*  
 11715 DeWalt 146 Wood surface planer  
 11716 Delta 2610 Wood Lathe  
 11717 Portable line Boring Machine w Auto feed  
 11728 Mueller Tapping Machine Powerh  
 11729 Mueller Tapping Machine Head  
 11730 Mueller Tapping Machine Head  
 11731 Mueller Tapping Machine Head  
 11732 Mueller Tapping Machine Head  
 11733 Mueller Tapping Machine Head  
 11734 Rebar Wire Tier  
 11735 Rebar Wire Tier  
 12002 John Deere Heater Model 150  
 12004 Pro 110 Reddy Heater  
 12007 Pro 155 Reddy Heater  
 12008 Dayton 200,000 BTU Heater  
 12009 Cuda Parts Washer

## EM Equipment List

## Equipment and Components

12010 Allmand MillionBTU Maxi Heater  
 12011 Hotsy Pressure Washer  
 12015 Plasma Cutter PMX85  
 12 Plasma Cutter PMX65  
 12033 Thompson Concrete Pump A4.5

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12199 Security Camera System  
 12200 Radio Equipment  
 FLDAA Field Supplies - Ann Arbor  
 FLDBR Field Supplies - Bridge  
 FLDGL Field Supplies - Grand Ledge  
 FLDME Field Supplies - MESI  
 FLEET Fleet Parts  
 LUBES Oil - Coolants - Lubes

**Category: 85- 1 Cut-off saw**

1253 Partner K1250 16" Cut-off saw  
 1606 Stihl TS700 14" Cut-off saw  
 1614 SoftCut 150 7"-10" Cut-off saw  
 1621 Stihl TS760 14" Cut-off saw  
 1653 Partner K1250 16" Cut-off saw  
 1662 Partner K950 14" Cut-off saw  
 1689 Partner K960 14" Cut off saw  
 1691 Stihl TS700 14" 98cc Cut-off saw  
 11600 Stihl TS800 16" Cut off saw  
 11601 Stihl TS800 16" Cut off saw  
 11602 Stihl TS800 16" Cut off saw  
 11603 Stihl TS420 14" Cut off saw  
 11604 Stihl TS420 14" Cut off saw  
 11605 Stihl TS420 14" Cut off saw  
 11607 Husqvarna K1260 16" Cut off Saw  
 11 Husqvarna 16" cut off saw  
 11609 Partner K1250 16" Cut-off saw  
 11610 Stihl TS420 Cut off saw  
 11611 Partner K1250 16" Cut-off saw  
 11612 Stihl TS420 Saw  
 11613 Stihl TS420 Cut off saw 14"  
 11615 Stihl TS420 Cut off saw 14"  
 11616 Stihl TS420 14" cut off saw  
 11617 Stihl TS420 Cut off saw  
 11623 Stihl TS420 14" cut off saw  
 11641 Stihl TS420 14" Cut-Off Saw  
 11644 Partner K970 14" cut off saw  
 11648 Husqvarna K1260 16" Cut-off Saw  
 11649 Stihl TS800 16" Cut-off saw  
 11650 Stihl TS800 16" Cut-off saw  
 11654 Stihl TS800 16" Cut off saw  
 11655 Husquavarna K1260 Cut off Saw 16"  
 11656 Stihl TS800 16" Cut-Off Saw  
 11657 Partner K950 14" Cut-off saw  
 11658 Stihl TS420 14" Cut-Off Saw  
 11659 Partner K950 14" Cut Off Saw  
 11663 Partner K950 14" Cut-off saw  
 11666 Partner K1250 16" Cut-off saw  
 11667 Stihl TS760 14" Cut-off saw  
 11668 Stihl TS420 14" Cut off saw  
 11669 Stihl TS420 14" Cut off saw  
 11670 Stihl TS420 14" Cut-off saw  
 11671 Stihl TS420 14" Cut-off saw  
 11672 Stihl TS420 14" Cut Off Saw  
 11673 Partner K950 14" Cut-off saw  
 11674 Stihl TS420 14" Cut Off Saw  
 11675 Stihl TS700 14" Cut-off saw

## EM Equipment List

## Equipment and Components

11677	Stihl TS420 14" Cut Off Saw
11678	Partner 94CC 14" Cut-off saw
11680	Stihl TS420 14" Cut-Off Saw
11682	Husqvarna K760 Cut off Saw
11683	Stihl TS760 14" Cut-off saw
11684	Husqvarna K760 14" Cut-off saw
11685	Husqvarna K760 14" Cut-off saw
11686	Stihl TS700 14" Cut-off saw
11690	Stihl 98CC 14" Cut-off saw
11693	Partner K950 Cut off saw
11695	Husqvarna K760 14" Cut-off saw
11696	Husqvarna K760 14" Cut-off saw
11697	Stihl 14" gas Cut-off saw
11751	Stihl HT75 Pole Saw

**Category: 85- 2 Concrete Saw**

753	Target 35II - 24" Concrete Saw
757	Target PAC III - 14" blade
758	Target PAC III - 14" blade
1699	Concrete Saw, 13HP 14" w/Honda
10754	Husqvarna 18" Walk behind saw
10756	Target 35II - 24" Concrete Saw

**Category: 85- 3 Jumping Jack**

471	Wacker BS600 Jumping Jack
487	Wacker BS60Y Jumping Jack
489	Wacker BS60Y Jumping Jack
494	Wacker BS60Y Jumping Jack
10451	Bomag BT65 Jumping Jack
10452	Bomag BT65 Jumping Jack
10453	Bomag BT65 Jumping Jack
10454	Bomag BT65 Jumping Jack
10470	Wacker BS700 Compactor
10472	Wacker BS600 Jumping Jack
10473	Wacker BS60Y-2I Rammer
10474	MQ Mikaso MT65H Jumping Jack
10475	Bomag BT65/4 Jumping Jack
10476	Bomag BT65/4 Juming Jack
10477	Wacker BS602I Jumping Jack
10478	Bomag BT65/4 Jumping Jack
10479	Bomag BT65/4 Jumping Jack
10481	Wacker BS600 Jumping Jack
10482	MQ Mikaso MT54F Jumping Jack
10483	Wacker BS600 Jumping Jack
10484	Wacker BS600 Jumping Jack
10488	Bomag BT-65 Jumping Jack
10490	Bomag BT-65 Jumping Jack
10491	Bomag BT-65 Jumping Jack
10492	Bomag BT-65 Jumping Jack
10493	Wacker BS62Y Jumping Jack
10495	MBW Plate Compactor GP2000
10496	Bomag Jumping Jack
10497	Bomag Jumping Jack

**Category: 85- 4 Vibratory plate**

443	Honda S-38 Stone vibrate plate
444	Honda S-38 Stone vibrate plate
445	Honda S-38 Stone vibrate plate
446	Honda RP652 Stone vibrat plate
448	Honda RP652 Stone vibrat plate
449	Honda RP652 Stone vibrat plate
457	Wacker VPG1550R Compactor
458	Wacker VPG1550R Compactor
468	MBW GP20000H 20" Plate Compactor

## EM Equipment List

## Equipment and Components

703	Screed Gas Powered 5section
10439	MBW GP2000H Plate Compactor 20"
10440	MBW GP2000H Plate Compactor 20"
10	MBW GP2000H Plate Compactor 20"
10442	Honda S-38 Stone Vibrate plate
10447	Honda RP652 Stone vibrating plate
10450	MBW Plate Soil 20" Compactor
10463	Allied 1600 Compactor
10464	MBW GP4000H Plate Compactor
10466	MBW GP4000H Plate Compactor
10467	MBW Plate Compactor GP2000H
10469	MBW GP2000H Plate Compactor

**Category: 85- 5 Chainsaw**

1756	Husqvarna Chain Saw 350
1771	Stihl Chain Saw 026
1775	Stihl Chain Saw 026 Pro
11147	Stihl Pole Saw
11635	Stihl MS362C Chainsaw, 20"
11636	Stihl MS362C Chainsaw, 20"
11637	Stihl MS362C Chainsaw, 20"
11638	Stihl MS362C Chainsaw, 20"
11639	Stihl MS362C Chainsaw, 20"
11640	Stihl MS362C Chainsaw, 20"
11743	Husqvarna 390XP 20" Chainsaw
11744	Husqvarna 390XP 20" Chainsaw
11745	Husqvarna 395XP 24" Chainsaw
11746	Husqvarna 395XP 24" Chainsaw
11747	Husqvarna 395XP 24" Chainsaw
11748	Stihl MS362C Chainsaw, 20"
11749	Stihl MS391 20" Chainsaw
11750	Stihl MS391 20" Chainsaw
11752	Stihl Chain Saw 029 - 18"
11753	Stihl MS661 24" & 36" Chainsaw
11754	Stihl MS290 18" chain saw
11755	Husqvarna 365 X-torque chain saw
11757	Stanley Underwater Chainsaw
11758	ITC Powerpack & Cement Chainsaw
11759	Stihl MS290 Chain Saw
11760	Stihl MS193T
11762	Husqvarna Chain Saw 359
11768	Husquavarna 395 Chainsaw
11773	Husqvarna Chain Saw 371
11798	Stihl Chain Saw 16" MiniBoss
11799	Stihl MS270C Chain Saw

**Category: 85- 6 Locator, Metrotech laser**

1172	Locator, Metrotech
2050	Locator, Metrotech laser
2051	Locator, Metrotech laser
2052	Locator, Metrotech laser
2053	Locator, Metrotech laser
2054	Locator, Metrotech laser
2055	Locator, Metrotech laser
2056	Locator, Metrotec laser
2057	Metrotech Locator VLoc-9800
2058	Locator, Metrotech
2059	Locator, Metrotech
2061	Locator, Metrotech laser
2062	Locator, Metrotech laser

**Category: 85- 7 Blower/ Hammers/ Mixer**

887	Stow 6cm Mixer CM6H8
888	Stow 9cm Mixer

## EM Equipment List

## Equipment and Components

889	Stow 6cm Mixer
891	Stow cm6H8 Mixer w/Honda 8hp
892	Stone Mixer 65CM w/Honda 8hp
893	MultiQuip MC62P Mixer
894	Stow 6M6 6cm Mixer
895	Best Mixer 65CM w/Robin EY27W
896	Stow 65CFM Cement Mixer
897	Stow Cement 6CM Mixer
898	Stone Mixer 65cm
899	Stone Mixer 65cm w/Honda G340
1090	9yd Stone Mizer
1107	2005 Stihl BR550 Leaf Blower
1296	Hammer, Kent chipping
1297	Hammer, Kent chipping
1298	Hammer, Kent chipping
1700	General Vent Blower GP8H
1701	General Vent Blower GP8H
1703	General Vent Blower GP8H
1712	General Vent Blower GP8H
1714	Air Sys International Blower
1720	Bosch Rotary Hammer #11248
1721	Bosch Rotary Hammer #11232
1722	Bosch Rotary Hammer #11232
1724	Bosch Rotary Hammer #11248
1725	Bosch Rotary Hammer #11248
1726	Hitachi Roto Hammer SDS Max
1740	Sullair 15# 3" Chipping Hammer
1741	Sullair 30# 1" HX Clay Digger
10883	Multi-Quip MC64PH8 Mixer
10884	Multi-Quip MC64PH8 Mixer
10885	Multi-Quip MC64PH8 Mixer
10886	Multi-Quip MC64PH8 Mixer
10890	Stow 6cm Mixer
11129	Stihl BR550 Backpack Blower
11130	Stihl BR550 Blower
11132	Toro 18" Snowblower, 418ZR
11133	Ariens Deluxe 30" Snowblower
11142	Stihl Backpack blower
11702	General Vent Blower GP8H
11704	General Vent Blower GP8H
11705	General 8" Electric Blower
11706	General 8" Electric Blower
11707	General Vent Blower GP8H
11708	Mopeco Vent Blower MVBGEH
11709	Mopeco Vent Blower MVBGEH
11723	E-Z Drill Horizontal

