

**FINANCE DEPARTMENT  
DIVISION OF PURCHASES & SUPPLIES**



Sheldon A. Neeley, Mayor

**CITY OF FLINT PROPOSAL NO.21000546**

**ROBERT T. LONGWAY REHABILITATION PROJECT - CE**

Date Posted: 09/04/20

# **CITY OF FLINT PROPOSAL NO. 21000546**

## **ROBERT T LONGWAY REHABILITATION PROJECT - CE**

On Tuesday, March 10, 2020, Governor Gretchen Whitmer declared a State of Emergency after two individuals were confirmed testing presumptively positive for COVID-19. On Thursday, March 12, 2020, Mayor Sheldon A. Neeley declared a local State of Emergency to exist in the City of Flint as a result of the threat of COVID-19. On Sunday, March 15, 2020, effective March 17, 2020, Mayor Neeley, based on the COVID-19 public health threat, closed City Hall to the public. Residents were asked to take precautionary measures. On March 22, 2020, Mayor Neeley asked residents to participate in a voluntary shelter in place. City Council approved the continuation of the declaration of a State of Emergency.

Based on the White House guidelines issued on March 16, 2020, and these guidelines are still in place. It is recommended that people not gather in groups larger than 10 people in order to "flatten" the curve and slow the spread of the virus. On March 24, 2020, Governor Whitmer instituted Executive Order 2020-21, a temporary requirement to suspend activities that are not necessary to sustain or protect life, prohibiting "in-person" work with exceptions for essential and critical infrastructure workers.

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**CITY OF FLINT**  
**FINANCE DEPARTMENT**  
**DIVISION OF PURCHASES AND SUPPLIES**  
City Hall, 1101 S. Saginaw Street, Room #203 – Flint, Michigan 48502  
(810) 766-7340      [www.cityofflint.com](http://www.cityofflint.com)



Sheldon Neeley  
Mayor

**REQUEST FOR PROPOSALS**

**OWNER/RETURN TO:**

THE CITY OF FLINT  
FINANCE DEPARTMENT – DIVISION OF PURCHASES AND SUPPLIES  
1101 S. SAGINAW ST., ROOM 203, 2nd FLOOR  
FLINT, MI 48502

**PROPOSAL NO: 21000546**

**SCOPE OF WORK:**

The City of Flint, Finance Department of Purchases & Supplies, is soliciting sealed bids for providing:

**ROBERT T. LONGWAY REHABILITATION PROJECT - CE**

Per the attached additional requirements.

Submit to City: One (1) electronic copy of the proposal must be emailed by  
Wednesday, October 14, 2020 by 3:00 PM (EST)

The files must not be password- protected and must be capable of being copied  
to other media.

Please email Electronic copy of proposal to: [purchasingbids@cityofflint.com](mailto:purchasingbids@cityofflint.com)

One (1) MAILED and/or Drop Off Copy unbound hardcopy with "ORIGINAL"  
signature MUST be received by Wednesday, October 14, 2020, 4:30 PM (EST)

Mailing Instructions: The City of Flint - Division of Purchases and Supplies  
1101 S. Saginaw St  
Flint, MI 48502

Effective immediately upon release of these Bidding Documents, and until notice of contract award, all  
official communications from proposers regarding the requirements of this Bid shall be directed to:

Joyce A. McClane  
810-766-7340  
[jmcclane@cityofflint.com](mailto:jmcclane@cityofflint.com)



The City, or designee, shall distribute all official changes, modifications, responses to questions or notices relating to the requirements of this Bid. Addendum to this Bid may be developed and shared with all Vendors. Any other information of any kind from any other source shall not be considered official, and proposers relying on other information do so at their own risk.

**NOTICE TO VENDOR** Offers, subject to the conditions made a part hereof, will be received at this office, **1101 S. Saginaw St., Flint, MI 48502 for the following:**

**ROBERT T. LONGWAY REHABILITATION PROJECT - CE**

All additional proposal documents, requirements, addendums, specifications, and plans/drawings (if utilized) are available on the Purchasing page of the City of Flint's web site at <https://www.cityofflint.com/finance/purchasing/bids-2/> under "open bids" and the specific bid or proposal number assigned to this notice.

New vendors should complete and submit a vendor application, IRS W-9 Form, and Vendor ACH Payment Authorization Form with the City of Flint. Links to these forms are available at <https://www.cityofflint.com/finance/accounts-payable-department/>.

Results may be viewed next business day online EXCEPT when a bid is under review. The bidders/public will only see the names of the bidders that submitted a bid, not their cost. This will protect the bidders cost in case there is a re-bid. <https://www.cityofflint.com/finance/purchasing/results/> under "bid results".

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City of Flint has partnered with BidNet as part of the [MITN Purchasing Group](#) (branded page link) to post bid opportunities to this site. As a vendor, you can register with the [MITN Purchasing Group](#) and be sure that you see all available bids and opportunities. By selecting automatic bid notification, your company will receive emails once the City of Flint has a bid opportunity that matches your company's business. In addition, the site handles bid opportunities, RFPs, and RFQs for other member governmental agencies throughout Michigan. City of Flint looks forward to providing you with more bid information and simplifying the entire bid, proposal, and quote processes for everyone involved. We appreciate your cooperation and welcome your participation. If you need help registering, please call the MITN Purchasing Group support department toll free 1-800-835-4603 option #2.

Link to City of Flint open solicitations:

[MITN Purchasing Group](#) (branded page link)

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Any questions regarding the proposal process may be directed to Joyce McClane in writing by no later than 9-02-20 by 4:30 PM to [jmcclane@cityofflint.com](mailto:jmcclane@cityofflint.com).

Sincerely,



Joyce A. McClane, CPPB Purchasing Manager

## INSTRUCTIONS TO VENDORS

- 1) **PRE-BID INFORMATION AND QUESTIONS:** Each bid that is timely received will be evaluated on its merit and completeness of all requested information. In preparing bids, Bidders are advised to rely only upon the contents of this Request for Proposals (RFP) and accompanying documents and any written clarifications or addenda issued by the City of Flint. If a Bidder finds a discrepancy, error or omission in the RFP package, or requires any written addendum thereto, the Bidder is requested to notify the Purchasing contact noted on the cover of this RFP, so that written clarification may be sent to all prospective Bidders. **THE CITY OF FLINT IS NOT RESPONSIBLE FOR ANY ORAL INSTRUCTIONS.** All questions must be submitted in writing to the Finance Department of Purchases and Supplies before any pre-bid deadline (if specified) or at least one (1) week prior to the proposal opening date indicated on the front of this document.
- 2) **RFP MODIFICATIONS:** The City of Flint has the right to correct, modify or cancel the RFP, in whole or in part, or to reject any Bid, in whole or in part, within the discretion of the City of Flint, or their designee. If any such changes are made, all known recipients of the RFP will be sent a copy of such changes. If any changes are made to this RFP document by any party other than the City of Flint, the original document in the City of Flint's files takes precedence.
- 3) **PROPOSAL SUBMISSION:**
  - a) The Bidder must include the following items, or the proposal may be deemed non-responsive:
    - i) All forms contained in this RFP, fully completed.
  - b) Bids must be submitted to the Finance Department of Purchases and Supplies, City of Flint, 1101 S. Saginaw Street, Room 203, Flint, Michigan 48502 by the date and time indicated as the deadline. The Purchasing Department time stamp will determine the official receipt time. It is each Bidder's responsibility to insure that their proposal is time stamped by the Purchasing Department by the deadline. This responsibility rests entirely with the Bidder, regardless of delays resulting from postal handling or for any other reasons. Proposals will be accepted at any time during the normal course of business only, said hours being 8:00 a.m. to 5:00 p.m. local time, Monday through Friday, legal holidays as exception.
  - c) Bids must be enclosed in a sealed, non-transparent envelope, box or package, and clearly marked on the outside with the following: RFP Title, RFP Number, Deadline and Bidder's name.
  - d) Submission of a bid establishes a conclusive presumption that the Bidder is thoroughly familiar with the Request for Proposals (RFP), and that the Contractor understands and agrees to abide by each and all of the stipulations and requirements contained therein.
  - e) All prices and notations must be typed or printed in ink. No erasures are permitted. Mistakes may be crossed out and corrections must be initialed in ink by the person(s) signing the bid.
  - f) Proposals sent by email, facsimile, or other electronic means will not be considered unless specifically authorized in this RFP.
  - g) All costs incurred in the preparation and presentation of the bid are the Bidder's sole responsibility; no pre-bid costs will be reimbursed to any Bidder. All documentation submitted with the proposal will become the property of the City of Flint.
  - h) Proposals must be held firm for a minimum of 120 days.

- 4) **EXCEPTIONS:** Bidder shall clearly identify any proposed deviations from the Terms or Scope in the Request for Proposals. Each exception must be clearly defined and referenced to the proper paragraph in this RFP. The exception shall include, at a minimum, the proposed substitute language and opinion as to why the suggested substitution will provide equivalent or better service and performance. If no exceptions are noted in the bid, the City of Flint will assume complete conformance with this specification and the successful Bidder will be required to perform accordingly. Bids not meeting all requirements may be rejected.
- 5) **DUPLICATE BIDS:** No more than one (1) bid from any Bidder including its subsidiaries, affiliated companies and franchises will be considered by the City of Flint. In the event multiple proposals are submitted in violation of this provision, the City will have the right to determine which bid will be considered or, at its sole option, reject all such multiple proposals.
- 6) **WITHDRAWAL:** Bids may only be withdrawn by written notice prior to the date and time set for the opening of bids. No bid may be withdrawn after the deadline for submission.
- 7) **REJECTION/GOOD STANDING:** The City of Flint reserves the right to reject any or all bids, or to accept or reject any bid in part, and to waive any minor informality or irregularity in bids received if it is determined by the City of Flint, or their designee, that the best interest of the City will be served by doing so. No bid will be considered from any person, firm or corporation in arrears or in default to the City on any contract, debt, taxes or other obligation, or if the Bidder is debarred by the City of Flint from consideration for a contract award pursuant to Section 18-21.5 (d) of Article IV of the "Purchasing Ordinance of the City of Flint".
- 8) **PROCUREMENT POLICY:** Procurement for the City of Flint will be handled in a manner providing fair opportunity to all businesses. This will be accomplished without abrogation or sacrifice of quality and as determined to be in the best interest of the City. The City of Flint and their officials have the vested authority to execute a contract, subject to City Council and Mayoral approval where required.
- 9) **BID SIGNATURES:** Bids must be signed by an authorized official of the Bidder. Each signature represents binding commitment upon the Bidder to provide the goods and/or services offered to the City of Flint if the Bidder is determined to be the lowest Responsive and Responsible Bidder.
- 10) **CONTRACT AWARD/SPLIT AWARDS:** The City of Flint reserves the right to award by item and/or group of items. The Bidder to whom the award is made will be notified at the earliest possible date. Tentative acceptance of the bid, intent to recommend award of a contract and actual award of the contract will be provided by written notice sent to the Bidder at the address designated in the bid if a separate Agreement is required to be executed. After a final award of the Agreement by the City of Flint, the Contractor/Vendor must execute and perform said Agreement. All proposals must be firm for at least 120 days from the due date of the proposal. If, for any reason, a contract is not executed with the selected Bidder within 14 days after notice of recommendation for award, then the City may recommend the next lowest responsive and responsible Bidder.
- 11) **NO RFP RESPONSE:** Bidders who receive this RFP but who do not submit a bid should return this RFP package stating "No Bid" and are encouraged to list the reason(s) for not responding. Failure to return this form may result in removal of the Bidder's name from all future lists.

- 12) **FREEDOM OF INFORMATION ACT (FOIA) REQUIREMENTS:** Bids are subject to public disclosure after the deadline for submission in accordance with state law.
- 13) **ARBITRATION:** Contractor/Vendor agrees to submit to arbitration all claims, counterclaims, disputes and other matters in question arising out of or relating to this agreement or the breach thereof. The Contractor's/Vendor's agreement to arbitrate shall be specifically enforceable under the prevailing law of any court having jurisdiction to hear such matters. Contractor's/Vendor's obligation to submit to arbitration shall be subject to the following provisions:
- a) Notice of demand for arbitration must be submitted to the City in writing within a reasonable time after the claim, dispute or other matter in question has arisen. A reasonable time is hereby determined to be fourteen (14) days from the date the party demanding the arbitration knows or should have known the facts giving rise to their claim, dispute or question. In no event may the demand for arbitration be made after the time when institution of legal or equitable proceedings based on such claim dispute or other matters in question would be barred by the applicable statute of limitation.
  - b) Within fourteen (14) days from the date that demand for arbitration is received by the City, each party shall submit to the other the name of one person to serve as an arbitrator. The two arbitrators together shall then select a third person, the three together shall then serve as a panel in all proceedings. Any decision concurred in by a majority of the three shall be a final binding decision.
  - c) The final decision rendered by said arbitrators shall be binding and conclusive and shall be subject to specific enforcement by a court of competent jurisdiction.
  - d) The costs of the arbitration shall be split and borne equally between the parties and such costs are not subject to shifting by the arbitrator.
  - e) This provision shall survive the expiration or termination of this Agreement in perpetuity.
- 14) **BID HOLD:** The City of Flint may hold bids for a period of one hundred twenty (120) days from opening, for the purpose of reviewing the results and investigating the qualifications of bidders prior to making an award.
- 15) **NONCOMPLIANCE:** Failure to deliver in accordance with specifications will be cause for the City of Flint and they may cancel the contract or any part thereof and purchase on the open market, charging any additional cost to the Contractor/Vendor.
- 16) **DISCLAIMER OF CONTRACTUAL RELATIONSHIP:** Nothing contained in these documents shall create any contractual relationship between the City and any Subcontractor or Sub-subcontractor.
- 17) **ERRORS AND OMISSIONS:** Bidder is not permitted to take advantage of any obvious errors or omissions in specifications.
- 18) **INTERPRETATION:** In the event that any provision contained herein shall be determined by a court of competent jurisdiction or an appropriate administrative tribunal to be contrary to the provision of law or to be unenforceable for any reason, then, to the extent necessary and possible to render the remainder of this Agreement enforceable, such provision may be modified or severed by such court or administrative tribunal having jurisdiction over this Agreement and the interpretation thereof, or the parties hereto, so as

to, as nearly as possible, carry out the intention of the parties hereto, considering the purpose of the entire Agreement in relation to such provision.