**Category: 85- 8 Mowers**

1119	Stihl Trimmer FS5S
11109	2005 Lesco 48" Mower
11119	John Deere Z960M/60 Tweel Ztrak
11123	Bobcat Zero-turn mower
11125	Stihl FS90R Trimmer
11141	Stihl Line Trimmer

**Category: 90- 1 980 Cat & W500 Kom Loader**

2200	Rental 980 Loader
10960	2015 Cat 980M Loader *EXEMPT*
10963	2014 Cat 980K Loader *EXEMPT*
10969	2013 Cat 980K Loader *EXEMPT*

**Category: 90- 2 966 Cat Loader**

2201	Rental 966 Loader
10958	2015 Cat 966M Loader *TAX EXEMPT*

**Category: 90- 3 950 Cat Loader**

2202	Rental 950 Cat Loaders
10921	2016 CAT 950M Loader
10	2016 CAT 950M Loader
10923	2015 Cat 950M Loader
10924	2015 Cat 950M Loader
10927	2013 Cat 950K Loader
10928	2013 Cat 950 K Loader
10929	2013 Cat 950K Loader
10937	2004 Cat 950G Series II Loader
10950	1989 Cat 950E Loader
10957	2018 Cat 950M Loader

**Category: 90- 4 936 - 938 - IT-38 Loaders**

2203	Rental 936-938-IT28-IT38 Loader
10925	2013 Cat 938K Loader
10926	2017 Cat 938M Loader

**Category: 90- 5 TH83 (TeleHandler) Loader**

2205	Rental Telehandler
10970	1998 Cat TH83 Telehandler - Loader
10976	JLG SkyTrak Telehandler 54'
10977	2000 Cat TH83 Telehandler - Loader
10979	JLG Skytrak Telehandler54'

**Category: 90- 6 Skid Steer**

2204	Rental Skid Steer
10933	2005 Cat 257B Skidsteer, Rubber track
10934	2003 Cat 247 Skid Steer - Rubber Track
10936	2011 Cat 259B3 Skidsteer
10940	2004 JD 250 II Skid Steer
10942	2018 CAT 299D2XHP Skid Steer
10	2015 Cat 259D Skidsteer
10973	2001 Cat 226 Skid Steer Loader, Rubber tires

**Category: 90- 7 Fork Lift**

935	Massey Ferguson MF204 Forklift
10939	Allis-Chalmers Forktruck
10941	Yale 8,000lb Forklift
10946	Cat V50C Fork Lift

**Category: 95- GPS & Topcon Equipment**

12216	360 Prism 1
12217	360 Prism 2
12218	360 Prism 3
12219	360 Prism 4
12220	360 Prism 5
12221	360 prism 6
12289	Trimble Total Station SPS930
12290	Data Collector TSC3 w/Radio
12291	Data Collector TSC3
12292	Data Collector TSC3 W/ Radio
12293	Base Station SPS855
12294	Base Station SPS855
12295	Base Station SPS855
12296	Rover SPS985
12297	Rover SPS985
12298	Rover SPS985 w Base Opt.
12299	Zephyr Geodetic Antenna
12300	Zephyr Geodetic Antenna
12301	Zephyr Geodetic Antenna
12302	Control Box CB 460
12303	Control Box CB 460
12304	Radio SNR920
12305	Radio SNR920
12306	Mast Antenna MS992



## EM Equipment List

## Equipment and Components

12307	Mast Antenna MS992
12308	Mast Antenna MS992
12309	Mast Antenna MS992
12310	LL500 Rotating Laser w/receiver
12311	LL500 Rotating Laser w/receiver
12312	Nodal Prism
12313	Mast Antenna MS992
12314	Mast Antenna MS992
12315	Base Station SPS855
12316	Zephyr Geodetic Antenna
12317	LL500 Rotating Laser Level
12318	Trimble Total Station SPS930
12319	Control Box CB460
12320	Radio SNR920
12321	Radio - SNR921
12322	Control Box CB460
12323	Mast Antenna MS992
12324	Mast Antenna MS992
12325	Base Station SPS855
12326	Zephyr Geodetic Antenna
12327	Radio SNR921
12329	LL500 Rotating Laser w/receiver
12330	G14 12n Slope Laser
12333	Spectra LL500 Laser Level
12334	Rugbyn 810
12335	Rugby 810 (Rotating lase w/receiver)
12336	Sokkia B30 Level
12338	Control Box-CB460
12339	Mast Antenna - MS995
12340	Mast Antenna - MS995
12341	Base Station - SPS855
12342	Zephyr Geodetic Antenna
12343	Calibration Tool - Angle Sensor
12344	Base Station - SPS855
12345	Rugby 810 (rotating laser w/receiver)
12346	Control Box - Komatsu
12347	Control Box - Komatsu
12348	Mast Antenna - MS995
12349	Mast Antenna - MS995
12350	Control Box CB 460
12351	ST400 Sonic Tracker
12352	ST400 Sonic Tracker
12353	MT-900 Total Station Prism
12354	Rugby 810 (rotating laser w/receiver)
12355	Topcon TP-L5 GV/L Pipe Beam Laser *STOLEN*
12356	Topcon TP-L5 GV/L Pipe Beam Laser
12357	Topcon TP-L5 GV/L Pipe Beam Laser
12358	Topcon TP-L5 GV/L Pipe Beam Laser
12359	Mast Antenna MS995
12360	Mast Antenna MS995
12361	Zeypher Geodetic Antenna
12362	Base Station SPS855
12363	Mast Antenna CB460
12364	Mast Antenna MS995
12365	Control Box CB460
12366	Control Box CB460 (On #10697)
12367	Receiver MS995 (on #10697)
12368	Radio SNR930 (On #10697)
12369	Topcon TP-L5 GV/L Pipe Beam Laser
12370	Topcon TP-L5 GV/L Pipe Beam Laser
12372	Drone

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**EXHIBIT 4**  
**PROJECT EXPERIENCE**

# E.T. MacKenzie Company Completed Projects Profile

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Costco Wholesale East Lansing East Lansing, MI	Costco Wholesale, Inc. 999 Lake Drive Issaquah, WA 98027	Mulvanny G2 Architecture 1101 Second Ave., Ste. 100 Seattle, WA 98101	November 2017	Original \$5,948,885.00 Ending \$7,299,361.00	Jerry Pollock Jackson Dean Construction 3414 South 116th Street Seattle, WA 98168 425-531-1077
Hoover, Greene & Hill Improvements Ann Arbor, MI	City of Ann Arbor 301 East Huron Ann Arbor, MI 48104 734-794-6410		August 2020	Original \$4,692,900.00 Ending \$5,585,055.50	Christopher Wall City of Ann Arbor 301 East Huron Ann Arbor, MI 48104 734-794-6410
Cider Mill Crossings, Phase 4 Tyrone Twp., MI	Sun Cider Mill Crossings, LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034 248-208-2500	Matt Diffin Diffin-Umlor & Associates 49287 West Road Wixom, MI 48393 248-437-7803	November 2019	Original \$3,988,939.35 Ending \$4,445,073.33	Ron Hill Atwell Group LLC Two Towne Square, Ste. 700 Southfield, MI 48076 248-477-2000
Honey Creek, Phase 1 Earthwork, underground utilities Scio Twp., MI	Jack Carnahan HC Investment Holdings, LLC 89 Lake Shore Road Grosse Pointe Farms, MI 48236 248-563-5800		October 2017	Original \$3,722,785.70 Ending \$4,059,244.94	Scott Betzoldt Midwestern Consulting, LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200
Mt Hope Park Phases I/II Delta Township, MI	Delta Charter Township 7710 West Saginaw Hwy Lansing, MI 48917 517-323-8500	Woody Isaacs Viridis Design Group 313 North Burdick Street Kalamazoo, MI 49007 269-585-2051	August 2019	Original \$3,579,300.00 Ending \$3,833,983.04	Ernie West Delta Charter Township 7710 West Saginaw Hwy Lansing, MI 48917 517-323-8500
Oaks of Rockford Phase 2 Cortland Twp., MI	Oaks of Rockford MHC, LLC 11640 Townsquare Blvd. Rockford, MI 49341 248-379-2941	Zack Voogt Moore & Bruggink, Inc. 2020 Monroe NW Grand Rapids, MI 49505 616-363-9801	August 2020	Original \$3,347,506.95 Ending \$3,313,120.36	Brian Fannon Oaks of Rockford MHC, LLC 11640 Townsquare Blvd. Rockford, MI 49341 248-379-2941

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
CRIA Taxiway Turning Improvement Lansing, MI	Capital Region Airport Authority 4100 Capital City Blvd. Lansing, MI 48906	RS&H G-3101 West Bristol Road, Ste. 300 Flint, MI 48507 810-496-6746	June 2017	Original \$3,256,594.25 Ending \$3,879,532.74	Erich Thiel RS&H G-3101 West Bristol Road, Ste. 300 Flint, MI 48507 810-496-6746
Cider Mill Crossings Manufactured Housing Comm. Earthwork and underground utilities Tyrone Twp., MI	Sun Cider Mill Crossings, LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034	Matt Diffin Diffin-Umlor & Associates 53115 Grand River Ave. New Hudson, MI 48165 248-437-7803	December 2016	Original \$2,995,903.30 Ending \$3,234,305.57	Erik Fix Schostak Brothers & Company, Inc. 17800 Laurel Park Drive N., Ste. 200C Livonia, MI 48152 248-262-1000
Grand Ledge 2020 Streets Improvements Grand Ledge, MI	Adam Smith City of Grand Ledge 310 Greenwood Street Grand Ledge, MI 48837 517-627-2149	Wolverine Engineers & Surveyors 312 North Street Mason, MI 48854 517-676-9200	November 2020	Original \$2,767,080.75 Ending \$2,620,716.05	Don Heck, PE Wolverine Engineers & Surveyors 312 North Street Mason, MI 48854 517-676-9200
Pauline Blvd MDOT Contract ID 81000-201737 Washtenaw County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48104 734-794-6410	July 2019	Original \$2,430,900.00 Ending \$2,276,487.99	Igor Kotlyar City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48104 734-794-6410
McLaren Offsite Infrastructure Improvements Lansing, MI	McLaren Greater Lansing 401 West Greenlawn Lansing, MI 48910	C2AE 106 West Allegan Street, Ste. 500 Lansing, MI 48933 517-371-9131	October 2020	Original \$2,387,461.90 Ending \$2,390,442.69	Adam Falkowski C2AE 106 West Allegan Street, Ste. 500 Lansing, MI 48933 517-371-9131
Waverly Shores Village MHC Holland, MI	Waverly Shores Village II LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034	Atwell Group LLC Two Towne Square, Ste. 700 Southfield, MI 48076 248-477-2000	September 2017	Original \$2,325,288.80 Ending \$2,462,592.80	Ron Hill Atwell Group LLC Two Towne Square, Ste. 700 Southfield, MI 48076 248-477-2000
Sunset Ridge Phase 3 Portland, MI	Len Shember Sun Communities Funding II LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034 248-208-2500	Matt Diffin Diffin-Umlor & Associates 49287 West Road Wixom, MI 48393 248-437-7803	October 2018	Original \$2,060,002.15 Ending \$2,844,187.96	Ron Hill Atwell Group LLC Two Towne Square, Ste. 700 Southfield, MI 48076 248-477-2000

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Plymouth & Green Water Main Ann Arbor, MI	City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48104 734-794-6410	City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48104 734-794-6410	December 2017	Original \$2,059,990.00 Ending \$2,690,955.92	Igor Kotlyar City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48104 734-794-6410
Trailwoods 2V Scio Township, MI	Jack Carnahan HC Investment Holdings LLC 1943 Henrietta Street Birmingham, MI 48009 248-563-5800	Midwestern Consulting LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200	July 2019	Original \$1,928,042.89 Ending \$2,342,809.99	Scott Betzoldt Midwestern Consulting LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200
Austin/Sharon Valley/McCollum Bridges MDOT Contract ID 81000-129377 Washtenaw County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Washtenaw County Road Commission 555 Zeeb Road Ann Arbor, MI 48103 734-761-1500	January 2020	Original \$1,920,965.10 Ending \$2,276,219.80	Kelly Jones Washtenaw County Road Commission 555 Zeeb Road Ann Arbor, MI 48103 734-761-1500
Oaks of Rockford Phase 2 Cortland Twp., MI	Brian Fannon Oaks of Rockford MHC, LLC 11640 Townsquare Blvd. Rockford, MI 49341 248-379-2941	Moore & Bruggink, Inc. 2020 Monroe NW Grand Rapids, MI 49505 616-363-9801	November 2018	Original \$1,915,427.25 Ending \$2,189,643.24	Zack Voogt Moore & Bruggink, Inc. 2020 Monroe NW Grand Rapids, MI 49505 616-363-9801
Dansville Schools Earthwork, Underground Utilities Dansville, MI	Amy Hodgson Dansville Schools 1264 Adams Street Dansville, MI 48819	Mark Reile Kingscott & Associates 259 East Michigan Ave., Ste 308 Kalamazoo, MI 49007 269-388-4880	June 2019	Original \$1,900,800.00 Ending \$2,125,672.55	Chad Stahl Miller-Davis Construction 1029 Portage Street Kalamazoo, MI 49001 269-345-3561
Dexter High School Athletic Fields Dexter, MI	Dexter Community Schools 7714 Ann Arbor Street Dexter, MI 48130	Carey Baker Beckett & Raeder 535 West William Street, Ste. 101 Ann Arbor, MI 48103 734-663-2622	December 2019	Original \$1,888,076.00 Ending \$2,053,550.68	Mike Nowosad Granger Construction Company 6267 Aurelius Road Lansing, MI 48911 517-393-1670
Former Detroit House of Corrections Plymouth Township, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Rob Smith ATC Group Service, Inc. 46555 Humboldt Dr., Ste 100 Novi, MI 48377 248-669-5140	June 2017	Original \$1,874,357.00 Ending \$1,785,387.63	Kim Smith E. T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Northpointe at College Fields Meridian Twp., MI	Gary Jones Jones Property Development, LLC c/o Altman Greenfield & Selvaggi, LLP 10960 Wilshire Blvd., Ste. 1900 Los Angeles, CA 90024-3805	Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	November 2017	Original \$1,818,845.55 Ending \$1,818,845.55	Jim Rundquist Jones Property Development, LLC 3800 Hagadorrt Road Okemos, MI 48864 517-333-8900
Volaris Lansing, MI	Waypoint Residential Services, LLC 13355 Noel Road Dallas, TX 75240 214-261-3414	Greg Petru Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	November 2020	Original \$1,814,549.00 Ending \$2,746,635.19	Keith Ikkovich Wieland 4162 English Oak Drive Lansing, MI 48911 517-372-8650
Athens Road Bridge over St. Joseph River Branch County, MI	Branch County Road Commission 23 East Garfield Ave. Coldwater, MI 49036 517-278-2022	Trent Avera Branch County Road Commission 23 East Garfield Ave. Coldwater, MI 49036 517-278-2022	January 2016	Original \$1,756,911.62 Ending \$1,729,126.26	
CRIA Cargo Apron Expansion Earthwork Lansing, MI	Capitol Region International Airport 4100 Capitol City Blvd. Lansing, MI 48906	Nicholas Patterson RS&H 827 Willow Run Airport, 2nd Floor Ypsilanti, MI 48198 810-496-6756	December 2019	Original \$1,755,158.00 Ending \$2,215,865.16	Tony Cardillo Florence Cement Company 51515 Corridor Shelby Twp., MI 48315 586-997-2666
Lakewood 2017 Pump Station Improvements Lake Odessa, MI	Lakewood Wastewater Authority 839 Fourth Ave. Lake Odessa, MI 48849	Fishbeck, Thompson, Carr & Huber 1515 Arboretum Drive, SE Grand Rapids, MI 49546 616-464-3815	July 2020	Original \$1,712,833.20 Ending \$2,119,011.51	Wayne Langeland Fishbeck, Thompson, Carr & Huber 1515 Arboretum Drive, SE Grand Rapids, MI 49546 616-464-3815
Redwood Living @ Texas Twp. Clearing and Earthwork Texas Twp., MI	Redwood Living USA, Inc. 7007 East Pleasant Valley Road Independence, OH 44131 216-360-9441	Ceso, Inc. 175 Montrose West Ave., Ste. 400 Akron, OH 44321 330-396-5676	October 2020	Original \$1,700,739.57 Ending \$1,679,754.17	Steve Schlabach XL Builders LLC PO Box 267 Mount Eaton, OH 44659 330-465-4781

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Hewett, Russell, Russett and Redeemer Water Main Replacement Ann Arbor, MI	City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48107 734-794-6410	City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48107 734-794-6410	August 2016	Original \$1,609,990.00 Ending \$1,587,608.89	David Dykman City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48107 734-794-6410
Ballenger Hwy Bridge MDOT Contract ID 25007-118516 Genesee County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Genesee County Road Commission 211 West Oakley Street Flint, MI 48503 810-767-4920	May 2016	Original \$1,609,504.58 Ending \$1,605,669.74	John Plamondon Genesee County Road Commission 211 West Oakley Street Flint, MI 48503 810-767-4920
Courtyard By Marriott Site work, underground utilities, site concrete, road construction Mt. Pleasant, MI	Darrell Herbruck Mt. Pleasant Hospitality 5225 East Pickard Street Mt. Pleasant, MI 48858 989-773-2400	Tim BeBee CMS&D 310 West Pickard Street, Ste. C Mt. Pleasant, MI 48858 989-775-0756	March 2016	Original \$1,580,950.00 Ending \$1,924,734.64	Jim Fifarek Pioneer Construction 550 Kirtland Street, SW Grand Rapids, MI 49507 616-247-6966
John Earl Drain Eaton County, MI	Eric Deible Eaton County Drain Commission 1045 Independence Blvd. Charlotte, MI 48813 517-543-3809	Spicer Group 1400 Zeeb Drive St. Johns, MI 48879 989-224-2355	August 2020	Original \$1,552,735.60 Ending \$1,486,722.50	Chris Mattson Spicer Group 1400 Zeeb Drive St. Johns, MI 48879 989-224-2355
Austin Road Bridge MDOT Contract ID 81013-115681 Washtenaw County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Washtenaw County Road Commission 555 North Zeeb Road Ann Arbor, MI 48103 734-761-1500	January 2016	Original \$1,472,194.53 Ending \$1,443,086.81	Kelly Jones Washtenaw County Road Commission 555 North Zeeb Road Ann Arbor, MI 48103 734-761-1500
Eberspacher NA Addition Earthwork, sanitary sewer, storm sewer, water Brighton, MI	Eberspacher North America 2035 Orndorf Drive Brighton, MI 48116	Wayne Perry Desine, Inc. 2183 Pless Drive Brighton, MI 48114 810-227-9533	May 2016	Original \$1,402,996.65 Ending \$1,408,506.76	Mark Jeffries Corrigan Construction 775 North Second Street Brighton, MI 48116 810-229-6323

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Elkhart County Jail Demo Goshen, IN	Elkhart County Board of Commissioners 117 North Second Street Goshen, IN 46526 574-534-9394		December 2020	Original \$1,391,392.80 Ending \$1,181,392.14	Tom Rushlow, P.E. Elkhart County Board of Commissioners 117 North Second Street Goshen, IN 46526 574-534-9394
Lift Station 102 and 501 Clinton County, MI	Brad Gurski SCCMUA 3671 West Herbison Road DeWitt, MI 48820 517-669-8311	C2AE 106 West Allegan Street, Ste. 500 Lansing, MI 48933 517-371-1200	December 2017	Original \$1,372,155.00 Ending \$1,410,914.35	Brian Van Zee C2AE 106 West Allegan Street, Ste. 500 Lansing, MI 48933 517-371-1200
Bayberry Chase Apartments Cascade Twp., MI	Norm VanDonselaar Bayberry Chase One LLC 2651 Grove Circle Commerce Twp., MI 48382 216-360-9441	Mark Belmont CESO, Inc. 395 Springside Drive, Ste. 202 Akron, OH 44333 330-665-0660	July 2018	Original \$1,312,152.75 Ending \$1,316,979.53	Steve Schlabach X.L. Builders PO Box 267 Mt. Eaton, OH 44659 330-465-5255
Shield Road Bridge over Mill Creek MDOT Contract ID 81161-126689 Dexter, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Washtenaw County Road Commission 555 North Zeeb Road Ann Arbor, MI 48103 734-751-1500	February 2018	Original \$1,309,909.93 Ending \$1,281,146.28	Kelly Jones Washtenaw County Road Commission 555 North Zeeb Road Ann Arbor, MI 48103 734-751-1500
Gander Mountain - Lansing Earthwork, underground utilities Delta Twp., MI	Gander Mountain Company 180 East Fifth Street, Ste. 1300 St. Paul, MN 55101	Opus Design Build LLC 3610 River Crossing Parkway, Ste. 230 Indianapolis, IN 46240 317-816-5728	August 2016	Original \$1,269,925.00 Ending \$1,206,041.00	Eric Boehner Opus Design Build LLC 3610 River Crossing Parkway, Ste. 230 Indianapolis, IN 46240 317-816-5728
Arlington Woods Webster Twp., MI	Norfolk Development 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777	Scott Betzoldt Midwestern Consulting, LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200	December 2018	Original \$1,260,108.75 Ending \$1,337,451.31	Sean Lefere Norfolk Development 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777



Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Songbird Way Delta Twp., MI	Unified Group, LLC 6250 West Michigan Ave. Lansing, MI 48917 517-316-4415	Paul Furtaw Bergmann Associates 7050 West Saginaw Hwy Lansing, MI 48917 517-272-9835	July 2017	Original \$1,240,442.00 Ending \$1,289,308.30	John Peckham Unified Group, LLC 6250 West Michigan Ave. Lansing, MI 48917 517-316-4415
Paw Paw Laundry Paw Paw, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Sarat Bobba DLZ Michigan, Inc. 535 South Burdick Street, Ste. 248 Kalamazoo, MI 49007 269-553-0640	September 2017	Original \$1,230,245.00 Ending \$782,911.89	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Ashley Capital Water Main Delta Twp., MI	Marty Gorski Ashley Delta, LLC 2575 South Haggerty Rd, Ste. 500 Canton, MI 48188 773-490-4815	Webb Engineering, Inc. 3315 North Campbell Road, Ste. 200 Royal Oak, MI 48073 248-783-1105	October 2018	Original \$1,229,397.40 Ending \$1,424,072.93	Joe Webb Webb Engineering, Inc. 3315 North Campbell Road, Ste. 200 Royal Oak, MI 48073 248-783-1105
Bristol Rd & Atlas Rd Bridges Genesee County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Genesee County Road Commission 211 West Oakley Street Flint, MI 48503 810-767-4920	November 2016	Original \$1,226,547.54 Ending \$1,274,890.00	Alex Patsy Genesee County Road Commission 211 West Oakley Street Flint, MI 48503 810-767-4920
Moon Lake Road Bridge MDOT Contract ID 38000-133156 Jackson County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Casey Collings Great Lakes Engineering Group, LLC 521 Seymour Ave. Lansing, MI 48933 517-363-4400	August 2020	Original \$1,217,926.42 Ending \$1,221,982.69	Bret Taylor Jackson Co. Dept. of Transportation 2400 North Elm Ave. Jackson, MI 49201 517-788-4230
Manufactured Gas Plant Sites St. Johns, MI	Consumers Energy 1945 West Parnall Road Jackson, MI 49201 517-788-2160	Consumers Energy 1945 West Parnall Road Jackson, MI 49201 517-788-2160	September 2019	Original \$1,154,782.00 Ending \$1,113,823.12	Brian Trent Consumers Energy 1945 West Parnall Road Jackson, MI 49201 517-788-2160

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Selkirk Lake Drain Wayland Twp., MI	Denise Medemar Allegan County Drain Commission 113 Chestnut Street Allegan, MI 49010 269-673-0440	ENG. Engineering & Surveying 4063 Grand Oak Drive, Ste. A109 Lansing, MI 48911 517-887-1100	May 2019	Original \$1,141,880.35 Ending \$1,195,938.12	Brian Cenci, PE ENG. Engineering & Surveying 4063 Grand Oak Drive, Ste. A109 Lansing, MI 48911 517-887-1100
Ferguson Plumbing Site Earthwork, underground utilities Lansing Twp., MI	Allen Atkinson Ferguson Enterprises, Inc. 12500 Jefferson Ave. Newport News, VA 23602-43114 757-874-7795	Brent LaVanwa Boss Engineering 3121 East Grand River Ave. Howell, MI 48843 800-246-6735	March 2018	Original \$1,111,483.00 Ending \$1,129,901.85	Matt Raizow O'Neal Construction 525 West William Ann Arbor, MI 48103 734-769-0770
Kaiser Optical Scio Twp., MI	Kaiser Optical Systems 371 Parkland Plaza Ann Arbor, MI 48103 734-665-8083	Context Design 12 South Main Street, Ste. 200 Fortville, IN 46040 317-485-6900	May 2017	Original \$1,106,537.00 Ending \$1,385,126.14	Bill Poland Genesis Property Development 514 North Harrison Street Shelbyville, IN 46176 317-363-1292
Sunset Drive Road Extension Pottsville, MI	Wanda Darrow City of Pottsville 319 North Nelson Street Pottsville, MI 48876	Williams & Works 549 Ottawa Ave NW Grand Rapids, MI 49503 616-224-1500	May 2018	Original \$1,092,653.85 Ending \$1,712,108.42	Brandon Mieras Williams & Works 549 Ottawa Ave NW Grand Rapids, MI 49503 616-224-1500
West Herbison Road MDOT Contract ID 19000-130450 DeWitt, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Clinton County Road Commission 3536 South US Hwy. 27 St. Johns, MI 48879 989-224-3274	November 2017	Original \$1,084,541.31 Ending \$1,112,435.18	Dan Armentrout Clinton County Road Commission 3536 South US Hwy. 27 St. Johns, MI 48879 989-224-3274
MacAllister Rentals Delta Twp., MI	Tarbert Properties, Inc. 6300 Southeastern Ave. Indianapolis, IN 46203	Nederveld 217 Grandville Ave., Ste. 302 Grand Rapids, MI 49503	November 2020	Original \$1,067,719.85 Ending \$1,727,642.68	Jay Hostetler Shiel Sexton Company, Inc. 902 North Capitol Ave. Indianapolis, IN 46201 317-423-6064

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Whitehills Lakes South Meridian Twp., MI	Signature Land Development 1188 East Paris Ave. SE, Ste. 100 Grand Rapids, MI 616-988-1324	Greg Petru KEBS, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	July 2018	Original \$1,065,395.05 Ending \$1,084,037.50	Mike McGraw Eastbrook Homes 1188 East Paris Ave. SE, Ste. 100 Grand Rapids, MI 49546 616-988-1324
Pepper Ridge Delta Twp., MI	Norm Van Donseelaar Redwood Living 7007 East Pleasant Valley Road Independence, OH 44131 216-254-8425	Paul Furtaw Bergmann Associates 7050 West Saginaw Hwy. Lansing, MI 48917 517-272-9835	July 2017	Original \$1,031,208.85 Ending \$1,148,168.15	Wayne Schlabach X.L. Builders PO Box 267 Mt. Eaton, OH 44659 330-465-5255
Lyons Dam Contract 1 and 2 Lyons, MI	Ionia Conservation District 431 Swartz Ct. #300 Ionia, MI 48846 616-527-2620	Sandy Verry Ellen River Partners 21689 Birch Street Grand Rapids, MN 55744 218-301-9504	October 2016	Original \$953,605.00 Ending \$1,182,204.40	Melissa Eldridge Ionia Conservation District 431 Swartz Ct. #300 Ionia, MI 48846 616-527-2620
Creekside Athletic Fields Dexter, MI	Dexter Community Schools 7714 Ann Arbor Street Dexter, MI 48130	Carey Baker Beckett & Raeder 535 West William Street, Ste. 101 Ann Arbor, MI 48103 734-663-2622	December 2019	Original \$949,124.00 Ending \$1,039,367.65	Mike Nowosad Granger Construction Company 6267 Aurelius Road Lansing, MI 48911 517-393-1670
Woodland Corrections Housing Units Demo Whitmore Lake, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Christopher Kostner Materials Testing Consultants 693 Plymouth Ave. NE Grand Rapids, MI 49505 616-456-5469	May 2018	Original \$936,116.00 Ending \$1,070,697.00	Kim Smith E.T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Westchester Farm, Phase 1 Sylvan Twp., MI	NDC of Sylvan, LTD 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777	Bob Warty Washtenaw Engineering 3250 West Liberty Road Ann Arbor, MI 48106 734-761-8800	June 2018	Original \$930,338.25 Ending \$941,220.58	Sean Lefere Norfolk Development Corp. 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Broadway Street Bridge over St. Joe River MDOT Contract ID 12016-122983 Union City, Branch County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Jason Early FTCH 39500 Mackenzie Drive Novi, MI 48377 248-342-2120	October 2017	Original \$922,458.38 Ending \$913,687.36	Chris Mathis City of Union City 208 North Broadway Street Union City, MI 49094 517-741-8591
Central Middle School Demolition Midland, MI	Michael Moegenberg Midland Public Schools 600 East Carpenter Street Midland, MI 48640 989-615-0579	Barton Malow 26500 American Drive Southfield, MI 48034 248-436-5000	May 2016	Original \$899,486.00 Ending \$903,770.74	Daryl Dombrow Barton Malow 26500 American Drive Southfield, MI 48034 248-436-5000
Eyde Clark Road Mass Grading DeWitt Twp., MI	Louis J. Eyde Family LLC 2947 Eyde Parkway, Ste. 200 East Lansing, MI 48823 517-351-2480	Sam Eyde Louis J. Eyde Family LLC 2947 Eyde Parkway, Ste. 200 East Lansing, MI 48823 517-351-2480	December 2020	Original \$873,640.00 Ending \$876,860.00	
Pepper Ridge Phase 2 Delta Twp., MI	Norm Van Donselaar Redwood Living 7007 East Pleasant Valley Road Independence, OH 44131 216-254-8425	Paul Fertaw Bergmann Associates 7050 West Saginaw St., Ste. 200 Lansing, MI 48917 517-272-9835	September 2018	Original \$865,726.65 Ending \$841,652.58	Steve Schlabach X.L. Builders PO Box 267 Mt. Eaton, OH 44659 330-465-5255
2020 Utility Improvements Ann Arbor, MI	City of Ann Arbor 301 East Huron Ann Arbor, MI 48104 734-794-6410	City of Ann Arbor 301 East Huron Ann Arbor, MI 48104 734-794-6410	October 2020	Original \$861,457.60 Ending \$825,301.52	Brian Slizewski City of Ann Arbor 301 East Huron Ann Arbor, MI 48104 734-794-6410
Sunset Ridge Manufactured Housing Comm. Earthwork and underground utilities Portland Twp., MI	Sun Communities Funding II, LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034	Matt Diffin Diffin-Umlor & Associates 53115 Grand River Ave. New Hudson, MI 48165 248-437-7803	October 2016	Original \$842,141.70 Ending \$885,647.73	Erik Fix Schostak Brothers & Company, Inc. 17800 Laurel Park Drive N., Ste. 200C Livonia, MI 48152 248-262-1000

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Big Ditch Drain St. Johns, MI	City of St. Johns 100 East State Street, Ste. 1100 St. Johns, MI 48879	Spicer Group 1400 Zeeb Drive St. Johns, MI 48879 989-224-2355	July 2019	Original \$815,695.25 Ending \$772,045.23	Robert Briggs Spicer Group 1400 Zeeb Drive St. Johns, MI 48879 989-224-2355
Old River Trail MDOT Contract ID 23000-201173 Eaton County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909		January 2020	Original \$808,428.43 Ending \$809,902.97	Ryan Arend Moore & Bruggink 2020 Monroe Ave. NW Grand Rapids, MI 49505 616-363-9801
Windham Hills MHC, Phase 5 Earthwork and underground utilities Jackson, MI	Sun Secured Financing, LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034	Jack Ripstra Ripstra & Scheppelmann, Inc. 2535 Spring Arbor Road Jackson, MI 49203 517-789-9898	December 2016	Original \$791,204.25 Ending \$783,779.38	Erik Fix Schostak Brothers & Company, Inc. 17800 Laurel Park Drive N., Ste. 200C Livonia, MI 48152 248-262-1000
Delhi Collection System Improvements Delhi Twp., MI	Delhi Charter Township 2074 Aurelius Road Holt, MI 48842 517-694-2135	Hubbell, Roth & Clark 555 Hulet Drive, PO Box 824 Bloomfield Hills, MI 48303-0824 248-454-6300	August 2019	Original \$783,503.25 Ending \$894,165.27	Prasad Gullapalli Hubbell, Roth & Clark 555 Hulet Drive, PO Box 824 Bloomfield Hills, MI 48303-0824 248-454-6300
groSolar Delta Solar Power 2 Nixon Delta Twp., MI	EDF Renewables Distributed Solutions, Inc. 5 Commerce Ave. West Lebanon, NH 03784 802-359-6539	Paul Fertaw Bergmann Associates 7050 West Saginaw St., Ste. 200 Lansing, MI 48917 517-272-9835	August 2018	Original \$780,166.00 Ending \$1,227,137.11	Tom Lyman EDF Renewables Distributed Solutions, Inc. 5 Commerce Ave. West Lebanon, NH 03784 802-359-6539
Eastern Field Lansing, MI	Todd Coe Lansing School District 519 West Kalamazoo Lansing, MI 48933 517-755-3030	Rusti Owens C2AE 106 West Allegan Lansing, MI 48933	November 2019	Original \$778,090.00 Ending \$830,194.00	Rob Crowe The Christman Company 208 North Capitol Lansing, MI 48933 517-482-1488