- 19) **LAWS AND ORDINANCES:** The Bidder shall obey and abide by all of the laws, rules and regulations of the Federal Government, State of Michigan, Genesee County and the City of Flint, applicable to the performance of this Agreement, including, but not limited to, labor laws, and laws regulating or applying to public improvement, local government, and its operational requirements.
- 20) **LOCAL PREFERENCE:** Contractors/bidders located within the corporate city limits of Flint, Michigan may be given a seven percent (7%) competitive price advantage. Additionally, if the lowest responsible bidder is not located within the limits of the City of Flint, but is located within the County of Genesee, and said bidder does not exceed the bid of the lowest non-local bidder by more than three and one-half percent (3-1/2%), then said lowest Genesee County bidder may be determined to be the lowest responsible bidder, and make the award to such Genesee County bidder accordingly, subject to the approval of the City Council. If the lowest non-local bidder does not exceed that of any Proposers/bidders by (7%) inside the City of Flint or (3-1/2%) inside the County of Genesee, then the Purchasing Director shall be allowed to request that the lowest local vendor match the price offered by the lowest non-local vendor.
- 21) **MATERIAL WORKMANSHIP AND STANDARDS OF PERFORMANCE:** The Bidder agrees to exercise independent judgment and to complete performance under this Agreement in accordance with sound professional practices. In entering into this Agreement, the City is relying upon the professional reputation, experience, certification and ability of the Bidder by her/him/themselves or by others employed by her/him/them and working under their direction and control. The continued effectiveness of this Agreement during its term or any renewal term shall be contingent, in part, upon the Bidder maintaining her/his/their operating qualifications in accordance with the requirements of federal, state and local laws. All materials furnished must be new, of latest model and standard first grade quality, or best workmanship and design, unless otherwise expressly specified. Bidder, if required, must furnish satisfactory evidence of quality materials; offers of experimental or unproven equipment may be disregarded.
- 22) **MODIFICATIONS/CHANGES:** Any modification to this agreement must be in writing and signed by the authorized employee, officer, board or council representative authorized to make such modifications pursuant to the State law and local ordinances.
- 23) **NON-COLLUSION:** The Bidder acknowledges that by signing this document that she/he/they is/are duly authorized to make said offer on behalf of the company she/he/they represent(s) and that said bid is genuine and not sham or collusive and not made in the interests or on behalf of any person not therein named, and that she/he/they and said bidder have not directly induced or solicited any other person(s) or corporation to refrain from responding to this solicitation and that she/he/they and said bidder have not in any manner sought by collusion to secure to themselves and said bidder any advantage over any other bidder.
- 24) **NON-DISCRIMINATION:** Pursuant to the requirements of 1976 P.A. 453 (Michigan Civil Rights Act) and 1976 P.A. 220 (Michigan Handicapped Rights Act), the local unit and its agent agree not to discriminate against any 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 race, color, religion, national origin, age, sex, height, weight, marital status or because of a handicap that is unrelated to the person's ability to perform the duties of nondiscrimination provision identical to this provision and binding upon any and all contractors and subcontractors. A breach of this covenant shall be regarded as a

material breach of this contract.

- 25) **SUBCONTRACTING:** No subcontract work shall be started prior to the written approval of the subcontractor by the City. The City reserves the right to accept or reject any subcontractor.
- 26) **UNION COMPLIANCE:** Bidder agrees to comply with all regulations and requirements of any national or local union(s) that may have jurisdiction over any of the materials, facilities, services or personnel to be furnished by the City.
- 27) **WAIVER:** Failure of the City to insist upon strict compliance with any of the terms, covenants or conditions of this Agreement shall not be deemed a waiver of that term, covenant or condition or of any other term, covenant or condition. Any waiver or relinquishment of any right or power hereunder at any one or more times shall not be deemed a waiver or relinquishment of that right or power at any other time.
- 28) **CITY INCOME TAX WITHHOLDING:** Contractor and any subcontractor engaged in this contract shall withhold from each payment to his employees the City income tax on all of their compensation subject to tax, after giving effect to exemptions, as follows:
- a) Residents of the City:  
At a rate equal to 1% of all compensation paid to the employee who is a resident of the City of Flint.
  - b) Non-residents:  
At a rate equal to 1/2% of the compensation paid to the employee for work done or services performed in the City of Flint.
- These taxes shall be held in trust and paid over to the City of Flint in accordance with City ordinances and State law. Any failure to do so shall constitute a substantial and material breach of this contract.
- 29) **CONTRACT DOCUMENTS:** The invitation for proposal, instructions to proposal, proposal, affidavit, addenda (if any), statement of Bidder's qualifications (when required), general conditions, special conditions, performance bond, labor and material payment bond, insurance certificates, technical specifications, and drawings, together with this agreement, form the contract, and they are as fully a part of the contract as if attached hereto or repeated herein.
- 30) **DISCLAIMER OF CONTRACTUAL RELATIONSHIP WITH SUBCONTRACTORS:** Nothing contained in the Contract Documents shall create any contractual relationship between the City and any Subcontractor or Sub-subcontractor.
- 31) **EFFECTIVE DATE:** Any agreement between the City and the Bidder shall be effective upon the date that it is executed by all parties hereto.
- 32) **FORCE MAJEURE:** Neither party shall be responsible for damages or delays caused by Force Majeure nor other events beyond the control of the other party and which could not reasonably have anticipated the control of the other party and which could not reasonably have been anticipated or prevented. For purposes of this Agreement, Force Majeure includes, but is not limited to, adverse weather conditions, floods, epidemics, war, riot, strikes, lockouts, and other industrial disturbances; unknown site conditions, accidents, sabotage, fire, and acts of God. Should Force Majeure occur, the parties shall mutually agree on the terms and conditions upon which the services may continue.

**INDEMNIFICATION:** To the fullest extent permitted by law, Bidder agrees to defend, pay on behalf of, indemnify, and hold harmless the City of Flint, its elected and appointed officials, employees and volunteers and others working on behalf of the City of Flint, including the Project Manager, against any and all claims, demands, suits, or losses, including all costs connected therewith, and for any damages which may be asserted, claimed, or recovered against or from the City of Flint, its elected and appointed officials, employees, volunteers or others working on behalf of the City of Flint, by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof, which may arise as a result of Bidder's acts, omissions, faults, and negligence or that of any of his employees, agents, and representatives in connection with the performance of this contract. Should the Bidder fail to indemnify the City in the above-mentioned circumstances, the City may exercise its option to deduct the cost that it incurs from the contract price forthwith.

These provisions shall survive the termination or expiration of any agreement entered into as a result of this request.

- 33) **INDEPENDENT CONTRACTOR:** No provision of this contract shall be construed as creating an employer-employee relationship. It is hereby expressly understood and agreed that Bidder is an "independent contractor" as that phrase has been defined and interpreted by the courts of the State of Michigan and, as such, Bidder is not entitled to any benefits not otherwise specified herein.
- 34) **NO THIRD-PARTY BENEFICIARY:** No contractor, subcontractor, mechanic, material man, laborer, vendor, or other person dealing with the principal Contractor shall be, nor shall any of them be deemed to be, third-party beneficiaries of this contract, but each such person shall be deemed to have agreed (a) that they shall look to the principal Contractor as their sole source of recovery if not paid, and (b) except as otherwise agreed to by the principal Contractor and any such person in writing, they may not enter any claim or bring any such action against the City under any circumstances. Except as provided by law, or as otherwise agreed to in writing between the City and such person, each such person shall be deemed to have waived in writing all rights to seek redress from the City under any circumstances whatsoever.
- 35) **NON-ASSIGNABILITY:** Contractor shall not assign or transfer any interest in this contract without the prior written consent of the City provided, however, that claims for money due or to become due to Contractor from the City under this contract may be assigned to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the City.
- 36) **NON-DISCLOSURE/CONFIDENTIALITY:** Contractor agrees that the documents identified herein as the contract documents are confidential information intended for the sole use of the City and that Contractor will not disclose any such information, or in any other way make such documents public, without the express written approval of the City or the order of the court of appropriate jurisdiction or as required by the laws of the State of Michigan.
- 37) **RECORDS PROPERTY OF CITY:** All documents, information, reports and the like prepared or generated by Contractor as a result of this contract shall become the sole property of the City of Flint.
- 38) **SEVERABILITY:** In the event that any provision contained herein shall be determined by a court or administrative tribunal to be contrary to a provision of state or federal law or to be unenforceable for any reason, then, to the extent necessary and possible to render the remainder of this Agreement enforceable, such provision may be modified or severed by such court or administrative tribunal so as to,

as nearly as possible, carry out the intention of the parties hereto, considering the purpose of the entire Agreement in relation to such provision. The invalidation of one or more terms of this contract shall not affect the validity of the remaining terms.

- 39) **TERMINATION:** This contract may be terminated by either party hereto by submitting a notice of termination to the other party. Such notice shall be in writing and shall be effective 30 days from the date it is submitted unless otherwise agreed to by the parties hereto. Contractor, upon receiving such notice and prorated payment upon termination of this contract shall give to the City all pertinent records, data, and information created up to the date of termination to which the City, under the terms of this contract, is entitled.
- 40) **TIME PERFORMANCE:** Contractor's services shall commence immediately upon receipt of the notice to proceed and shall be carried out forthwith and without reasonable delay.
- 41) **EVALUATION OF PROPOSAL:** In the City's evaluation of proposals, at minimum: cost, serviceability, financial stability, and all requirements set forth in this document shall be considered as selection and award criteria unless otherwise specified.
- 42) **PREVAILING WAGE:** All work for this project, including that of any subcontractor or sub-subcontractor, must meet Davis-Bacon Act requirements and full prevailing wage. Information on Davis-Bacon reporting and requirements, including payroll reporting, can be found at:  
<https://www.dol.gov/whd/govcontracts/dbra.htm>



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## **P21000546 – ROBERT T LONGWAY REHABILITATION - CE**

The City of Flint has procured the Robert T. Longway Rehabilitation project through MDOT's Local Agency Program (LAP). The project limits are Robert T. Longway from E. Boulevard Drive to Chavez Drive. The project is an MDOT 3R roadway rehabilitation as well as water main replacement project including curb and gutter replacement, HMA resurfacing, ADA sidewalk ramps, 12-inch open-cut water main. The project is planned for an August 2020 bid opening with fall and spring construction.

### **Scope of Work**

Consultant shall provide all work necessary to administer a construction contract through MDOT's LAP program guidelines including the following:

- Provide construction surveying and layout
  - Curb and gutter stakes every 50 feet or less
  - Curb and gutters high and low points to be staked
  - Water main stakes every 50 feet or less
  - All water main valves and fixtures shall be staked
  - Storm Sewer Structure offset stakes
  - Sidewalk stakes every 50 feet or less
  - All changes in sidewalk grades shall be staked
  - Driveway stakes if needed
  - ADA sidewalk ramp stakes
- Construction administration services in accordance with MDOT requirements for Federal Aid including, but not limited to, the following:
  - Bi-weekly pay estimates
  - Contract modifications
  - Shop drawings review
  - Material Source List review
  - Prevailing wage rate interviews and wage rate reviews
  - Any and all MDOT reports for this Project
  - Coordinate, lead and provide meeting minutes for the Pre-Construction meeting as well as bi-weekly progress meetings on-site.
- Comprehensive Photographic documentation with the following:
  - Pre-construction digital photographic documentation of the construction site and at selected milestones
  - Documentation inclusive of electronic indexing, navigation, hosting, storage and remote access, as applicable, throughout construction;
  - Security of information
  - Digital photographs to use overlap techniques to ensure maximum coverage of the project with clear and sharp images
  - All photos are to be easily accessible online using mobile devices
  - Photos location shall be easily retrieved
  - Digital images shall be taken with professional grade camera with a minimum size of 6 megapixels capable of producing 8x10 inch print with 2272 x 1704 pixels and a 16 x 20 print with a minimum 2592 x 1944 pixels
  - Indexing and navigation system for photos shall relate to construction drawings and be organized by both time (date-stamped) and location
  - Pictures to be done by Multivista or equal or by City approved drone system

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- Construction Inspection Services
  - Full-time inspection based on a 12-week construction duration
  - Inspection based on 60 hours per week on site
  - Mileage shall be included in the hourly rates for the Construction Engineering for this project including inspection
  - Inspector will ensure construction plans and specifications are followed unless changes are approved by City Engineer
  - Construction materials testing in accordance with MDOT frequency guidelines
  - All testing results will be reported to the City Engineer within a week of receiving test results including the location of the test
- As-built Record Documentation
  - Water services, valves, bend's, tees, coupling, reducers and tie-ins locations to be GPS in X, Y and Z coordinates
  - GPS accuracy shall be within 4 cm
  - Water main pipe and valve, types and manufacturers shall be noted on plans
  - Location of any changes in pipe type will be GPS in X, Y, & Z coordinates
  - All sanitary sewer cover and private utility covers disturbed within the project limits shall be identified and surveyed or GPS in X & Y coordinates to the center of the cover and noted on as-builts
  - Storm sewer inverts, location and length to be GPS in X, Y, & Z coordinates
  - All changes from original plans must be noted on the as-builts
  - Contractors names, addresses, and type of work done shall be added within the first three sheets with the date of completion
  - Listing of all GPS points and identification shall be digitally submitted to the City in a form that is compatible to ArcGIS
  - As-built records and drawings shall be sent in hard copy and digital form that is compatible with City Works program
  - As-built records shall be given to City within thirty (30) day of completion of the Project
  - Consulting Construction Engineer will verify that As-builts records are accurate
  - Electronic copies of all digital photos from the project shall be indexed with time and location and sent to the City within thirty (30) day of completion of the Project

## **P21000546 – ROBERT T LONGWAY REHABILITATION - CE**

**THE FOLLOWING PAGES MUST BE COMPLETED AND INCLUDED WITH SUBMITTAL IN THE FOLLOWING ORDER.**

### **Purchasing Checklist:**

- ☐ Cover Sheet
- ☐ Complete Proposal Submittal
- ☐ Qualifications & License
- ☐ List of References
- ☐ Certification Regarding Debarment, Suspension, and Other Responsibility Matters
- ☐ Proposed Timeline to Complete Work
- ☐ All Supporting Documentation - CERTIFICATE OF INSURANCE
- ☐ City of Flint, Michigan Affidavit

# **P21000546 – ROBERT T LONGWAY REHABILITATION - CE**

## **Certification Regarding Debarment, Suspension, and Other Responsibility Matters**

**BID#:** \_\_\_\_\_

The prospective participant certifies, to the best of its knowledge and belief, that it, its principals, and that of their subcontractor and/ or sub-subcontractors and their principals:

- 1) Are not presently or proposed to be debarred or suspended, declared ineligible, or voluntarily excluded from federal, state, or local (hereinafter “public”) transactions;
- 2) Have not within a three-year period preceding this Agreement been convicted of or had a civil judgment rendered against them for
  - i. Fraud or commission of a criminal offence in connection with obtaining, attempting to obtain, or performing a public transaction or contract under a public transaction,
  - ii. Violation of federal or state antitrust laws, or
  - iii. Embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;
- 3) Have not within the preceding three years had a public transaction terminated for cause or default; and
- 4) Are not presently indicted for or otherwise criminally or civilly charged by a public entity with commission of any of the offenses enumerated under the above.