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Lake Pleasant Road Bridge Hillsdale County, MI	Hillsdale County Road Commission 1915 Hudson Road Hillsdale, MI 49242 517-437-4450	John Sanders Hillsdale County Road Commission 1915 Hudson Road Hillsdale, MI 49242 517-437-4450	June 2020	Original \$772,055.58 Ending \$748,998.27	
Vista at College Fields Earthwork and underground utilities Meridian Twp., MI	Gary Jones Jones Property Development, LLC c/o Altman Greenfield & Selvaggi, LLP 10960 Wilshire Blvd., Ste. 1900 Los Angeles, CA 90024-3805	Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	June 2016	Original \$760,000.00 Ending \$791,770.00	Jim Rundquist Jones Property Development, LLC 3800 Hagadorn Road Okemos, MI 48864 517-333-8900
West John Street Development Corunna, MI	Joseph Sawyer City of Corunna 402 North Shiawassee Street Corunna, MI 48817 989-743-3650	CZAE 106 West Allegan Street, Ste. 500 Lansing, MI 48933 517-371-1200	November 2018	Original \$744,960.70 Ending \$742,762.34	Cory Davis, PE CZAE 106 West Allegan Street, Ste. 500 Lansing, MI 48933 517-371-1200
Former Ramada Hotel Building demolition Mt. Morris, MI	Cheryl McHallam Genesee Co Land Bank Authority 452 Saginaw Street, 2nd Floor Flint, MI 48502 810-257-3088	Ryan Londrigan AKT Peerless 214 Janes Ave. Saginaw, MI 48607 989-754-9896	March 2016	Original \$744,333.56 Ending \$752,755.00	Kim Smith E.T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Bent Oak Hwy Bridge Lenawee County, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Lenawee County Road Commission 2461 Treat Hwy. Adrian, MI 49221 517-265-6971	December 2016	Original \$739,691.38 Ending \$768,974.13	Scott Merillat Lenawee County Road Commission 2461 Treat Hwy. Adrian, MI 49221 517-265-6971
Grandhaven Manor II Lansing, MI	Grandhaven Manor II, LLC 950 Taylor Ave. Grand Haven, MI 49417 616-842-2425	Greg Petru Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	April 2018	Original \$727,700.00 Ending \$928,618.05	Dennis Reenders Reenders, Inc. 950 Taylor Ave. Grand Haven, MI 49417 616-842-2425

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Leisure Village MHC Expansion Belmont, MI	Len Shember Leisure Village Mobile Home Park 27777 Franklin Road, Ste. 200 Southfield, MI 48034 248-208-2500	Eric Lord Atwell Group LLC Two Towne Square, Ste. 700 Southfield, MI 48076 248-477-2000	June 2018	Original \$686,723.00 Ending \$725,497.15	Ron Hill Atwell Group LLC Two Towne Square, Ste. 700 Southfield, MI 48076 248-477-2000
West Grand River Demos East Lansing, MI	100 Grand River LLC 540 West Madison Ave., Ste. 2500 Chicago, IL 60661 312-542-3123	Chris Oakley 100 Grand River LLC 540 West Madison Ave., Ste. 2500 Chicago, IL 60661 312-542-3123	December 2017	Original \$652,557.00 Ending \$729,474.00	
Fowlerville CS Athletics and Parking Renovations Fowlerville, MI	Wayne Roedel Fowlerville Community Schools 7677 West Sharpe Road, Ste. A Fowlerville, MI 48836	Dave Mielock Mielock Associates, Inc. 114 Rayson Street, Ste. 2C Northville, MI 48167 248-349-2708	April 2020	Original \$644,385.00 Ending \$677,152.00	Richard Gorski George W. Auch Company 65 University Drive Pontiac, MI 48342 248-322-5516
Wind Trace Delta Twp., MI	Nixon Road Holdings, LLC 4248 West Saginaw Hwy. Grand Ledge, MI 48837 517-627-8408	KEBS, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	December 2017	Original \$640,000.00 Ending \$666,734.00	Ron Clark Nixon Road Holdings, LLC 4248 West Saginaw Hwy. Grand Ledge, MI 48837 517-627-8408
Peckham Riverside Call Center Earthwork, underground utilities Lansing, MI	Nate Vanderlaan Peckham Industries 2571 North MLK Jr. Blvd. Lansing, MI 48906	Paul Furtaw Bergman Associates 7050 West Saginaw Hwy Lansing, MI 48917 517-272-9835	November 2016	Original \$630,670.00 Ending \$824,163.00	Justin Bialik Pioneer Construction 550 Kirtland Street SW Grand Rapids, MI 616-247-6966
Red Cedar Flats, Phase 1 Earthwork Meridian Twp., MI	Red Cedar Flats, LLC 2380 Science Parkway #101 Okemos, MI 48864 517-347-1980	Jeff Kyes Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	May 2017	Original \$607,400.00 Ending \$805,144.00	Bernie Aulgur Oakwood Construction 2380 Science Parkway #101 Okemos, MI 48864 517-347-1980

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
1400 Alpine Ave. Site Grand Rapids, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Eric Walters Fleis & VandenBrink 2960 Lucerne Drive SE, Ste. 100 Grand Rapids, MI 49546 616-977-1000	July 2018	Original \$592,323.00 Ending \$367,900.90	Kim Smith E.T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
MSUFUCU Holt Branch Holt, MI	Eric Bowdell MSU Federal Credit Union 3777 West Road East Lansing, MI 48823	Neuwmann Smith 400 Galleria offcentre, Ste. 555 Southfield, MI 48034 248-352-8310	September 2020	Original \$573,600.00 Ending \$722,459.74	Andrea Andres Granger Construction Company 8267 Aurelius Road Lansing, MI 48911 517-393-1670
Walnut Park Apartments	Tony Knoble Walnut Park LLC 333 North Pennsylvania St., Ste. 100 Indianapolis, IN 46204 317-264-1833	Andrew Walters Metro Consulting Associates LLC 45345 Five Mile Road Plymouth, MI 48170 734-483-1427	August 2018	Original \$566,625.00 Ending \$665,277.94	Randy Swinford TWG Development 333 North Pennsylvania St., Ste. 100 Indianapolis, IN 46204 317-264-1833
Lansing Botanical Company and Process Facility Lansing, MI	Go Greener, LLC 4520 Nroth Grand River Ave. Lansing, MI 48906 517-749-3511	Eric Iverson LSG 3135 Pine Tree Road, Ste. D Lansing, MI 48911 517-393-2902	September 2020	Original \$554,288.91 Ending \$839,085.76	Rich Lienhart Go Greener, LLC 4520 Nroth Grand River Ave. Lansing, MI 48906 517-749-3511
Former Salzburg Cleaners Bay City, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Joe Noykos Soil & Materials Engineers, Inc. 1501 West Thomas Street Bay City, MI 48706 989-684-6050	November 2019	Original \$534,565.00 Ending \$388,449.14	Kim Smith E.T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Zoller Building Ann Arbor, MI	Zoller Properties, LLC 3753 Plaza Drive Ann Arbor, MI 48108	Mannik Smith Group 2365 Haggerty Road South Canton, MI 48188	June 2018	Original \$532,746.00 Ending \$802,522.63	Matt Ratzow O'Neal Construction 525 West William Ann Arbor, MI 48103 734-769-0770



Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
groSolar Delta Solar Power 1 Delta Twp., MI	EDF Renewables Distributed Solutions, Inc. 5 Commerce Ave. West Lebanon, NH 03784 802-359-6539	Paul Fertaw Bergmann Associates 7050 West Saginaw St., Ste. 200 Lansing, MI 48917 517-272-9835	May 2018	Original \$528,914.00 Ending \$575,686.86	Tom Lyman EDF Renewables Distributed Solutions, Inc. 5 Commerce Ave. West Lebanon, NH 03784 802-359-6539
Ashford Manor #3 and Point West #3 Earthwork and underground utilities Delta Twp., MI	Eastbrook Homes 1188 East Paris Ave. SE, Ste. 100 Grand Rapids, MI 49546 616-988-1324	Jeff Kyles Kebes, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	May 2016	Original \$522,855.30 Ending \$877,710.32	Mike McGraw Eastbrook Homes 1188 East Paris Ave. SE, Ste. 100 Grand Rapids, MI 49546 616-988-1324
Holiday Inn Okemos Meridian Twp., MI		Jeff Kyles KEBS, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-8047	October 2017	Original \$519,430.00 Ending \$551,967.88	David Tremonti Oliver/Hatcher Construction 27333 Meadowbrook Road, Ste. 100 Novi, MI 48377 248-374-1100
Air Lift Addition Site work Delta Township, MI	Rob Lisk Air Lift Company 2727 Snow Road Lansing, MI 48917 517-999-2146	Kevin Eidson WLP Associates 3001 Fuller NE, Ste. 1 Grand Rapids, MI 49505 616-454-1746	June 2019	Original \$518,593.00 Ending \$533,918.25	Kim Beyers Constructors, Inc. 1965 Waldorf NW Grand Rapids, MI 49544 616-791-7000
Livingston No. 29 Drain Iosco Twp., MI	Ken Recker Livingston Co. Drain Commissioner 2300 East Grand River, Ste. 105 Howell, MI 48843	ENG. Engineering & Surveying 4063 Grand Oak Drive, Ste. A109 Lansing, MI 48911 517-887-1100	July 2019	Original \$514,158.25 Ending \$544,868.81	Brian Cenci, PE ENG. Engineering & Surveying 4063 Grand Oak Drive, Ste. A109 Lansing, MI 48911 517-887-1100
Village Place Phase IV Grand Ledge, MI	Nixon Road Holdings, LLC 4248 West Saginaw Hwy. Grand Ledge, MI 48837 517-627-8408	Jeff Kyles KEBS, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	April 2017	Original \$492,733.82 Ending \$336,412.87	Ron Clark Nixon Road Holdings, LLC 4248 West Saginaw Hwy. Grand Ledge, MI 48837 517-627-8408

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Delta Mills Canoe Launch	Delta Charter Township 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8500	Woody Isaacs Viridis Design Group 313 North Burdick Street Kalamazoo, MI 49007 269-585-2051	October 2019	Original \$485,000.00 Ending \$535,652.68	Ernie West Delta Charter Township 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8500
Howell Medical	SDS Properties 2265 East Grand River Ave. Howell, MI 48843 517-372-3440	Greg Petru Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	November 2017	Original \$477,921.85 Ending \$481,276.85	Joe Biersbach Biersbach Construction LLC 1905 Danbury East Okemos, MI 517-281-1168
City of Flint - Admin Building	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Paul Meyer Environmental Consulting & Tech, Inc. 3125 Sovereign Drive, #9c Lansing, MI 48911 517-272-9200	October 2019	Original \$474,185.00 Ending \$274,590.31	Kim Smith E.T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Goshen Inn Demo	City of Goshen 204 East Jefferson Street, Ste. 2 Goshen, IN 46528 574-537-3816		January 2017	Original \$457,480.00 Ending \$457,480.00	Keitha Windsor City of Goshen 204 East Jefferson Street, Ste. 2 Goshen, IN 46528 574-537-3816
Grand Ledge Library Parking Lot	City of Grand Ledge 310 Greenwood Street Grand Ledge, MI 48837	Rusti Owens C2AE 106 West Allegan, Ste. 500 Lansing, MI 48933	March 2018	Original \$448,415.00 Ending \$716,075.54	Adam Smith City of Grand Ledge 310 Greenwood Street Grand Ledge, MI 48837 517-627-2149
Oliver Towers	Mark Clouse George F. Eyde Family LLC 300 South Washington Square, Ste. 400 Lansing, MI 48933 517-351-2480	Jeff Kyes Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	December 2019	Original \$443,980.53 Ending \$608,936.69	Dan Wittum Wieland 4162 English Oak Drive Lansing, MI 48911 517-372-8650

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Caro Center Building demolition Caro, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Chris Kesther Materials Testing Consultants 693 Plymouth Ave. NE Grand Rapids, MI 49505 616-456-5469	January 2019	Original \$432,557.00 Ending \$366,945.76	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Sears Facility #1140 Site Kentwood, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Jean Talanda ATC Group Services LLC 4519 Broadmoor SE Grand Rapids, MI 49512 616-698-3131	March 2018	Original \$428,990.00 Ending \$351,035.84	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
MBS Terminal Bldg Demo Freeland, MI	MBS Airport Commission 8500 Garfield Road Freeland, MI	RS&H 827 Willow Run Airport, Second Floor Ypsilanti, MI 48198 810-496-6742	May 2018	Original \$416,412.00 Ending \$450,266.00	Pat Frame RS&H 827 Willow Run Airport, Second Floor Ypsilanti, MI 48198 810-496-6742
West Willow Canoe Launch Delta Twp., MI	Delta Charter Township 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8500	Woody Isaacs Viridis Design Group 313 North Burdick Street Kalamazoo, MI 49007 269-585-2051	June 2019	Original \$415,700.00 Ending \$432,766.07	Ernie West Delta Charter Township 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8500
LESA Buidling Additions Earthwork, underground utilities Howell, MI	Livingston Educational Service Agency 1425 West Grand River Ave. Howell, MI 48843 517-546-5550	Thom Dumond Boss Engineering 3121 East Grand River Ave. Howell, MI 48842 800-246-6735	December 2016	Original \$411,431.00 Ending \$404,534.71	Matt McSweeney O'Neal Construction 525 West William Ann Arbor, MI 48103 734-769-0770
Grandeur Oaks Lane Ann Arbor, MI	John Petz DF Land Development 24 Frank Lloyd Wright Dr., Ste. K3000 Ann Arbor, MI 48106 734-930-4533	Midwestern Consulting, LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200	August 2016	Original \$405,312.40 Ending \$461,693.30	Tom Covert Midwestern Consulting, LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200

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groSolar Delta Solar Power 2 Mt Hope Delta Twp., MI	EDF Renewables Distributed Solutions, Inc. 5 Commerce Ave. West Lebanon, NH 03784 802-359-6539	Paul Fertaw Bergmann Associates 7050 West Saginaw St., Ste. 200 Lansing, MI 48917 517-272-9835	August 2018	Original \$392,642.00 Ending \$546,145.12	Tom Lyman EDF Renewables Distributed Solutions, Inc. 5 Commerce Ave. West Lebanon, NH 03784 802-359-6539
Hamlin Manufactured Housing Comm. Earthwork and underground utilities Webberville, MI	Sun Pool 12, LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034	Brent LaVarway Boss Engineering 3121 East Grand River Ave. Howell, MI 48843 8080-246-6735	October 2016	Original \$390,745.65 Ending \$408,919.15	Erik Fix Schostak Brothers & Company, Inc. 17800 Laurel Park Drive N., Ste. 200C Livonia, MI 48152 248-262-1000
Michigan Pure Med Lansing, MI	Great Lakes Farms Properties LP PO Box 794 Birmingham, MI 48012	Designteam Plus, LLC 975 East Maple Road, Ste. 210 Birmingham, MI 48009	October 2020	Original \$385,022.43 Ending \$268,841.14	David Schatzberg Venator Contracting Group, LLC 44930 Vic Wertz Drive Clinton Twp., MI 48036
Cornwell Farms Ann Arbor Twp., MI	Alex deParry Ann Arbor Builders, Inc. 202 East Madison Street Ann Arbor, MI 48014 734-761-8990	Midwestern Consulting 3815 Paza Drive Ann Arbor, MI 48108 734-995-0200	June 2018	Original \$382,615.00 Ending \$694,061.23	Heath Hart Midwestern Consulting 3815 Paza Drive Ann Arbor, MI 48108 734-995-0200
Howell - MC Legacy Howell, MI	Trilogy Health Services 303 N Hurstbourne Pkwy, Ste. 200 Louisville, KY 40222	Mannik Smith Group 23225 Mercantile Road Beachwood, OH 44122 216-378-1490	May 2020	Original \$378,691.00 Ending \$692,945.99	Dan Spenthoff DMK Development Group, LLC 9300 Shelbyville Road, Ste. 800 Louisville, KY 40222 502-822-0336
Friedland Industries Warehouse Expansion Lansing, MI	Friedland Industries 405 East Maple Street Lansing, MI 48906 517-482-3000	DC Engineering 1210 North Cedar Street, Ste B Lansing, MI 48906 517-853-7866	November 2020	Original \$370,950.60 Ending \$382,830.76	Brian Stiebe Laux Construction 1018 Hogsbeck Road Mason, MI 48854 517-694-0117

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Former Days Inn Demo Delta Twp., MI	Saginaw Road Investments, LLC 30500 Northwestern Hwy., Ste 525 Farmington Hills, MI 48334		June 2016	Original \$365,500.00 Ending \$389,037.40	Eric Helzer Advance Redevelopment Solutions PO Box 204 Eagle, MI 48822 517-648-2434
Stoneco Overburden Removal Freedom Twp., MI	Michigan Materials & Aggregates Co. PO Box 600 Thornville, OH 43076 734-364-3235		March 2019	Original \$364,220.50 Ending \$464,720.50	Kristine Rorke Michigan Materials & Aggregates Co. PO Box 600 Thornville, OH 43076 734-364-3235
City Gate Eagle Twp., MI	Consumers Energy Company One Energy Plaza Jackson, MI 49201-2357 517-788-1934		December 2019	Original \$358,734.66 Ending \$366,564.46	Thomas Guess Consumers Energy Company One Energy Plaza Jackson, MI 49201-2357 517-788-1934
Belaire Hills Lift Station Delta Twp., MI	Charter Township of Delta 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8540		April 2016	Original \$342,177.25 Ending \$342,177.25	Gary Arnald Charter Township of Delta 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8540
2900 Huron Parkway Ann Arbor, MI	Darren McKinnon First Martin Corp 115 Depot Street Ann Arbor, MI 48107 734-994-5050	Emily McKinnon Smith Group JRR 201 Depot Street, Second Floor Ann Arbor, MI 48104 734-662-4457	July 2019	Original \$315,994.60 Ending \$419,805.67	Tim Stout O'Neal Construction Co. 525 West William Ann Arbor, MI 48103 734-769-0770
Former Matthews Service Station Vernon, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Scott Parks DLZ 1425 Keystone Ave Lansing, MI 48911 517-908-4923	April 2021	Original \$314,884.00 Ending \$254,850.12	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Blossom Road Culvert over Spencer Creek Branch County, MI	Branch County Road Commission 23 East Garfield Ave. Coldwater, MI 49036 517-278-2022		April 2017	Original \$313,708.00 Ending \$284,260.80	Trent Avey Branch County Road Commission 23 East Garfield Ave. Coldwater, MI 49036 517-278-2022
M-43 Culvert over Porter Drain Eaton County, MI	Eric Deible Eaton County Drain Commission 1045 Independence Blvd. Charlotte, MI 48813 517-543-3809	LSG Engineers & Surveyors, Inc. 3135 Pinetree Road Lansing, MI 48911 517-393-2902	August 2019	Original \$313,550.50 Ending \$354,259.30	Greg Lamkin LSG Engineers & Surveyors, Inc. 3135 Pinetree Road Lansing, MI 48911 517-393-2902
Rose Harbor Marina Monroe, MI	Ray Govus State of Michigan - EGLE 301 East Louis Glick Hwy. Jackson, MI 49201 517-780-7690	Craig Savage ECT, Inc. 2200 Commonwealth Blvd., Ste. 300 Ann Arbor, MI 48105 734-769-3004	July 2020	Original \$312,631.00 Ending \$176,679.01	Kim Smith E.T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Ridge Creek Lane Ann Arbor Twp., MI	John Petz DF Land Development 24 Frank Lloyd Wright Dr., Ste. K3000 Ann Arbor, MI 48106 734-930-4533	Midwestern Consulting, LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200	August 2016	Original \$304,097.95 Ending \$430,500.73	Tom Coveit Midwestern Consulting, LLC 3815 Plaza Drive Ann Arbor, MI 48108 734-995-0200
Dexter Manufacturing Phase 2 Addition Earthwork Dexter, MI	Dexter Fastener Technologies, Inc. 2110 Bishop Circle East Dexter, MI 48130 734-426-5200	Christopher Grizenkowicz Desine, Inc. 2183 Pless Drive Brighton, MI 48114 810-227-9533	December 2016	Original \$303,072.00 Ending \$320,132.93	Matt Raitzow O'Neal Construction 525 West William Ann Arbor, MI 48103 734-769-0770
M&K Investment Group Saginaw, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Jon Hirschenberger AKT Peerless 214 James Ave Saginaw, MI 48607 989-754-9896	April 2017	Original \$298,776.00 Ending \$235,313.36	Kim Smith E.T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Lake Lansing Rd/Interstate Earthwork East Lansing, MI	Joe Biersbach Biersbach Development 1905 Danbury East Okemos, MI 517-349-2558	Bergmann Associates 7050 West Saginaw Hwy Lansing, MI 48917 517-272-9835	June 2016	Original \$294,700.00 Ending \$406,041.85	Paul Furtaw Bergmann Associates 7050 West Saginaw Hwy Lansing, MI 48917 517-272-9835
Felton Road Building Site Earthwork, underground utilities Watertown Twp., MI	Emerger Development 4520 North Grand River Ave. Lansing, MI 48906	Jeff Kyes Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	June 2016	Original \$292,550.00 Ending \$317,270.00	James Ware James Ware Construction 903 North Clay Street, Ste. A Sturgis, MI 49091 269-651-4747
Trowbridge Crossings East Lansing, MI	Boji Group 124 West Allegan Street, Ste. 2100 Lansing, MI 48933 517-377-3000		September 2017	Original \$292,180.00 Ending \$298,994.00	Keith Kelley Boji Group 124 West Allegan Street, Ste. 2100 Lansing, MI 48933 517-377-3000
Jiffy Site Street Garage Parking Lot Chelsea, MI	Douglas Weitting Chelsea Milling Company 201 West North Street Chelsea, MI 48118 734-475-1361		February 2020	Original \$291,593.90 Ending \$447,995.51	Matt Ratzow O'Neal Construction 525 West William Ann Arbor, MI 48103 734-769-0770
Monroe Commerical Development Frenchtown Twp., MI	Joe Guilmette Pacifica Monroe LLC 1775 Hancock Street, Ste. 200 San Diego, CA 92110 616299-3286	Bergmann Associates 7050 West Saginaw St., Ste. 200 Lansing, MI 48917 517-272-9835	May 2019	Original \$286,561.17 Ending \$328,166.26	Richard Blasey Bergmann Associates 7050 West Saginaw St., Ste. 200 Lansing, MI 48917 517-272-9835
Jackson Prison Bldg Demos Jackson, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Steven Kimm Fleis & Vandenbrink Engineering 4798 Campus Drive Kalamazoo, MI 49008 269-385-0011	June 2018	Original \$278,516.00 Ending \$302,543.62	Kim Smith E. T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Cooley Stadium North Parking Lot Lansing, MI	Alec Malvetis City of Lansing 124 West Michigan Ave. Lansing, MI 48933 517-483-4455	Brett Konarski Jones Petrie Rafinski 412 South Lafayette Blvd. South Bend, IN 46601 574-293-7762	May 2016	Original \$272,250.00 Ending \$291,094.97	Nate Hubert The Christman Company 208 North Capital Ave. Lansing, MI 48933-1357 517-482-1488
Bailey Park Improvements East Lansing, MI	Nick Wallace Landscape Architects & Planners 809 Center Street, Ste. 1 Lansing, MI 48906 517-485-5500	Wendy Wilmers Longpre City of East Lansing 410 Abbot Road East Lansing, MI 48823 517-319-6940	October 2020	Original \$266,663.70 Ending \$296,146.46	
2015 Sidewalk Repair Project concrete sidewalks Lansing, MI	City of Lansing 124 West Michigan Ave, 8th Floor Lansing, MI 48933 517-483-4124	City of Lansing 124 West Michigan Ave, 8th Floor Lansing, MI 48933 517-483-4124	August 2016	Original \$262,415.75 Ending \$518,311.98	Zubair Ahmad City of Lansing 124 West Michigan Ave, 8th Floor Lansing, MI 48933 517-483-4124
Winewood Sanitary Sewer Extension Ann Arbor, MI	Norfolk Development 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777	Kern-TEX 22556 Gratiot Ave. Eastpointe, MI 48021	June 2018	Original \$260,113.00 Ending \$247,407.00	Sean Lefere Norfolk Development 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777
Bridge Street Sunoco Site remediation Grand Rapids, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Corey Buckner Superior Environmental 1128 Franklin Court Marne, MI 49435	July 2019	Original \$259,624.00 Ending \$117,126.45	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Ham Creek Trail Bridge Missaukee County, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Northwest Design Group 2940 Parkview Drive Petoskey, MI 49770 231-348-1185	March 2017	Original \$255,915.00 Ending \$210,547.10	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408



Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Lake Lansing Retail Site Lansing, MI	Doraid Markus Markus Associates LLC 251 East Merrill, Ste. 205 Birmingham, MI 48009 248-892-2222	James Butler PEA, Inc. 2430 Rochester Court, Ste. 100 Troy, MI 48063 248-689-9090	October 2019	Original \$255,083.30 Ending \$305,259.25	Jen Haight NCS Construction Services, LLC 43636 Woodward Ave., Ste. 400 Bloomfield Hills, MI 48302 248-338-9732
North Creek Elementary Parking Lot Improvements Chelsea, MI	Denis Taylor Chelsea School District 500 East Washington Street Chelsea, MI 48118 734-433-2200	Kingscott Associates, Inc. 229 East Michigan Ave., Ste. 335 Kalamazoo, MI 49007 269-381-4880	September 2016	Original \$250,507.20 Ending \$288,269.16	Robert Atkins Kingscott Associates, Inc. 229 East Michigan Ave., Ste. 335 Kalamazoo, MI 49007 269-381-4880
Frances Park Pump Station Forcement Repair Lansing, MI	City of Lansing 124 West Michigan Ave. Lansing, MI 48933 517-483-4455	Alec Malvetis City of Lansing 124 West Michigan Ave. Lansing, MI 48933 517-483-4455	October 2019	Original \$250,000.00 Ending \$250,000.00	
Taco Bell - Dunckel Road Lansing, MI	Old West Properties 7915 Kenningson Ct. Brighton, MI 48116	Desine, Inc. 2183 Pless Drive Brighton, MI 48116 810-227-9533	December 2016	Original \$240,720.00 Ending \$283,897.96	Mark Keating Keating Contracting LLC 22775 Heslip Drive Novi, MI 48375 248-730-9339
Creyts Road Pump Station Rehabilitation Dimondale, MI	Village of Dimondale 136 Bridge Street Dimondale, MI 48821	Wolverine Engineers & Surveyors 312 North Street Mason, MI 48854 517-676-9200	April 2019	Original \$230,894.00 Ending \$237,667.30	Don Heck Wolverine Engineers & Surveyors 312 North Street Mason, MI 48854 517-676-9200
Camp White Lake Demolition White Lake, MI	Bruce Hassen State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Jennifer Fashbaugh FTC&H 39500 Mackenzie Drive, Ste. 100 Novi, MI 48377 248-324-2090	May 2016	Original \$229,146.00 Ending \$213,853.52	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Winans Elementary School Parking Lot Delta Twp., MI	Waverly Community Schools 515 Snow Road Lansing, MI 48917 517-321-7265	Barton Malow 26500 American Drive Southfield, MI 48034 586-524-1396	August 2016	Original \$227,720.00 Ending \$228,638.00	Eric Sifferman Barton Malow 26500 American Drive Southfield, MI 48034 586-524-1396
Grace Bible Church Ann Arbor, MI	Grace Bible Church 1300 South Maple Road Ann Arbor, MI	Midwestern Consulting 3815 Paza Drive Ann Arbor, MI 48108 734-995-0200	October 2018	Original \$226,855.95 Ending \$255,090.25	Matt Ratzow O'Neal Construction 525 West William Ann Arbor, MI 48103 734-769-0770
Taco Bell Charlotte Charlotte, MI	Joseph Baker Sundance, Inc. 7915 Kensington Court Brighton, MI 48116 248-446-0100	Jim Barnwell Desine, Inc. 2183 Pless Drive Brighton, MI 48114 810-227-9533	August 2019	Original \$226,520.00 Ending \$237,220.05	Mark Keating Keating Contracting LLC 22775 Heslip Drive Novi, MI 48375 248-730-9339
C&C Landfill Clearing Marshall, MI	Republic Services 6231 MacBeth Road Fort Wayne, IN 46809 260-442-3239	Stephanie Goodman Republic Services 6231 MacBeth Road Fort Wayne, IN 46809 260-442-3239	April 2021	Original \$222,900.00 Ending \$222,900.00	
Evergreen Apts. Demo East Lansing, MI	341 Evergreen LLC 540 West Madison Street, Ste. 2500 Chicago, IL 60661 312-542-3123	Christopher Oakly Convexity Properties, LLC 540 West Madison Street, 27th Floor Chicago, IL 60661-2555 312-542-3123	August 2016	Original \$217,645.00 Ending \$217,645.00	
Village of Shadow Glen Phase 4 Delta Twp., MI	Nixon Road Holdings, LLC 4248 West Saginaw Hwy. Grand Ledge, MI 48837 517-627-8408	AJ Patrick KEBS, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	November 2016	Original \$213,061.00 Ending \$158,600.00	Ron Clark Nixon Road Holdings, LLC 4248 West Saginaw Hwy. Grand Ledge, MI 48837 517-627-8408

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Parlen Management Burton, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Mark Schult Mannik-Smith Group 2365 Haggerty Road South Canton, MI 48188 734-397-3100	July 2017	Original \$205,750.00 Ending \$122,387.49	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Delta Mills UM Church Parking Lot Addition Lansing, MI	Delta Mills United Methodist Church 6809 Delta River Drive Lansing, MI 48906 517-285-2486	James Foster, PE Ziemnick Foster Engineering 426 South Clinton Street Grand Ledge, MI 48837 517-627-8068	November 2020	Original \$203,868.23 Ending \$214,124.48	Dave Stanaway Delta Mills United Methodist Church 6809 Delta River Drive Lansing, MI 48906 517-285-2486
Maple Village Water Main Improvements Ann Arbor, MI	Brixmor Property Group 22054 Farmington Road Farmington, MI 48336		December 2016	Original \$202,961.50 Ending \$222,646.07	Russell McCombie Ken Cook's Plumbing & Heating, Inc. 3704 Trade Center Drive Ann Arbor, MI 48108 734-971-0304
Pine Elementary School Demo Grand Rapids, MI	Wolverine Building Group 4045 Barden SE Grand Rapids, MI 49512 616-949-3360		April 2019	Original \$200,600.00 Ending \$205,253.00	Brian Steinberg Wolverine Building Group 4045 Barden SE Grand Rapids, MI 49512 616-949-3360
Michigan Flyer Compensating Cut Leroy Twp., MI	Chad Cushman Howard Street, LLC 109 East Comstock Street Owosso, MI 48867	Eric Iversen, P.E. LSG Engineers & Surveyors 3135 Pine Tree Road, Ste. D Lansing, MI 48911 517-393-2902	May 2020	Original \$187,496.30 Ending \$193,701.55	John Peckham Peckham Property Services PO Box 716 East Lansing, MI 48826 517-290-4650
Fairview Elementary Lansing, MI	Lansing School District 519 West Kalamazoo Street Lansing, MI 48933 517-755-1000	C2AE 106 West Allegan St. #500 Lansing, MI 48933 517-371-1200	December 2016	Original \$186,650.00 Ending \$235,706.33	John Bedard The Christman Company 634 Front Ave., NW, Ste. 500 Grand Rapids, MI 49504-5335 616-454-4454

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Lyders Hangar Howell, MI	Hawk Hollow Farm LLC 7915 Kensington Court Brighton, MI 48116 248-736-8403	Desine, Inc. 2183 Pless Drive Brighton, MI 48114 810-227-9533	October 2017	Original \$178,600.00 Ending \$199,237.56	John Pettersson Hawk Hollow Farm LLC 7915 Kensington Court Brighton, MI 48116 248-736-8403
Jackson College Tree Clearing Jackson, MI	Jackson College 2111 Emmons Road Jackson, MI 49201 517-796-8439		November 2016	Original \$177,800.00 Ending \$148,505.00	Darrell Norjris Jackson College 2111 Emmons Road Jackson, MI 49201 517-796-8439
Signature Oak Stables Gregory, MI	Robert & Elizabeth Haar 3607 Kipling Circle Howell, MI 48843	Washtenaw Engineering 3526 West Liberty Road, Ste. 400 Ann Arbor, MI 48106	November 2016	Original \$175,038.35 Ending \$188,894.07	Mike Shepard Mike Shepard Excavating, Inc. 7150 Chamberlin Road Dexter, MI 48130
A&H Racing Site Gladwin, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Jon Hirschenberger AKT Peerless 214 James Ave. Saginaw, MI 48607 989-754-9896	January 2016	Original \$174,049.00 Ending \$157,960.20	Kim Smith E. T. Mackenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Costco Wetland Mitigation East Lansing, MI	Costco Wholesale, Inc. 999 Lake Drive Issaquah, WA 98027	King & MacGregor Environmental, Inc. 2520 Woodmeadow SE Grand Rapids, MI 49546 616-957-1231	December 2017	Original \$169,539.20 Ending \$180,810.20	John Vigna King & MacGregor Environmental, Inc. 2520 Woodmeadow SE Grand Rapids, MI 49546 616-957-1231
Compost Pad Construction Ann Arbor, MI	City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48107 734-764-6350	City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48107 734-764-6350	April 2016	Original \$169,104.00 Ending \$131,990.43	Chris Elenbaas City of Ann Arbor 301 East Huron Street Ann Arbor, MI 48107 734-764-6350