I understand that a false statement on this certification may be grounds for the rejection of this proposal or the termination of the award.

\_\_\_\_\_  
Name and Title of Authorized Representative

\_\_\_\_\_  
Name of Participant Agency or Firm

\_\_\_\_\_  
Date

☐ I am unable to certify to the above statement. Attached is my explanation.

**CITY OF FLINT, MICHIGAN AFFIDAVIT**

**AFFIDAVIT FOR INDIVIDUAL**

STATE OF \_\_\_\_\_

S.S.

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being duly sworn, deposes and says that they are the person making the above bid; and that said bid is genuine and not sham or collusive, and is not made in the interest of or on behalf of any person not therein named, and that they have not directly or indirectly induced or solicited any bidder to put in a sham bid; that they have not directly or indirectly induced or solicited any other person or corporation to refrain from bidding, and that they have not in any manner sought by collusion to secure themselves any advantage over other bidders.

Subscribed and sworn to before me at \_\_\_\_\_, in said County and State,

this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 20\_\_\_\_\_,

\_\_\_\_\_  
\*Notary Public, \_\_\_\_\_ County, \_\_\_\_\_

My Commission expires \_\_\_\_\_, 20\_\_\_\_

**FOR CORPORATION**

STATE OF \_\_\_\_\_

S.S.

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being duly sworn, deposes and says that she/he/they

is \_\_\_\_\_ of \_\_\_\_\_

(Official Title)

(Name of Corporation)

a corporation duly organized and doing business under the laws of the State of \_\_\_\_\_ the corporation making the within and foregoing bid; that they executed said bid in behalf of said corporation by authority of its Board of Directors; that said bid is genuine and not sham or collusive and is not made in the interests of or on behalf of any person not herein named, and that they have not and said bidder has not directly or indirectly induced or solicited any other person or corporation to refrain from bidding; that they have not and said bidder has not in any manner sought by collusion to secure to themselves or to said corporation an advantage over other bidders.

Subscribed and sworn to before me at \_\_\_\_\_, in said County and State,

this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 20\_\_\_\_\_,

\_\_\_\_\_  
\*Notary Public, \_\_\_\_\_ County, \_\_\_\_\_

My Commission expires \_\_\_\_\_, 20\_\_\_\_

**FOR PARTNERSHIP**

STATE OF \_\_\_\_\_

S.S.

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being duly sworn, deposes and says that they are a member of the firm of \_\_\_\_\_, a co-partnership, making the above bid; that they are duly authorized to make said bid on behalf of said co-partnership; that said bid is genuine and not sham of collusive, and is not made in the interest of or on behalf of any person not therein named, and that they have and said bidder has not directly or indirectly induced or solicited any other person or corporation to refrain from bidding, and that they have not and said bidder has not in any manner sought by collusion to secure to themselves or to said bidder any advantage over other bidders.

Subscribed and sworn to before me at \_\_\_\_\_, in said County and State,

this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 20\_\_\_\_\_,

\_\_\_\_\_  
\*Notary Public, \_\_\_\_\_ County, \_\_\_\_\_

My Commission expires \_\_\_\_\_, 20\_\_\_\_

**FOR AGENT**

STATE OF \_\_\_\_\_

S.S.

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being duly sworn, deposes and says that they executed the within and foregoing bid in behalf of \_\_\_\_\_, the bidder therein named, they having been theretofore lawfully authorized, as the agent of said bidder, so to do; that said bid is genuine and not sham or collusive and not made in the interests of or on behalf of any person not therein named, and that they have not and said bidder has not directly or indirectly induced or solicited any bidder to put in a sham bid; that they have not and said bidder has not directly or indirectly induced or solicited any other person or corporation to refrain from bidding, and that they have not and said bidder has not in any manner sought by collusion to secure to themselves or to said bidder any advantage over other bidders.

Subscribed and sworn to before me at \_\_\_\_\_, in said County and State,

this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 20\_\_\_\_\_,

\_\_\_\_\_  
\*Notary Public, \_\_\_\_\_ County, \_\_\_\_\_

My Commission expires \_\_\_\_\_, 20\_\_\_\_

*NOTE: If executed outside of the State of Michigan, certificate by the Clerk of the Court of Record, authenticating the Notary's Signature and authority should be attached.*

## **P21000546 – ROBERT T LONGWAY REHABILITATION - CE**

**Firm Name:**\_\_\_\_\_

**Address:**\_\_\_\_\_

**City/State/Zip**\_\_\_\_\_

**Phone:**\_\_\_\_\_ **Fax:**\_\_\_\_\_ **Email:** \_\_\_\_\_

**Signed:**\_\_\_\_\_ **Date:**\_\_\_\_\_



**LEAVE BLANK INTENTIONALLY**

ITEM NUMBER

**2009 028**

**STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION**

**PROPOSAL**

0.28 mi of hot mix asphalt cold milling and resurfacing, concrete pavement repair, water main, signing and pavement markings on Robert T Longway Boulevard from Chavez Drive to East Boulevard Drive in the city of Flint, Genesee County. This is a Local Agency project.

**BIDS WILL BE ELECTRONICALLY DOWNLOADED AT 10:30 AM LOCAL TIME, ON 9/4/20**

<u>CONTRACT ID</u>	<u>CONTROL SECTION</u>	<u>PROJECT</u>	<u>FEDERAL NUMBER</u>
25000-207637	NH	25000 207637A	20A0865

The bidder has downloaded and examined the plans, specifications, special provisions, and related materials in the proposal, as well as the location of the work described in the proposal for this project, and has obtained all addenda issued for this project, and is fully informed as to the nature of the work and the conditions relating to its performance and understands that the quantities shown are approximate only and are subject to either increase or decrease.

The bidder hereby proposes to furnish all necessary machinery, tools, apparatus, and other means of construction, do all the work, furnish all the materials except as otherwise specified and, for each unit price, lump sum, or one each named in the itemized bid, to complete the work in strict conformity with the plans therefore and the entire proposal which is incorporated by reference in these pages, and in strict conformity with the requirements of the 2012 Standard Specifications for Construction, Michigan Department of Transportation and such other special provisions and supplemental specifications as may be a part of the proposal for this project.

The bidder further proposes to do such extra work as may be authorized by the Department, prices for which are not included in the itemized bid. Compensation shall be made on the basis agreed upon before such extra work is begun.

The bidder hereby certifies that if it is not prequalified in all classifications required by the advertisement for this project, it has taken such preparatory steps as may be necessary and will within the time specified in Subsection 102.15 of the 2012 Standard Specifications for Construction, designate subcontractor(s) that are fully prequalified in the classification(s) to perform the work.

THE BIDDER UNDERSTANDS AND AGREES THAT THE DEPARTMENT RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS AND NO CONTRACTUAL RELATIONSHIP SHALL EXIST BETWEEN THE BIDDER AND THE DEPARTMENT FOR THE WORK DESCRIBED HEREIN UNTIL SUCH TIME AS THE CONTRACT HAS BEEN FORMALLY EXECUTED BY BOTH THE BIDDER AND THE DEPARTMENT.

The bidder agrees upon submitting this bid that its agents, officers or employees have not directly or indirectly entered into any agreements, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal for the above project.

Unless the bidder gives MDOT advance written notice, MDOT may correspond directly with the insurance agencies concerning questions and problems with the insurance certificates, bonds and related materials. It is the obligation of the bidder to monitor the filing of the insurance certificates, bond, and related materials with MDOT and the bidder is responsible for any failure to provide MDOT with the required materials, on a timely basis and in proper form.

Subject to Subsection 102.17 of the 2012 Standard Specifications for Construction, the bidder agrees to pay to the Michigan Department of Transportation the bid guaranty sum of **\$25,000.00** if the bidder fails to provide the required materials and/or execute the contract in accordance with Subsection 102.15 of the 2012 Standard Specifications for Construction.

**Davison TSC**



8/5/2020 9:54 AM

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## Schedule of Items

Report v1

Proposal ID: 25000-207637

Project(s): 207637A

Letting Number: 200904

Call Number: 028

Contractor: \_\_\_\_\_

## Section Information

Section ID	Section Description	Section Total	Alt. Set ID	Alt. Member ID
1	Road Work Federal 81.85%/City of Flint 18.15%			

## Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0010	1500001 - Mobilization, Max\$88,400.00	1.000 LSUM		
0020	2030011 - Dr Structure, Rem	1.000 Ea		
0030	2030015 - Sewer, Rem, Less than 24 inch	40.000 Ft		
0040	2040020 - Curb and Gutter, Rem	2,500.000 Ft		
0050	2040035 - Guardrail, Rem	660.000 Ft		
0060	2047011 - _Pavt, Rem, Modified	6,257.000 Syd		
0070	2050010 - Embankment, CIP	840.000 Cyd		
0080	2050016 - Excavation, Earth	720.000 Cyd		
0090	2050031 - Non Haz Contaminated Material Handling and Disposal, LM	80.000 Cyd		
0100	2050041 - Subgrade Undercutting, Type II	125.000 Cyd		
0110	2080020 - Erosion Control, Inlet Protection, Fabric Drop	11.000 Ea		
0120	2080036 - Erosion Control, Silt Fence	1,500.000 Ft		
0130	3020020 - Aggregate Base, 8 inch	3,315.000 Syd		

### Schedule of Items

Report v1

#### Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0140	4020600 - Sewer, CI E, 12 inch, Tr Det B	40.000 Ft		
0150	4021204 - Sewer Tap, 12 inch	1.000 Ea		
0160	4021275 - Video Taping Sewer and Culv Pipe	100.000 Ft		
0170	4030010 - Dr Structure Cover, Type B	1.000 Ea		
0180	4030050 - Dr Structure Cover, Type K	1.000 Ea		
0190	4030200 - Dr Structure, 24 inch dia	1.000 Ea		
0200	4030210 - Dr Structure, 48 inch dia	1.000 Ea		
0210	4030280 - Dr Structure, Adj, Add Depth	5.000 Ft		
0220	4037050 - _Dr Structure Cover, Adj, Case 1, Modified	5.000 Ea		
0230	4037050 - _Dr Structure Cover, Adj, Case 2, Modified	1.000 Ea		
0240	5010020 - Pavt Joint and Crack Repr, Det 7	240.000 Ft		
0250	5010021 - Pavt Joint and Crack Repr, Det 8	240.000 Ft		
0260	5010025 - Hand Patching	75.000 Ton		
0270	5010046 - HMA, 3E10	614.000 Ton		
0280	5010052 - HMA, 4E10	720.000 Ton		
0290	5010058 - HMA, 5E10	1,030.000 Ton		
0300	5017011 - _Cold Milling, Pavt	5,200.000 Syd		
0310	6020108 - Conc Pavt, Nonreinf, 10 inch	70.000 Syd		

## Schedule of Items

Report v1

## Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0320	6020200 - Joint, Contraction, Cp	100.000 Ft		
0330	6030014 - Cold Milling Conc Pavt	1,500.000 Syd		
0340	8010007 - Driveway, Nonreinf Conc, 8 inch	120.000 Syd		
0350	8020038 - Curb and Gutter, Conc, Det F4	2,069.000 Ft		
0360	8020050 - Driveway Opening, Conc, Det M	185.000 Ft		
0370	8030030 - Curb Ramp Opening, Conc	88.000 Ft		
0380	8030036 - Sidewalk Ramp, Conc, 6 inch	387.000 Sft		
0390	8030044 - Sidewalk, Conc, 4 inch	100.000 Sft		
0400	8030046 - Sidewalk, Conc, 6 inch	373.000 Sft		
0410	8037001 - _Detectable Warning Surface, Modified	45.000 Ft		
0420	8100371 - Post, Steel, 3 lb	270.000 Ft		
0430	8100402 - Sign, Type III, Erect, Salv	2.000 Ea		
0440	8100403 - Sign, Type III, Rem	27.000 Ea		
0450	8100404 - Sign, Type IIIA	16.000 Sft		
0460	8100405 - Sign, Type IIIB	250.000 Sft		
0470	8110024 - Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	250.000 Ft		
0480	8110045 - Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	75.000 Ft		

### Schedule of Items

Report v1

#### Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0490	8110063 - Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	2.000 Ea		
0500	8110068 - Pavt Mrkg, Ovly Cold Plastic, Only	2.000 Ea		
0510	8110071 - Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	2.000 Ea		
0520	8110231 - Pavt Mrkg, Waterborne, 4 inch, White	1,500.000 Ft		
0530	8110232 - Pavt Mrkg, Waterborne, 4 inch, Yellow	2,800.000 Ft		
0540	8110251 - Pavt Mrkg, Waterborne, 2nd Application, 4 inch, White	1,500.000 Ft		
0550	8110252 - Pavt Mrkg, Waterborne, 2nd Application, 4 inch, Yellow	2,800.000 Ft		
0560	8120012 - Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	10.000 Ea		
0570	8120013 - Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	10.000 Ea		
0580	8120026 - Pedestrian Type II Barricade, Temp	2.000 Ea		
0590	8120100 - Dust Palliative, Applied	5.000 Ton		
0600	8120140 - Lighted Arrow, Type C, Furn	2.000 Ea		
0610	8120141 - Lighted Arrow, Type C, Oper	2.000 Ea		
0620	8120170 - Minor Traf Devices	1.000 LSUM		
0630	8120236 - Pavt Mrkg, Wet Reflective, Type NR, Paint, 4 inch, Yellow, Temp	2,000.000 Ft		