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Delta Fire Station #3 Driveway Repair Delta Twp., MI	Delta Charter Township 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8500		August 2019	Original \$165,974.00 Ending \$161,144.93	Ernie West Delta Charter Township 7710 West Saginaw Hwy. Lansing, MI 48917 517-323-8500
Grove Road Ypsilanti Twp., MI	Washtenaw County Road Commission 555 North Zeeb Road Ann Arbor, MI 48103 734-761-1500		November 2019	Original \$154,319.50 Ending \$176,148.40	Aaron Berkholz Washtenaw County Road Commission 555 North Zeeb Road Ann Arbor, MI 48103 734-761-1500
Ann Arbor Transfer Station Ann Arbor, MI	City of Ann Arbor 301 East Huron Ann Arbor, MI 48104 734-794-6410	City of Ann Arbor Field Operations 4251 Stone School Road Ann Arbor, MI 48108 734-794-6350	June 2020	Original \$153,492.00 Ending \$153,492.00	Ron Hoeft City of Ann Arbor Field Operations 4251 Stone School Road Ann Arbor, MI 48108 734-794-6350
Old US-12 Bridge Coldwater, MI	City of Coldwater One Grand Street Coldwater, MI 49036 517-279-6911	Fishbeck, Thompson, Carr & Huber 39500 Mackenzie Drive, Ste. 100 Novi, MI 48377 248-324-2090	June 2018	Original \$147,585.00 Ending \$169,601.03	Fishbeck, Thompson, Carr & Huber, Inc. 39500 Mackenzie Drive, Ste. 100 Novi, MI 48377 248-324-2090
Munger Sunoco Site Lapeer, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Mark Schult Mannik-Smith Group 2365 Haggerty Road South Canton, MI 48188 734-397-3100	November 2016	Original \$147,195.00 Ending \$56,007.30	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Fire Station #8 Concrete Apron Repair Lansing, MI	City of Lansing 124 West Michigan Ave. Lansing, MI 48933 517-483-4455		September 2017	Original \$146,544.00 Ending \$177,265.32	Stephanie Robinson City of Lansing 124 West Michigan Ave. Lansing, MI 48933 517-483-4455

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New Water Booster Pump Station Holland, MI	Len Shember Waverly Shores Village II LLC 27777 Franklin Road, Ste. 200 Southfield, MI 48034		June 2020	Original \$144,241.15 Ending \$137,296.15	Douglas Pakkala, P.E. Atwell, LLC Two Town Square Southfield, MI 48076 248-447-2000
	Risdale Westside Bleachers Ph 3 Concrete work Lansing, MI	City of Lansing 1110 South Pennsylvania Ave. Lansing, MI 48912 517-702-6197	July 2019	Original \$134,288.50 Ending \$135,149.74	Stephanie Robinson City of Lansing 1110 South Pennsylvania Ave. Lansing, MI 48912 517-702-6197
2018 Site Improvements Lansing, MI	Jeff Adcock Emergent BioSolutions 3500 N Martin Luther King Jr Blvd Lansing, MI 48906 517-327-6819	Eng. Engineering & Surveying 4063 Grand Oak Drive, A109 Lansing, MI 48911 517-887-1100	November 2018	Original \$132,460.00 Ending \$146,996.00	Michael Gazella Eng. Engineering & Surveying 4063 Grand Oak Drive, A109 Lansing, MI 48911 517-887-1100
M-50 Retaining Wall MDOT Contract ID 58032-M61701 Dundee, MI	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	Jim Daavettilla Michigan Dept. of Transportation Brighton TSC 10321 Grand River Ave, Ste 500 Brighton, MI 48116 810-227-4681	January 2018	Original \$132,340.37 Ending \$142,426.09	Jim Daavettilla Michigan Dept. of Transportation Brighton TSC 10321 Grand River Ave, Ste 500 Brighton, MI 48116 810-227-4681
North Oak Office Center Bldg 4 Parking Lot Ann Arbor, MI	Commercial Property Investors of Scio LLC 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777	Midwestern Consulting 3815 Plaza Drive Ann Arbor, MI 48108	December 2019	Original \$129,144.10 Ending \$120,959.84	David Darkowski Commercial Property Investors of Scio LLC 8178 Jackson Road Ann Arbor, MI 48103 734-408-0777
Plant 3 Clarifier Removal Lansing, MI	David Favero RACER Trust Property 500 Woodward Ave., Ste. 1510 Detroit, MI 48226 217-741-6235	Eng. Engineering 4063 Grand Oak Drive, Ste. A109 Lansing, MI 48911 517-887-1100	June 2016	Original \$127,884.00 Ending \$214,314.01	Greg Minshall Eng. Engineering 4063 Grand Oak Drive, Ste. A109 Lansing, MI 48911 517-887-1100

Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
Sawyers Pontiac Demolition East Lansing, MI	CKJ Properties, LLC 2375 Woodlake Drive, Ste. 380 Okemos, MI 48864 517-908-0900	Kebs, Inc. 2116 Haslett Road Haslett, MI 48840 517-339-1014	September 2020	Original \$127,456.67 Ending \$139,706.03	Richard Lowe CKJ Properties, LLC 2375 Woodlake Drive, Ste. 380 Okemos, MI 48864 517-908-0900
Jaycee Park Improvements Grand Ledge, MI	Adam Smith City of Grand Ledge 310 Greenwood Street Grand Ledge, MI 48837 517-627-2149	Spicer Group 1400 Zeeb Drive St. Johns, MI 48879 989-224-2355	August 2019	Original \$126,544.00 Ending \$139,157.76	Joe Wright Spicer Group 1400 Zeeb Drive St. Johns, MI 48879 989-224-2355
M. Midcalf Site Hemlock, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Kevin Saggaser Saggaser & Associates 699 South Wisconsin Ave. Gaylord, MI 49735 989-732-5800	August 2016	Original \$125,390.00 Ending \$87,070.43	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Sparrow Ramp Demo Lansing, MI	Sparrow Health System 1322 East Michigan Ave., Ste. 300 Lansing, MI 48912 517-364-2783	Alan Henry Sparrow Health System 1322 East Michigan Ave., Ste. 300 Lansing, MI 48912 517-364-2783	January 2019	Original \$120,112.00 Ending \$119,112.00	
Fox Nissan Site Meridian Twp., MI	Green Castle Properties, LLC 200 Ottawa Ave. NW, Ste. 800 Grand Rapids, MI 49503	Green Castle Properties, LLC 200 Ottawa Ave. NW, Ste. 800 Grand Rapids, MI 49503	January 2019	Original \$117,488.52 Ending \$96,821.22	
M-66 Storm Sewer and Curb Repairs Ionia County, MI	Ionia County Road Commission 170 East Riverside Drive Ionia, MI 48846 616-527-1700	Ionia County Road Commission 170 East Riverside Drive Ionia, MI 48846 616-527-1700	August 2016	Original \$117,100.80 Ending \$130,374.35	Paul Spitzley Ionia County Road Commission 170 East Riverside Drive Ionia, MI 48846 616-527-1700

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Garfield Road over I-69	Michigan Dept. of Transportation State Transportation Building 425 West Ottawa Street PO Box 30050 Lansing, MI 48909	MIDOT - Marshall TSC 15300 West Michigan Ave Marshall, MI 269-789-0592	December 2017	Original \$116,994.00 Ending \$127,432.88	Andy Strupijulis MIDOT - Marshall TSC 15300 West Michigan Ave Marshall, MI 269-789-0592
Lennon Road Demo Lennon, MI	Michigan Land Bank Fast Track Authority 300 North Washington Square, 4th Floor Lansing, MI 48913 517-241-6741	Linda Horak Michigan Land Bank Fast Track Authority 300 North Washington Square, 4th Floor Lansing, MI 48913 517-241-6741	June 2019	Original \$116,900.00 Ending \$116,900.00	
Allmendinger Parking Lot Ann Arbor, MI	Darren McKinnon South First Associates 115 Depot Street Ann Arbor, MI 48104	Smith Group	September 2016	Original \$113,199.00 Ending \$113,199.00	Matt McSweeney O'Neal Construction 525 West William Ann Arbor, MI 48103 734-769-0770
Fieldstone Village II Chelsea, MI	Norfolk Development Corp. 8178 Jackson Road, Ste. D Ann Arbor, MI 48103 734-408-0777	Atwell-Hicks, Inc. 500 Avis Drive, Ste. 100 Ann Arbor, MI 48108	July 2017	Original \$111,509.00 Ending \$155,252.20	David Darkowski Norfolk Development Corp. 8178 Jackson Road, Ste. D Ann Arbor, MI 48103 734-408-0777
Blanchard Grocery Crystal, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Paul Meyer ECT, Inc. 3125 Sovereign Drive, Ste. 9C Lansing, MI 48911 517-272-9200	August 2016	Original \$106,829.00 Ending \$93,580.40	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408
Ypsilanti District Library Superior Branch Ypsilanti, MI	Ypsilanti District Library 8795 McArthur Blvd. Ypsilanti, MI 48198 734-482-4110	Daniels and Zermack Associates, Inc. 2080 South State Street Ann Arbor, MI 48104 734-761-2090	November 2020	Original \$105,670.00 Ending \$105,670.00	Matt Ratzow O'Neal Construction, Inc. 525 West William Ann Arbor, MI 48103 734-769-0770



Project Name	Owner	Engineer	Date Completed	Contract Amount	Reference
South Campus Soil Remediation Delta Twp., MI	Auto-Owners Insurance Company 6101 Anacapi Blvd. Lansing, MI 48917 517-323-8760		March 2019	Original \$104,667.08 Ending \$358,434.75	Brian Hiesrodt Auto-Owners Insurance Company 6101 Anacapi Blvd. Lansing, MI 48917 517-323-8760
JC Beal Construction Demolition Ann Arbor, MI	JC Beal Construction 221 Felch Street Ann Arbor, MI 48103 734-662-6133		July 2017	Original \$103,710.00 Ending \$114,848.00	Jeff Lasweil JC Beal Construction 221 Felch Street Ann Arbor, MI 48103 734-662-6133
Former R. Ayotte Property Byron, MI	State of Michigan Dept of Tech, Management & Budget PO Box 30026 Lansing, MI 48909	Scott Park DLZ Michigan, Inc. 1425 Keystone Ave. Lansing, MI 48911 517-393-6800	June 2016	Original \$101,237.00 Ending \$75,652.79	Kim Smith E.T. MacKenzie Company, LLC 4248 West Saginaw Hwy Grand Ledge, MI 48837 517-627-8408