## Schedule of Items

Report v1

## Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0640	8120250 - Plastic Drum, High Intensity, Furn	100.000 Ea		
0650	8120251 - Plastic Drum, High Intensity, Oper	100.000 Ea		
0660	8120310 - Sign Cover	20.000 Ea		
0670	8120330 - Sign, Portable, Changeable Message, Furn	2.000 Ea		
0680	8120331 - Sign, Portable, Changeable Message, Oper	2.000 Ea		
0690	8120350 - Sign, Type B, Temp, Prismatic, Furn	375.000 Sft		
0700	8120351 - Sign, Type B, Temp, Prismatic, Oper	375.000 Sft		
0710	8120352 - Sign, Type B, Temp, Prismatic, Spec, Furn	15.000 Sft		
0720	8120353 - Sign, Type B, Temp, Prismatic, Spec, Oper	15.000 Sft		
0730	8120370 - Traf Regulator Control	1.000 LSUM		
0740	8167011 - _Turf Establishment, Performance	3,100.000 Syd		
0750	8237001 - _Water Main Bedding and Backfill, SD-7W	413.000 Ft		
0760	8237001 - _Water Main, 8 inch, Open Cut	397.000 Ft		
0770	8237001 - _Water Main, Rem	525.000 Ft		
0780	8237050 - _Gate Valve and Box, 12 inch, Modified	1.000 Ea		



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## Schedule of Items

Report v1

## Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0790	8237050 - _Gate Valve and Box, 8 inch, Modified	1.000 Ea		
0800	8237050 - _Hydrant Assembly, SD-1W	1.000 Ea		
0810	8237050 - _Hydrant Rem, Modified	1.000 Ea		
0820	8237050 - _In Line Stop, 12 inch	1.000 Ea		
0830	8237050 - _Water Main, Connect New 12 inch to Existing 12 inch	2.000 Ea		
0840	8237050 - _Water Serv, 3/4 inch	4.000 Ea		
0850	8237050 - _Water Serv, Long, 2 inch	1.000 Ea		
0860	8237050 - _Water Structure, Abandon	2.000 Ea		

Section 1 Total:

Total Bid:





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AASHTOWare Project™ Version 4.2.2 Revision 034

**Schedule Of Items - Blank Schedule of Items**

Report v1

**Proposal ID:** 25000-207637

**Project(s):** 207637A

**Letting Number:** 200904

**Call Number:** 028

**List items on this page by amendment**

**Contractor:** \_\_\_\_\_

**Item Prices**

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
<b>Total Bid:</b>				

## DESIGNATED and SPECIALTY ITEMS

### **DESIGNATED ITEMS:**

### **COMPANY NAME AND ADDRESS OF PREQUALIFIED SUBCONTRACTOR DOING WORK:**

(Ea) Grading, Drainage Structures, and  
Aggregate Construction

\_\_\_\_\_  
(COMPANY NAME)

\_\_\_\_\_  
(COMPANY ADDRESS)

\_\_\_\_\_  
(COMPANY NAME)

\_\_\_\_\_  
(COMPANY ADDRESS)

\_\_\_\_\_  
(COMPANY NAME)

\_\_\_\_\_  
(COMPANY ADDRESS)

\_\_\_\_\_  
(COMPANY NAME)

\_\_\_\_\_  
(COMPANY ADDRESS)

\_\_\_\_\_  
(COMPANY NAME)

### **SPECIALTY ITEMS:**

\_\_\_\_\_  
(COMPANY ADDRESS)

\_\_\_\_\_  
(COMPANY NAME)

\_\_\_\_\_  
(COMPANY ADDRESS)

**SEE NEXT PAGE FOR INFORMATION ON  
COMPLETING THIS PAGE**

## INFORMATION ON COMPLETION OF DESIGNATED AND SPECIALTY ITEMS PAGE

The contractor may sublet the item(s) of work stipulated on the DESIGNATED and SPECIALTY ITEMS page in this bid in accordance with Section 1.08.01 of the 2012 Standard Specifications, Section VII of the required provisions for Federal-Aid Contracts (with the exception noted in the following paragraph), and the following instructions.

The percentage of contract work performed by a contractor's own organization shall comply with Section 1.08.01 of the 2012 Standard Specifications, rather than the lower percentage allowed by Section VII of FHA required contract provisions (form FHWA 1273). Section 108.01 of the 2012 Standard Specifications requires forty percent (40%) performance by a contractor's own organization.

If the contractor **IS NOT** prequalified in EITHER the DESIGNATED or SPECIALTY ITEMS noted in this bid, the contractor MUST, prior to contract award, indicate the company name and address of a prequalified subcontractor in the space provided. If such company name is provided, the contractor MUST sublet the appropriate items to the prequalified subcontractor named, **unless the subcontractor is not prequalified at the time the work is to be performed, or the subletting of the item to another prequalified subcontractor is agreed to in writing by both the contractor and the named subcontractor.**

If the contractor **IS** prequalified in EITHER the DESIGNATED or SPECIALTY ITEMS noted in this bid and does not intend to do the work with its own forces, the contractor may indicate the company name and address of a prequalified subcontractor in the space provided. If such company name is provided, the contractor MUST sublet the appropriate items to the prequalified subcontractor named, **unless the subcontractor is not prequalified at the time the work is to be performed, or the subletting of the item to another prequalified subcontractor is agreed to in writing by both the contractor and the named subcontractor.**

If the contractor **IS** prequalified in the DESIGNATED or SPECIALTY ITEMS noted and NO subcontractor is named, any later decision to subcontract said items of work is subject to the sixty percent (60%) limitation of subcontracting.

At the time that a subcontractor is named in a bid to perform any of the DESIGNATED or SPECIALTY ITEMS, that subcontractor must be prequalified for the classification which includes the work it is to perform. In selecting a subcontractor, the prime contractor shall assure itself that the prospective subcontractor has sufficient equipment, working force, and supervision to complete the designated or specialty items to be subcontracted within the specified time limit.

It is understood and agreed that the prequalification of the subcontractor by the Department pursuant to 1933 P.A. 170 is not a guarantee or warranty of the subcontractor's ability to perform or complete the work contained herein.

Rev. (09/11)

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**Notice of Advertisement**

Report v1

**Letting of:** 200904

10:30 AM, Local Time 425 W. OTTAWA ST., LANSING, MI 48933

Call Number	Contract ID	Control Section	Project Number	Federal Project Number
028	25000-207637	NH 25000	207637A	20A0865

**Description:** 0.28 mi of hot mix asphalt cold milling and resurfacing, concrete pavement repair, water main, signing and pavement markings on Robert T Longway Boulevard from Chavez Drive to East Boulevard Drive in the city of Flint, Genesee County. This is a Local Agency project.

**Required DBE Participation:** 3.00%**Net Classification Required For This Project:** \*\* 972 Cb \*\***Estimated Pages For Plans:** 29**Completion Date:** 5/14/2021

In addition to the above minimum prequalification requirement for prime contractors this project includes a subclassification of Ea. If the prime contractor is not prequalified in this subclassification it must use a prequalified subcontractor. This subcontractor must be designated prior to award of the contract to the confirmed low bidder.

**Date Advertised:** 8/7/2020

See proposal for bidder guaranty information.

Proposal and plans, if applicable, are available for examination online at  
<<http://mdotcf.state.mi.us/public/eprop/login/index.cfm>>

## **PROGRESS CLAUSE**

1 of 1

The Owner anticipates that construction can begin no later than

- 10 days after award or as directed by the Engineer

In no case shall any work be commenced prior to receipt of formal notice of award by the Department.

The Contractor shall prepare and submit a complete, detailed, and signed MDOT Form 1130, Progress Schedule, according to 12SP-101A.

The Progress Schedule shall include, at a minimum, the controlling work items for the completion of the project, as well as the planned dates or work days that these work items will be controlling operations. All contract dates including open to traffic, project completion, interim completion and any other controlling dates in the contract, must be included in the progress schedule.

If the bidding Proposal specifies other controlling dates, these shall also be included in the Progress Schedule.

The Project shall be completed in its entirety by

- On or before May 14, 2021.

After award and prior to the start of work, the Contractor must attend a preconstruction meeting with the Engineer. The Engineer will determine the day, time and place for the preconstruction meeting. The meeting will be conducted after project award and may be rescheduled if there are delays in the award of the project. The named subcontractor(s) for Designated and/or Specialty Items, as shown in the Proposal, should attend the preconstruction meeting if such items materially affect the work schedule.

Liquidated Damages shall be assessed in accordance with Section 108.10 of the 2012 Standard Specifications for Construction.



**CITY OF FLINT  
SPECIAL PROVISION  
FOR  
MAINTAINING TRAFFIC**

COF:SDA

1 of 6

May 2020

**a. Description.** This work consists of all labor, materials, and equipment required to maintain traffic in accordance with this special provision for the work described within the plans including road reconstruction, sidewalk ramp replacements, and permanent pavement marking and signing in the City of Flint in Genesee County.

**b. General.** Maintain traffic throughout the project in accordance with the latest standard specifications, any typicals or supplemental specifications in the contract, and as described on the plans for this project.

The project will be utilizing lane closures as well as detour routes based on the information provided below and in the plans. The Contractor shall maintain local traffic and access to local businesses at all times throughout the project in accordance with Sections 104.07, 104.11, and 812 of the Michigan Department of Transportation 2012 Standard Specifications for Construction, including any supplemental specifications and as specified herein.

1. The Contractor shall notify the Engineer and the City's traffic control contact Rod McGaha at 810-766-7135 three (3) full working days prior to implementation of any lane closures and major traffic shifts.
2. The Contractor shall coordinate their operations with other Contractors performing work on other projects within or adjacent to the Construction Influence Area (CIA). There will be no additional compensation for any coordination required with other projects. The Contractor's attention is directed to Section 104.08 of the MDOT 2012 Standard Specifications for Construction.
  - a. Work shall be coordinated with franchise utilities for adjustments, relocations and replacements of facilities within the project limits if required
3. Notification to police, emergency vehicles, public transportation and others will be made by the City of Flint.
4. Once work is initiated, that work shall be continuous until completed. During construction, access to all side street approaches, adjacent residential and commercial drives shall be maintained unless otherwise allowed under this special provision.
5. All local noise and dust control ordinance shall apply to this project.
6. Any debris deposited on the roadway or sidewalks by the Contractor, or his subcontractors, shall be removed immediately by the Contractor.

**c. Construction Influence Area (CIA).** The CIA includes the right-of-way of the following roadways, within the approximate limits described below:

1. On Robert T. Longway Boulevard from approximately 1,000 feet west of East Boulevard and 1,000 feet east of E. Chavez Boulevard.
2. On Burton Street from Robert T. Longway to 500 feet east.
3. In addition, the CIA includes the right-of-way of any designated detour route or alternate route, intersecting roads, and ramps adjacent to the work zone for a distance of approximately 1/4 mile in advance of the work zone or as far as the construction or detour signing extends.

**d. Traffic Restrictions.** Maintain traffic in accordance with the maintaining traffic plans and maintaining traffic typicals contained herein, except as noted below. Changes or adjustments to the maintaining traffic typicals may be necessary to fit field conditions, subject to approval of the Engineer or as determined by the Engineer.

1. Utilize the following Maintaining Traffic Typicals:
  - A. M0020a L, D, and B Values
  - B. M0820a Divided Roadway – 2 Lane Closure – No Speed Reduction
2. Do not work, deliver material, or close lanes during the holiday periods and/or special events as defined in Tables 1 and 2.

**Table 1: 2020 Holiday Periods**

Holiday	Start Date and Time	End Date and Time
Memorial Day	3:00 p.m. Friday, May 22 <sup>nd</sup>	6:00 a.m. Tuesday, May 26 <sup>th</sup>
Fourth of July	3:00 p.m. Thursday, July 2 <sup>nd</sup>	6:00 a.m. Monday, July 6 <sup>th</sup>
Labor Day	3:00 p.m. Friday, September 4 <sup>th</sup>	6:00 a.m. Tuesday, September 8 <sup>th</sup>
Thanksgiving	3:00 p.m. Wednesday, November 25 <sup>th</sup>	6:00 a.m. Monday, November 30 <sup>th</sup>

**Table 2: 2020 Special Events**

Local Event	Start Dates and Time	End Date and Time
Crim Festival of Races	3:00 p.m. Thursday, August 20 <sup>th</sup>	6:00 a.m. Monday, August 24 <sup>th</sup>

3. Work shall be limited to between 7am and 7pm Monday to Friday. All work shall be conducted during day time hours only, but may be allowable outside of the day time hours at the discretion of the Engineer. Any additional cost for maintaining traffic during night time hours and additional equipment needed for night work shall be borne by the Contractor.
4. Contractor shall notify residents in writing 48 hours (2 days) prior to working adjacent to their driveway. Contractor shall maintain local access throughout construction.
5. Contractor shall maintain local access throughout construction and shall not impede or disturb access or use of the parks within the project limits.
6. Maintain a minimum of one lane of traffic in each direction at all times on Robert T. Longway Boulevard.
7. When a lane is closed, place channelizing devices at cross streets and major drives to form a radius that clearly defines the approaches to the through and turning traffic.
8. Obtain all necessary permits from local governments within areas of local jurisdiction, including noise/dust ordinance waivers when required, prior to placing construction signing on

local roads. Refer to The Noise Control Ordinance of the City of Flint for additional information. The Department will reimburse permit costs in accordance with Subsection 107.02.A of the Standard Specification for Construction. Prior to placing construction signing on local roads, obtain an approved permit from the Road Commission for Genesee County and any local agencies.

Adhere to all requirements for the traffic signing within an MDOT Right-of-Way. A Right-of-Way Permit application has been submitted to the MDOT Davison TSC, however, the Contractor is responsible for providing the required information to obtain a final approved permit.

9. Contractor shall coordinate with the Mass Transportation Authority (MTA) for closures on Robert T. Longway Boulevard. The Engineer has discussed routing with the MTA, but additional coordination will be needed once the schedule is provided.

**e. Traffic General.**

1. For any lane open to traffic, provide a minimum lane width of 11 feet.
2. Repair, at no expense to the Department, any damage done to staging area, signs, or any road surface due to the Contractor's operations.
3. Protect the work area at the end of each day. Close all open access points on the project to traffic with Type III barricades or other devices approved by the Engineer. Restore undercuts or excavations in areas immediately adjacent to active traffic lanes to a one-on-four slope from the edge of the roadway at the end of each working period or as directed by the Engineer. Delineate any shoulder under construction that is not in a finished condition left overnight, as shown on plans.
4. The City of Flint will be responsible for notifying emergency services, transit agencies, law enforcement, and schools prior to any lane closures, detours, or major traffic shifts. In addition, the Contractor will be responsible for working with and complying with any coordination that is necessary with the Department and emergency services, transit agencies, law enforcement, and schools. All costs associated with these coordination efforts will be considered included in the pay item "Minor Traf Devices."
5. All costs associated with maintaining devices during/post a storm event are considered included in the "Operated" item for the traffic control devices.
6. Remove all temporary traffic control devices from MDOT right-of-way during any shutdown periods unless needed for directly maintaining or channelizing traffic. No additional payment will be made for removal and/or redeployment of these devices except for in the case of an approved extension of time.
7. Material and work to maintain drives open to traffic are included in the major items of work and will not be paid for separately.
8. Any damaged devices shall be replaced immediately at no cost to the Owner.

**f. Stage Construction** Maintain traffic in accordance with the restrictions listed in Section d. Traffic Restrictions and the suggested sequence of operations contained herein. Use of an alternate traffic control plan is subject to review and approval by the Engineer.

1. Stage 1 – Westbound Lanes of Robert T. Longway Bouelvard from East Boulevard

**Drive to Chavez Drive**

- A. Westbound traffic will be detoured south on Chavez Drive to eastbound Robert T. Longway Boulevard. Two way traffic will be maintained on eastbound Robert T. Longway Boulevard from East Boulevard Drive to Chavez Drive as shown on the plans. Westbound traffic will be transitioned back past E Boulevard Drive.
  - B. Eastbound traffic will be reduced to one thru lane as shown on the plans.
  - C. Work expected to be completed in this phase includes removals, grading, placement of aggregate base, placement of concrete curb and gutter, concrete pavement repairs, HMA and concrete cold milling, placement of HMA base and leveling courses, and all incidental work needed to complete those items.
2. Stage 2 – Robert T. Longway Boulevard from East Boulevard Drive to Chavez Drive
    - A. Traffic will be reduced to a minimum of one thru lane in the eastbound direction. The Contractor must complete all work except for the HMA overlay prior to closing down another lane. Use MDOT typical M0730a for eastbound lane closures.
    - B. Westbound traffic will use Westbound Robert T. Longway.
    - C. Work expected removals, replacement of concrete curb and gutter, concrete pavement repairs, HMA and concrete cold milling, placement of HMA base and leveling courses, and all incidental work needed to complete those items.

**g. Detours (Westbound Robert T. Longway)**

1. Do not detour traffic until all proposed contract work on the detour route is completed, inspected, and approved by the Engineer.
2. Signs should be on both sides of the roadway when the work is taking place on the freeway or a boulevard section.

**h. Pedestrian or Non-Motorized Facilities.**

1. Maintain all facilities in accordance with *The Americans with Disability Act (ADA)* requirements. Provide facilities equivalent to or better than the route a person would have encountered prior to construction activities.

2. Submit an "ADA Work Plan" for sidewalk and ADA ramp construction prior to any sidewalk ramp closures or removals. The work plan must address pedestrian access and detours. The Engineer will have seven calendar days to review the plan for approval or provide comments for revisions required to obtain approval. Do not proceed with the work until the Engineer has approved the plan.

3. Close and detour any sidewalk ramps and crosswalk areas to pedestrian traffic that are impacted by the work. Cover pedestrian signal heads when the crosswalk or ramp is affected.

4. Keep sidewalk areas clear of any equipment or materials at all times the sidewalks are open to pedestrian traffic.

**i. Hot Mix Asphalt (HMA) Work.**

1. Resurface all HMA milled areas the within five (5) days of the concrete and HMA cold milling operation.
2. No traffic is allowed on a HMA or concrete milled surface, unless directed by the Engineer.

**j. Traffic Control Devices.** Ensure all traffic control devices are in accordance with the *MMUTCD* and must meet the "acceptable" criteria as defined in the *ATSSA* publication entitled *"Quality Guidelines for Temporary Traffic Control Devices and Features"* at the time of initial deployment and after each major stage change.

**1. General.**

A. During non-working periods, any work site with uncompleted work must have applicable advance signs and channelizing devices at specific locations, as directed by the Engineer, at no additional cost to the Department.

B. Notify the Engineer 24 hours in advance of when traffic control devices are being delivered to the project site, to allow for initial inspection of devices to take place.

C. Remove from the project site all traffic control devices (including detour signing) no longer needed for a particular operation and equipment for construction within 14 calendar days of reopening the lane/roadway.

**2. Channelizing Devices.**

A. Channelizing devices required for this project are plastic drums, fluorescent sheeting, unless otherwise directed by the Engineer.

B. Ensure all devices have sufficient ballast to prevent moving or tipping. If moving or tipping occurs, place additional ballast, as directed by the Engineer, at no additional cost to the Department. No more than two ballasts are allowed on each channelizing device.

C. Do not use caution tape on this project.

D. Channelizing device spacing must be 25 feet for tapers and 50 feet for tangents or tighter spacing as directed by the Engineer.

E. Adjustment of channeling devices may occur in the field at the direction of the Engineer to better accommodate traffic flow.

**3. Temporary Signs.**

A. Additional W20-1 (ROAD WORK AHEAD) signs are included in the quantities to be placed on all intersecting or adjacent roads where construction activities may be encountered.

B. Place R4-1 (DO NOT PASS) signs, every one-half mile during milling and paving operations.

C. Fabricate, install, and remove temporary sign overlays on existing signs with the pay item for Sign, Type B, Temp, Prismatic, Furn. Attach the overlay in accordance with Subsection 812.03.D.2 of the Standard Specifications for Construction.

**4. Traffic Signals.**

A. Coordinate the removal or modification of existing traffic signals and installation of temporary or permanent signals with the Engineer.

B. Prior to each stage, all temporary and/or permanent traffic signal work necessary

for traffic control during that stage must be complete and fully operational.

C. Adjust placement of temporary signal devices in the field, so that opposing traffic can be seen in a stopped condition where possible, as directed by the Engineer.

D. Prior to each stage, cover any signal indications or overhead signing in conflict with traffic movements during that stage. Methods of covering signs and signal indications require approval by the Engineer before placement.

E. If it becomes necessary to perform installation activities in the middle of an intersection where lane closures would be impractical, Contractor may request police assistance. The Engineer will determine the times police assistance may be used at the intersection. Expedite work in the intersection to minimize the time police assistance is required. Cost for police assistance will be borne by the City.

#### 5. Temporary Pavement Marking.

A. Remove conflicting pavement markings, pavement markings in taper/transition areas and other markings as directed by the Engineer, for operations occupying a location longer than three days.

B. Quantities for temporary tape to be placed during paving operations are based on 4-inch strips, 4 feet long, spaced at 50 feet center to center for lane lines and center line, and double 4-inch strips for centerline marked for no passing.

C. When Type R or NR tape is used, ensure that all temporary pavement markings adhere to the pavement surface until permanent markings are installed.

D. Complete temporary pavement markings in each stage prior to shifting traffic as directed by the Engineer.

E. Replace all existing pavement markings that are removed for traffic control or obliterated during construction.

F. Delineate the edge line as show on the plans.

**k. Measurement and Payment.** Payment will be in accordance with the standard specifications unless otherwise specified. No additional payment will be made for the following activities:

1. Transporting traffic control items from site to site.
2. Providing sufficient vehicles and staff to make changes as-needed onsite during work.
3. Providing sufficient vehicles and staff to remove closures from the roadway.
4. Additional signing or maintaining traffic devices required to expedite the construction will be borne by the Contractor.

# MINIMUM MERGING TAPER LENGTH "L" (FEET)

OFFSET FEET	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
	25	30	35	40	45	50	55	60	65	70	
1	10	15	20	27	45	50	55	60	65	70	TAPER LENGTH "L" IN FEET
2	21	30	41	53	90	100	110	120	130	140	
3	31	45	61	80	135	150	165	180	195	210	
4	42	60	82	107	180	200	220	240	260	280	
5	52	75	102	133	225	250	275	300	325	350	
6	63	90	123	160	270	300	330	360	390	420	
7	73	105	143	187	315	350	385	420	455	490	
8	83	120	163	213	360	400	440	480	520	560	
9	94	135	184	240	405	450	495	540	585	630	
10	104	150	204	267	450	500	550	600	650	700	
11	115	165	225	293	495	550	605	660	715	770	
12	125	180	245	320	540	600	660	720	780	840	
13	135	195	266	347	585	650	715	780	845	910	
14	146	210	286	374	630	700	770	840	910	980	
15	157	225	307	400	675	750	825	900	975	1050	

THE FORMULAS FOR THE MINIMUM LENGTH OF A MERGING TAPER IN DERIVING THE "L" VALUES SHOWN IN THE ABOVE TABLES ARE AS FOLLOWS:

"L" =  $\frac{W \times S^2}{60}$  WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 40 MPH OR LESS

"L" = S x W WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 45 MPH OR GREATER

L = MINIMUM LENGTH OF MERGING TAPER

S = POSTED SPEED LIMIT IN MPH  
PRIOR TO WORK AREA

W = WIDTH OF OFFSET

## TYPES OF TAPERS

### UPSTREAM TAPERS

MERGING TAPER

SHIFTING TAPER

SHOULDER TAPER

TWO-WAY TRAFFIC TAPER

### DOWNSTREAM TAPERS

(USE IS OPTIONAL)

## TAPER LENGTH

L - MINIMUM

1/2 L - MINIMUM

1/3 L - MINIMUM

100' - MAXIMUM

100' - MINIMUM

(PER LANE)



## TABLES FOR "L", "D" AND "B" VALUES

DRAWN BY: CON:AE:djf

JUNE 2006

M0020a

SHEET

CHECKED BY: BMM

PLAN DATE:

1 OF 2

FILE: \\DGN\TSR\STDS\ENGLISH\MNTTRF\M0020a.dgn

REV. 08/21/2006

DISTANCE BETWEEN TRAFFIC CONTROL DEVICES "D"  
AND LENGTH OF LONGITUDINAL BUFFER SPACE ON  
"WHERE WORKERS PRESENT" SEQUENCES

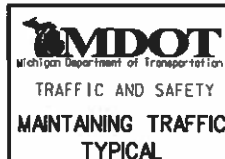
"D" DISTANCES	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)									
	25	30	35	40	45	50	55	60	65	70
D (FEET)	250	300	350	400	450	500	550	600	650	700

GUIDELINES FOR LENGTH OF  
LONGITUDINAL BUFFER SPACE "B"

SPEED* MPH	LENGTH FEET
20	33
25	50
30	83
35	132
40	181
45	230
50	279
55	329
60	411
65	476
70	542

\* POSTED SPEED, OFF PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

1 BASED UPON AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS (A POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS), AASHTO. THIS AASHTO DOCUMENT ALSO RECOMMENDS ADJUSTMENTS FOR THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.



TABLES FOR "L", "D" AND "B" VALUES

DRAWN BY: CON:AE:djf  
CHECKED BY: BMM

JUNE 2006  
PLAN DATE:

M0020a

SHEET  
2 OF 2

FILE: R:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn

REV. 08/21/2006



END  
ROAD WORK

PLACE THIS SIGN ALONG WITH THE  
ADVANCE WORK ZONE SIGNING AS  
DEPICTED ON THE APPROPRIATE  
TYPICAL M0030a-M0080a.

SPEED  
LIMIT  
X X

R2-1

WORK  
ZONE  
BEGINS  
R5-18c



W4-2

RIGHT LANE  
CLOSED  
AHEAD  
W20-5



W20-1

### KEY

- ... CHANNELIZING DEVICES
- LIGHTED ARROW PANEL
- TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT

SIGN = 168 ft±2 - TYPE B  
PLUS ADDITIONAL R2-1's  
THROUGHOUT WORK AREA

SHOULDER



SHOULDER

END  
ROAD WORK

PLACE THIS SIGN ALONG WITH THE  
ADVANCE WORK ZONE SIGNING AS  
DEPICTED ON THE APPROPRIATE  
TYPICAL M0030a-M0080a.

SPEED  
LIMIT  
X X

R2-1

PLACE THROUGHOUT WORK AREA AS  
INDICATED AND AFTER ALL MAJOR  
CROSSROADS IF PERMANENT SIGNS  
ARE NOT IN PLACE.

SPEED  
LIMIT  
X X

R2-1

WORK  
ZONE  
BEGINS  
R5-18c



W4-2

RIGHT LANE  
CLOSED  
AHEAD  
W20-5



W20-1

**MDOT**  
Michigan Department of Transportation  
TRAFFIC AND SAFETY  
MAINTAINING TRAFFIC  
TYPICAL

DRAWN BY: CON:AE:djf  
CHECKED BY: BMM:CRB

OCTOBER 2011  
PLAN DATE:

M0730a

SHEET  
1 OF 2

NOT TO SCALE

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0730a.dgn REV. 10/26/2011

TYPICAL TEMPORARY TRAFFIC CONTROL  
FOR A ONE-LANE CLOSURE ON A DIVIDED  
ROADWAY. NO SPEED REDUCTION


## NOTES

18. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES  
L = MINIMUM LENGTH OF TAPER  
B = LENGTH OF LONGITUDINAL BUFFER  
SEE M0020a FOR "D," "L," AND "B" VALUES
2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.
3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.
- 3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.
- 4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).
5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.
6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.
7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.
8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.
21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.
26. THE LIGHTED ARROW PANEL SHALL BE LOCATED AT THE BEGINNING OF THE TAPER AS SHOWN. WHEN PHYSICAL LIMITATIONS RESTRICT ITS PLACEMENT AS INDICATED, THEN IT SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE.

### SIGN SIZES

DIAMOND WARNING - 48" x 48"  
R2-1 REGULATORY - 48" x 60"  
R5-18c REGULATORY - 48" x 48"

NOT TO SCALE

 Michigan Department of Transportation <b>TRAFFIC AND SAFETY</b> <b>MAINTAINING TRAFFIC</b> <b>TYPICAL</b>		<b>TYPICAL TEMPORARY TRAFFIC CONTROL</b> <b>FOR A ONE-LANE CLOSURE ON A DIVIDED</b> <b>ROADWAY, NO SPEED REDUCTION</b>	
DRAWN BY: CON:AE:djf	OCTOBER 2011	<b>M0730a</b>	SHEET 2 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON Fwy/M0730a.dgn REV. 10/26/2011			

PLACE THIS SIGN ALONG WITH THE  
ADVANCE WORK ZONE SIGNING AS  
DEPICTED ON THE APPROPRIATE  
TYPICAL M0030a-M0080a.

PLACE THIS SIGN ALONG WITH THE  
ADVANCE WORK ZONE SIGNING AS  
DEPICTED ON THE APPROPRIATE  
TYPICAL M0030a-M0080a.

PLACE THROUGHOUT WORK AREA AS  
INDICATED AND AFTER ALL MAJOR  
CROSSROADS IF PERMANENT SIGNS  
ARE NOT IN PLACE.

- KEY**
- ... CHANNELIZING DEVICES
  - ⚡ LIGHTED ARROW PANEL
  - ⇨ TRAFFIC FLOW
  - REFLECTS EXISTING SPEED LIMIT

SIGN = 200 ft ± - TYPE B  
PLUS ADDITIONAL R2-1's  
THROUGHOUT WORK AREA

NOT TO SCALE

**MDOT**  
Michigan Department of Transportation  
TRAFFIC AND SAFETY  
MAINTAINING TRAFFIC  
TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL  
FOR A TWO LANE CLOSURE ON A DIVIDED  
ROADWAY, NO SPEED REDUCTION

DRAWN BY: CON:AE:djf  
CHECKED BY: BMM:CRB

OCTOBER 2011  
PLAN DATE:

M0820a

SHEET  
1 OF 2

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0820a.dgn REV. 10/26/2011


## NOTES

- 1B. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES  
L = MINIMUM LENGTH OF TAPER  
B = LENGTH OF LONGITUDINAL BUFFER  
SEE M0020a FOR "D," "L," AND "B" VALUES
2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.
3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.
- 3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.
- 4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).
5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.
6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.
7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.
8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.
21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.
26. THE LIGHTED ARROW PANEL SHALL BE LOCATED AT THE BEGINNING OF THE TAPER AS SHOWN. WHEN PHYSICAL LIMITATIONS RESTRICT ITS PLACEMENT AS INDICATED, THEN IT SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE.

### SIGN SIZES

DIAMOND WARNING - 48" x 48"  
R2-1 REGULATORY - 48" x 60"  
R5-18c REGULATORY - 48" x 48"

NOT TO SCALE

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO LANE CLOSURE ON A DIVIDED ROADWAY, NO SPEED REDUCTION	
DRAWN BY: CON:AE:djf	OCTOBER 2011	M0820a	SHEET
CHECKED BY: BMM:CRB	PLAN DATE:		2 OF 2
FILE: PW RD/TS/Typicals/Signs/MT NON Fwy/M0820a.dgn REV. 10/26/2011			

## SIGN MATERIAL SELECTION TABLE

SIGN SIZE	SIGN MATERIAL TYPE		
	TYPE I	TYPE II	TYPE III
≤ 36" X 36"		X	X
>36" X 36" ≤ 96" TO WIDE		X	
> 96" WIDE TO 144" WIDE	X	X	
> 144" WIDE	X		


TYPE I            ALUMINUM EXTRUSION  
 TYPE II          PLYWOOD  
 TYPE III        ALUMINUM SHEET

ROUNDING OF CORNERS IS NOT REQUIRED FOR TYPE I OR II SIGNS.  
 VERTICAL JOINTS ARE NOT PERMITTED.  
 HORIZONTAL JOINTS THROUGH SIGN LEGEND OR SYMBOLS ARE NOT PERMITTED.

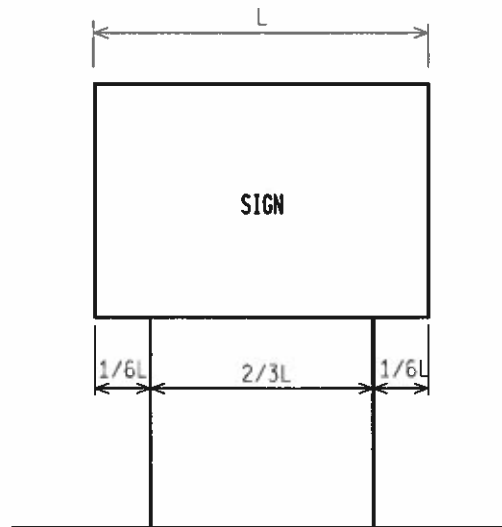
## POST SIZE REQUIREMENTS TABLE

SIGN AREA (ft <sup>2</sup> )	POST TYPE		
	U-CHANNEL STEEL	SQUARE TUBULAR STEEL	WOOD
≤ 9	1 - 3 lb/ft*	1 - 2" 12 or 14 GA*	N/A
9 ≤ 20	2 - 3 lb/ft	2 - 2" 12 or 14 GA	1 - 4" X 6"*
> 20 ≤ 30	N/A	N/A	2 - 4" X 6"
> 30 ≤ 60	N/A	N/A	2 - 6" X 8"
> 60 ≤ 84	N/A	N/A	3 - 6" X 8"

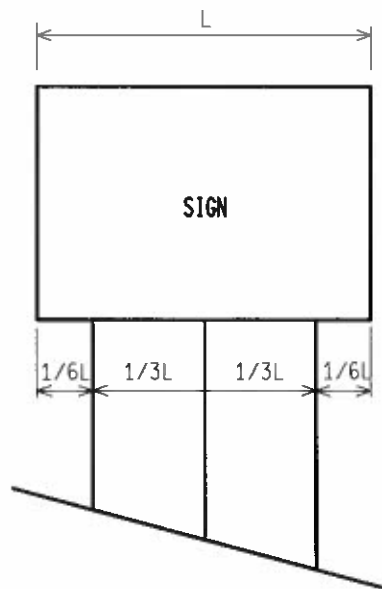
\*SIGNS 4 FEET AND GREATER IN WIDTH REQUIRE 2 POSTS.  
 SIGNS GREATER THAN 8 FEET IN WIDTH REQUIRE 2 OR 3 WOOD  
 POSTS DEPENDING ON AREA OF SIGN.  
 A MAXIMUM OF 2 POSTS WITHIN A 7' PATH IS PERMITTED.

  PREPARED BY DESIGN DIVISION  DRAWN BY: <u>CON/EGH</u> CHECKED BY: <u>AUG</u>	DEPARTMENT DIRECTOR Kirk T. Staudle  APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES  APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR  <h3 style="margin: 0;">GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS</h3>		
	F.H.V.A. APPROVAL	<u>11/2/2017</u> PLAN DATE	<u>WZD-100-A</u>	SHEET 1 OF 11

## 2 POST SIGN SUPPORT SPACING



## 3 POST SIGN SUPPORT SPACING



\* FOR ALL 11' AND 12' LONG SIGNS ON 3 WOOD SUPPORTS, SPREAD POSTS SO AS TO HAVE A 8' MIN. TO 9' MAX. DISTANCE BETWEEN OUTSIDE POSTS.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN

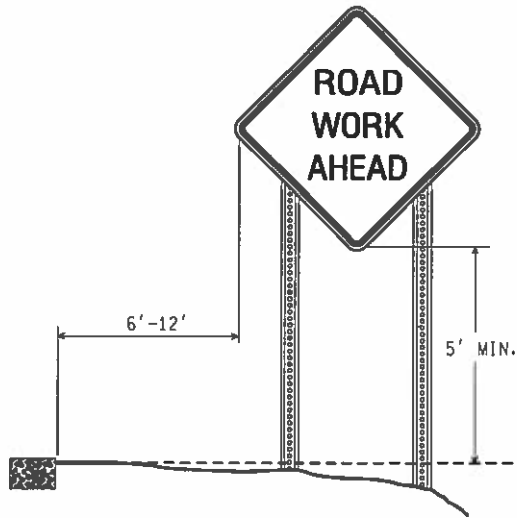
F.H.V.A. APPROVAL

11/2/2017  
PLAN DATE

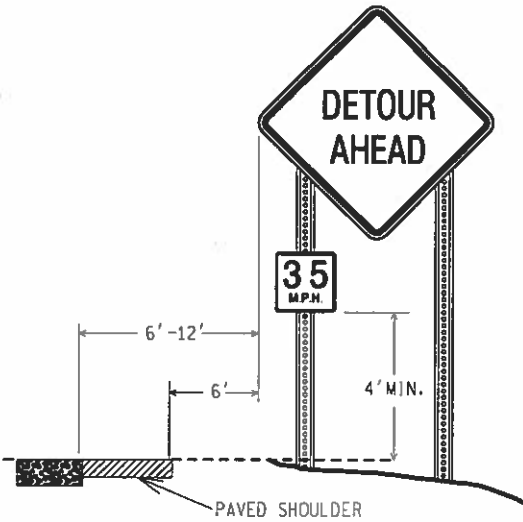
WZD-100-A

SHEET  
2 OF 11

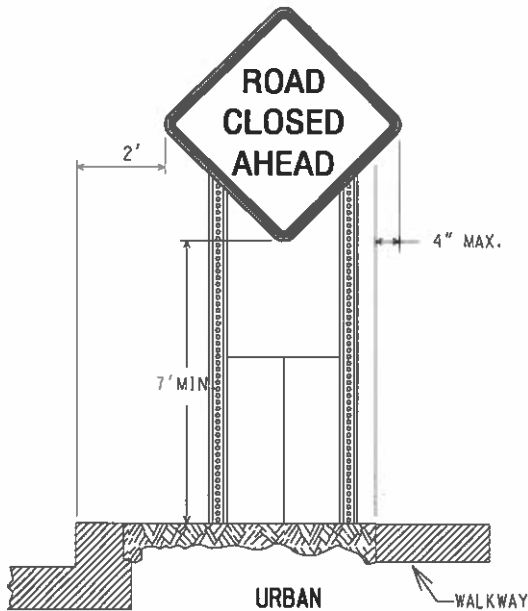
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RURAL

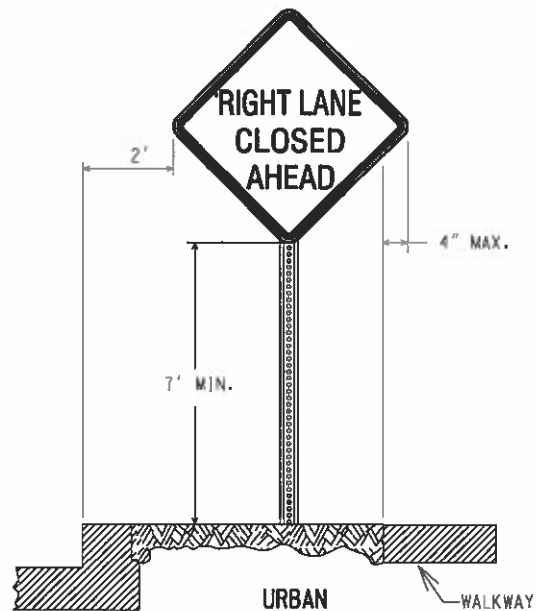


RURAL WITH ADVISORY  
SPEED PLATE



URBAN

(CURBED AREAS OR WHERE  
WALKWAYS ARE PRESENT)



URBAN

(CURBED AREAS OR WHERE  
WALKWAYS ARE PRESENT)

## BOTTOM HEIGHT AND OFFSET

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN

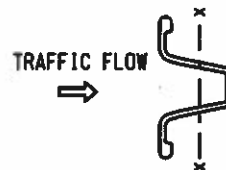
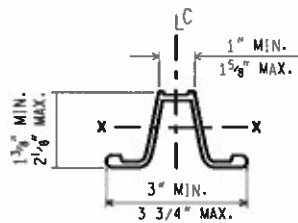
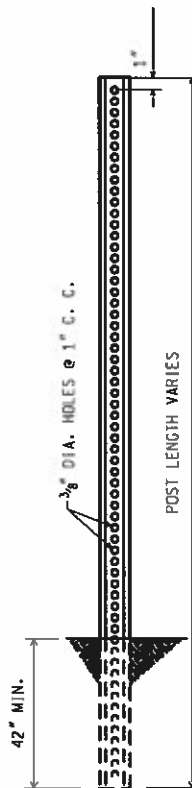
F.H.W.A. APPROVAL

11/2/2017  
PLAN DATE

WZD-100-A

SHEET  
3 OF 11

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WEIGHT = 3 lbs/ft  
 SECT. MOD. X.-X. = 0.31 CUBIC INCHES MIN.

### 3 lb. U - CHANNEL STEEL POST (NO SPLICE)

MOUNT SIGN ON OPEN FACE OF  
 U - CHANNEL STEEL POST

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF DEVELOPMENT STANDARD PLAN

F.H.V.A. APPROVAL

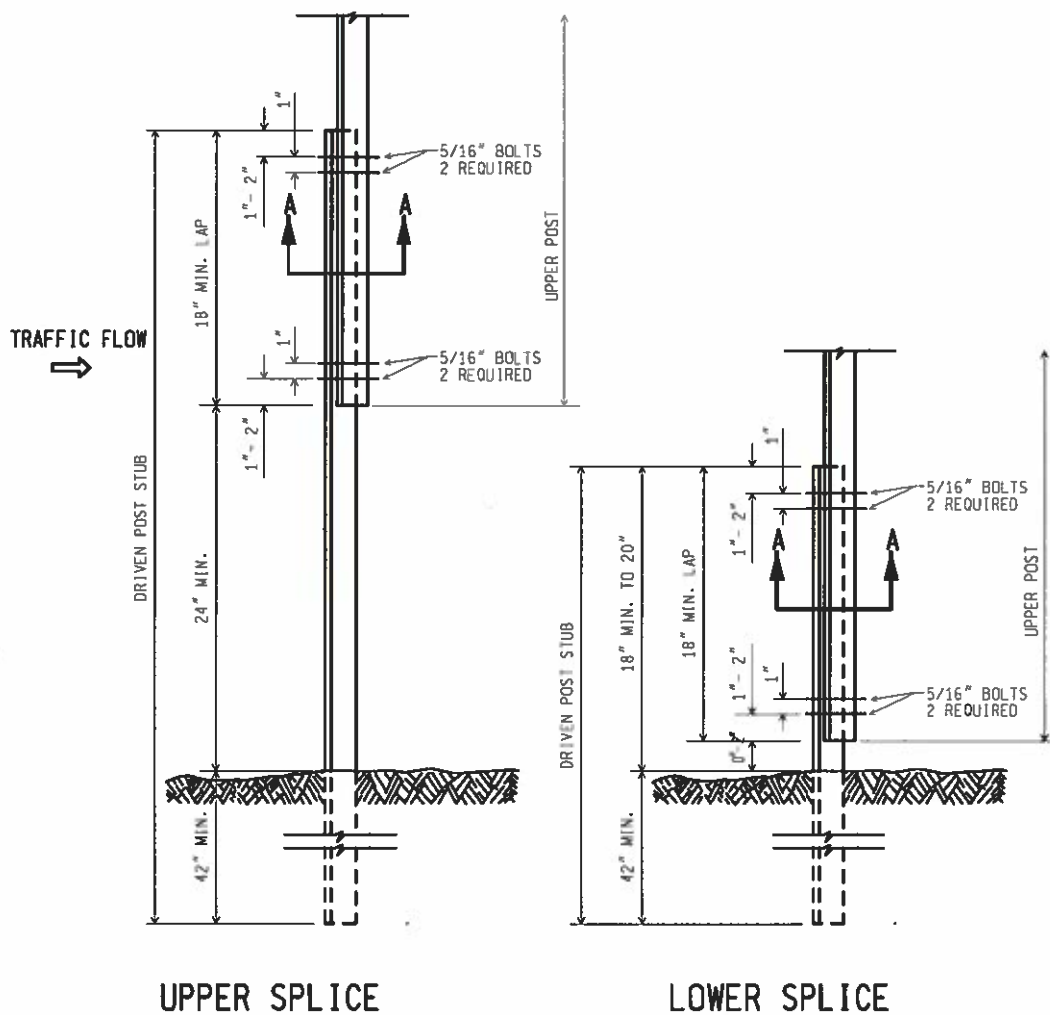
11/2/2017  
 PLAN DATE

WZD-100-A

SHEET  
 4 OF 11

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### 3 lb. U - CHANNEL STEEL POST (WITH SPLICE)

MOUNT SIGN ON OPEN FACE OF  
UPPER U - CHANNEL STEEL POST

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN

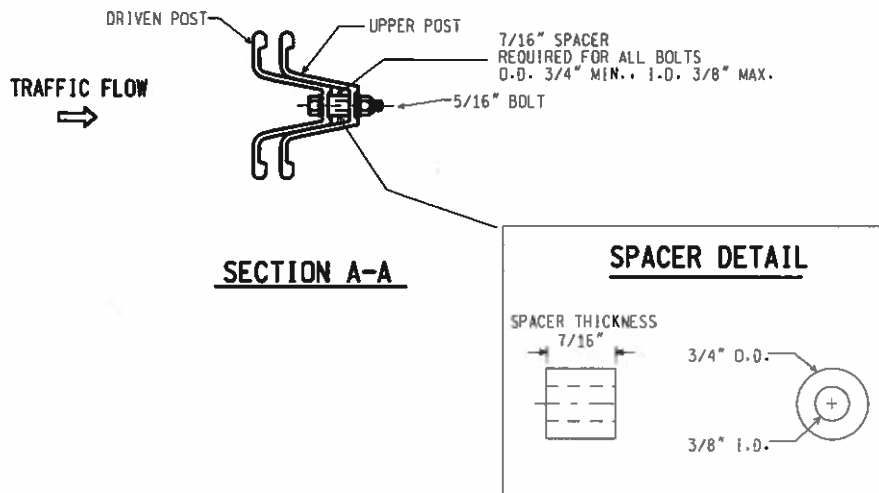
F.H.V.A. APPROVAL

11/2/2017  
PLAN DATE

WZD-100-A

SHEET  
5 OF 11

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**NOTES:**

1. THE SPACER THICKNESS SHALL BE 1/16" LESS THAN THE GAP BETWEEN THE POST WHEN POSITIONED IN THE UNBOLTED CONFIGURATION.
2. THE EXTERIOR BOLT (CLOSEST TO LAP), SPACER, WASHER, AND NUT SHALL BE INSTALLED IN A PREPUNCHED HOLE 1" TO 2" FROM THE END OF THE LAP.
3. THE INTERIOR BOLT (FARTHEST FROM LAP), SPACER, WASHER, AND NUT SHALL BE INSTALLED IN THE NEXT PREPUNCHED HOLE.
4. THE DRIVEN POST SHALL ALWAYS BE MOUNTED IN FRONT OF THE UPPER POST WITH RESPECT TO THE ADJACENT ONCOMING TRAFFIC, REGARDLESS OF THE DIRECTION THE SIGN IS FACING.
5. THE SPLICE LAP SHALL BE FASTENED BY FOUR-5/16" DIA. GALVANIZED A449 BOLTS (SAE J429 GRADE 5) OR GALVANIZED A325 BOLTS.

**3 lb. U - CHANNEL STEEL POST  
(WITH SPLICE)**

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN

F.H.V.A. APPROVAL

11/2/2017  
PLAN DATE

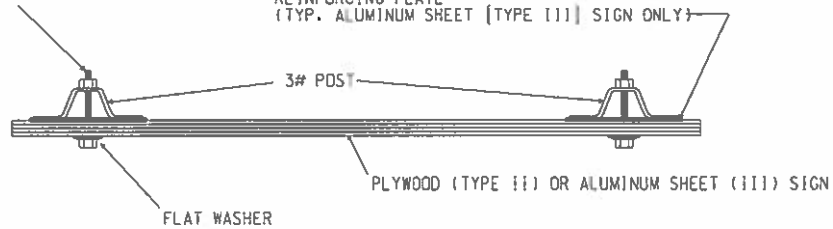
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SHEET  
6 OF 11

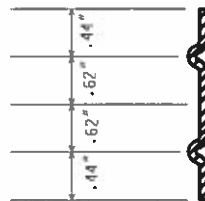
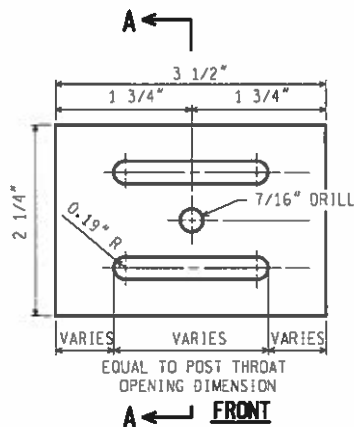
NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

5/16" DIAMETER GALVANIZED BOLT  
AND NUT

SELF-ALIGNING STEEL  
REINFORCING PLATE  
(TYP. ALUMINUM SHEET [TYPE III] SIGN ONLY)



### SIGN TO 3 lb. POST CONNECTION



#### NOTES: (FOR STEEL SIGN REINF' PLATE)

1. MATERIAL: 12 GAUGE CARBON STEEL.
2. TOLERANCE ON ALL DIMENSIONS  $\pm 0.0625"$
3. FINISH-AFTER STAMPING AND PUNCHING, GALVANIZE ACCORDING TO CURRENT SPECIFICATIONS FOR ZINC (HOT GALVANIZE) COATINGS ON PRODUCTS FABRICATED FROM PLATES OR STRIPS

### STEEL SIGN REINFORCING PLATE REQUIRED FOR TYPE III SIGNS ONLY

### 3 lb. U - CHANNEL STEEL POST SIGN CONNECTION

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MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN

F.H.V.A. APPROVAL

11/2/2017  
PLAN DATE

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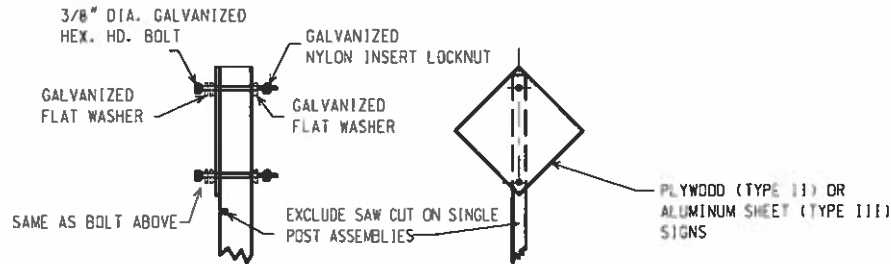
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7 OF 11

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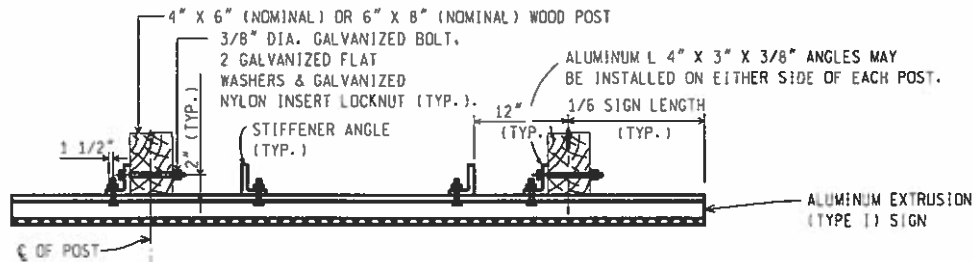


## WOOD POST DETAILS

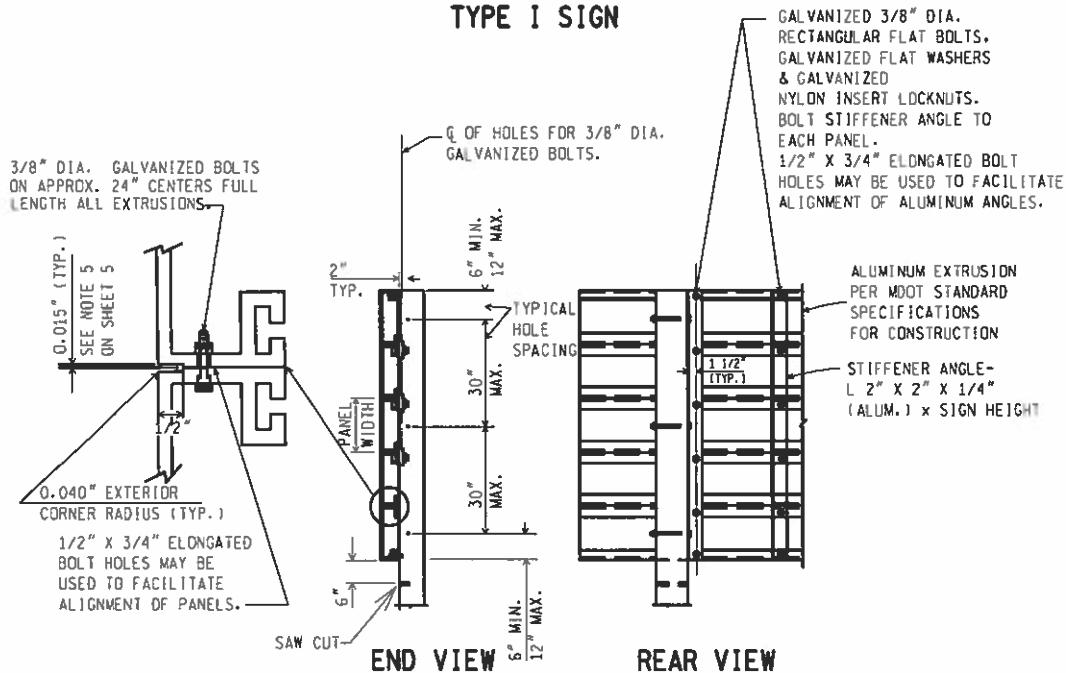
35



## TYPE II AND TYPE III SIGNS



## TOP VIEW TYPE I SIGN



## TYPE I SIGN - ERECTION DETAILS

## WOOD POST CONNECTIONS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN

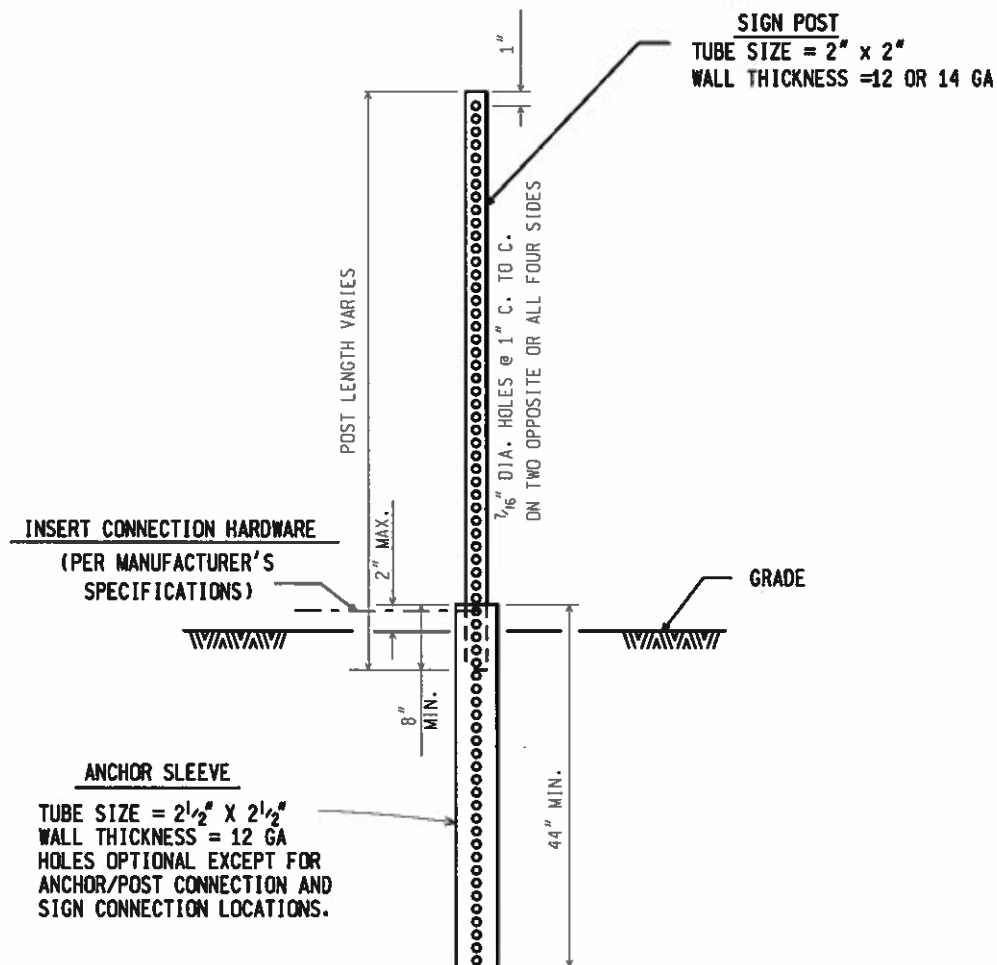
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PLAN DATE

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## SQUARE TUBULAR STEEL POST

NOT TO SCALE

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BUREAU OF DEVELOPMENT STANDARD PLAN

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PLAN DATE

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10 OF 11

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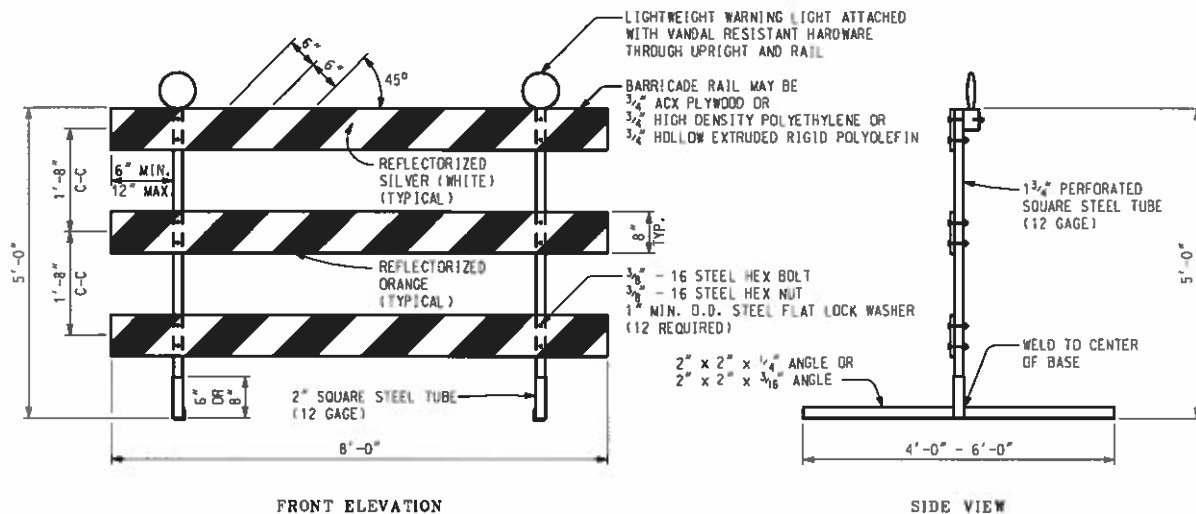
GENERAL NOTES:

1. A MAXIMUM OF TWO POSTS WITHIN A 7 FOOT PATH IS PERMITTED.
2. ALL SIGN POSTS SHALL COMPLY WITH NCHRP 350.
3. ALL POSTS SHALL BE EMBEDDED A MINIMUM OF 42".
4. BRACING OF POST IS NOT PERMITTED.
5. SIGN SHALL BE LEVEL, AND UPRIGHT FOR THE DURATION OF INSTALLATION.
6. ERECT POSTS SO THE SIGN FACE AND SUPPORTS DO NOT VARY FROM PLUMB BY MORE THAN 3/16" IN 3'. PROVIDE A CENTER-TO-CENTER DISTANCE BETWEEN POSTS WITHIN 2 PERCENT OF PLAN DISTANCE.
7. NO MORE THAN ONE SPLICE PER POST, AS SHOWN, WILL BE PERMITTED.
8. POST TYPES SHALL NOT BE MIXED WITHIN A SIGN SUPPORT INSTALLATION.
9. NO VERTICAL JOINTS ARE PERMITTED IN SIGN. NO HORIZONTAL JOINTS THROUGH SIGN LEGEND OR SYMBOLS ARE PERMITTED IN SIGN
10. REMOVE SIGN POSTS AND/OR POST STUBS IN THEIR ENTIRETY WHEN NO LONGER REQUIRED.
11. ALL LABOR, MATERIALS, AND EQUIPMENT, INCLUDING TEMPORARY SUPPORTS REQUIRED TO INSTALL, MAINTAIN, RELOCATE, AND/OR REMOVE THE TEMPORARY SIGN, INCLUDING SUPPORTS, ARE CONSIDERED TO BE INCLUDED IN THE COST OF THE TEMPORARY SIGN.
12. SAW CUTS IN WOOD POSTS ARE TO BE PARALLEL TO THE BOTTOM OF THE SIGN.
13. POSTS SHALL NOT EXTEND MORE THAN 4" ABOVE TOP OF SIGN.
14. TEMPORARY WOOD SUPPORTS DO NOT REQUIRE PRESERVATIVE TREATMENT.

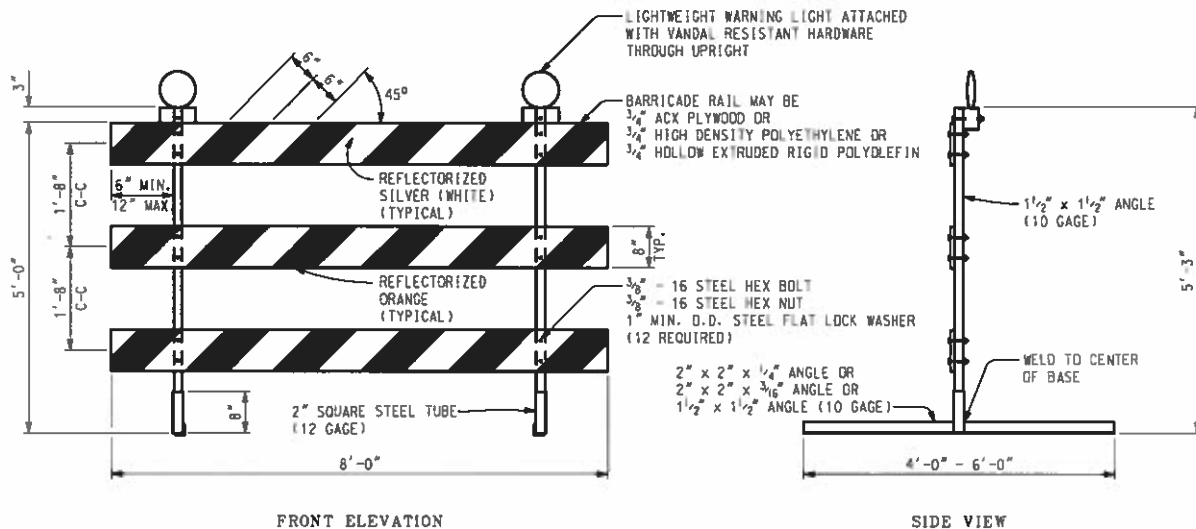
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN	<u>                    </u> F.H.W.A. APPROVAL	<u>11/2/2017</u> PLAN DATE	WZD-100-A	SHEET 11 OF 11
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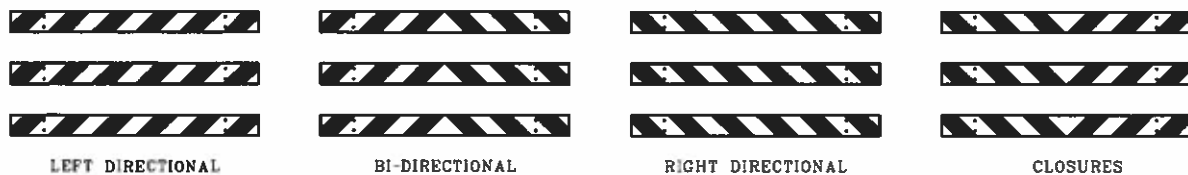
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**PERFORATED SQUARE STEEL TUBE OPTION**



**ANGLE IRON OPTION**



**BARRICADE RAIL SHEETING OPTIONS  
TYPE III BARRICADES**

Other Type III Barricades meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at [http://safety.fhwa.dot.gov/roadway\\_dept/road\\_hardware/wzd.htm](http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm)



PREPARED  
BY  
DESIGN DIVISION

DRAWN BY: ECH

CHECKED BY: MWS

DEPARTMENT DIRECTOR  
Kirk T. Staudt

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES  
ENGINEER OF DEVELOPMENT

APPROVED BY: (SPECIAL DETAIL) 39  
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

Temporary  
Traffic Control Devices

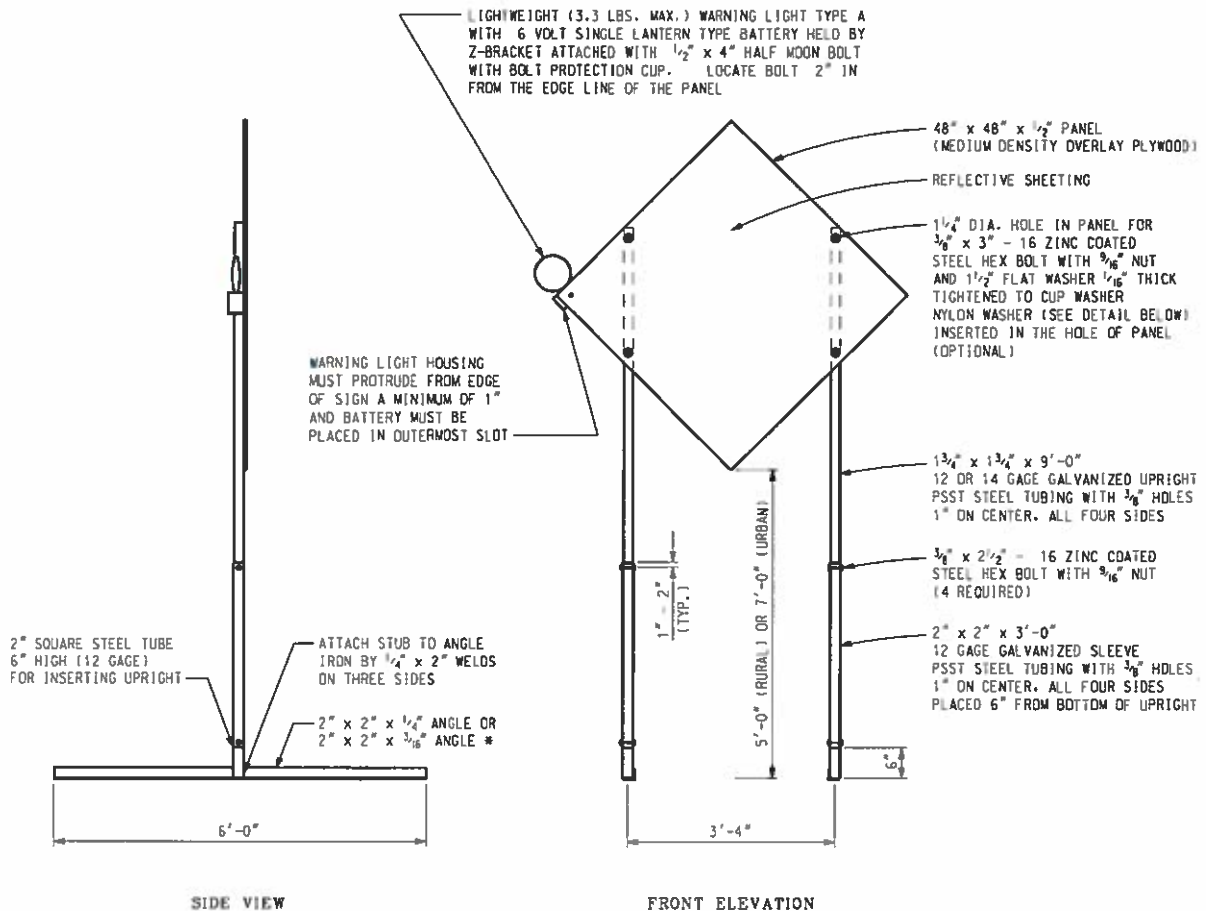
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1/18/11  
PLAN DATE

WZD-125-E

SHEET  
1 OF 3

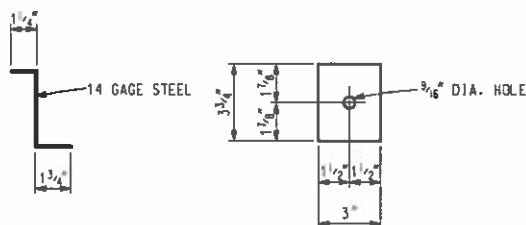




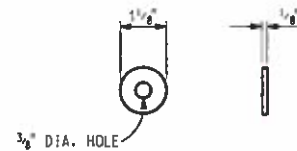
### TEMPORARY SIGN SUPPORT

(WARNING LIGHT PLACED ON SIDE CLOSEST TO TRAFFIC)

- \* SIGN STAND IS BALLASTED WITH FOUR OR MORE 35 LB SANDBAGS. A MINIMUM OF ONE ON EACH END.
- UPRIGHTS SHALL NOT EXTEND ABOVE THE SIGN PANEL.



Z-BRACKET DETAIL



OPTIONAL NYLON WASHER

Other temporary sign supports meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at  
[http://safety.fhwa.dot.gov/roadway\\_dept/road\\_hardware/wzd.htm](http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm)

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
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SPECIAL DETAIL  
F.H.W.A. APPROVAL

1/18/11  
PLAN DATE

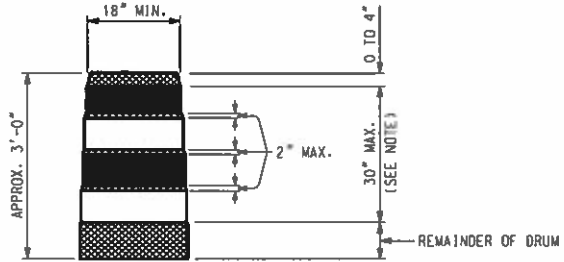
WZD-125-E

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2 OF 3

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- PLASTIC DRUM
- ▲▲▲ PROPOSED TYPE III BARRICADE
- ▲▲▲ EXISTING TYPE III BARRICADE

## SYMBOLS TO BE USED ON PLANS



- REFLECTORIZED ORANGE
- REFLECTORIZED WHITE
- ▨ NON REFLECTORIZED ORANGE

NOTE:  
DRUMS SHALL HAVE AT LEAST 4 HORIZONTAL REFLECTORIZED STRIPES (2 ORANGE AND 2 WHITE) OF 6" UNIFORM WIDTH, ALTERNATING IN COLOR WITH THE TOPMOST REFLECTORIZED STRIPE BEING ORANGE. NON REFLECTORIZED SPACES BETWEEN THE HORIZONTAL REFLECTORIZED ORANGE AND WHITE STRIPES SHALL BE ORANGE IN COLOR AND EQUAL IN WIDTH.

## PLASTIC DRUM

### NOTES:

2" PERFORATED SQUARE STEEL TUBES MAY BE USED TO FABRICATE THE HORIZONTAL BASE OF THE TYPE III BARRICADE.

WARNING LIGHTS SHALL BE PLACED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL OTHER PROVISIONS IN THE CONTRACT ON TYPE III BARRICADES.

SEE ROAD STANDARD PLANS R-113-SERIES FOR TEMPORARY CROSSOVERS FOR DIVIDED ROADWAY, AND R-126-SERIES FOR TYPICAL LOCATION AND SPACING OF PLASTIC DRUMS FOR PLACEMENT OF TEMPORARY CONCRETE BARRIER.

SIGNS, BARRICADES, AND PLASTIC DRUMS SHALL BE FACED WITH PRESSURE-SENSITIVE REFLECTIVE SHEETING ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

SANDBAGS SHALL BE USED WHEN SUPPLEMENTAL WEIGHTS ARE REQUIRED TO ACHIEVE STABILITY OF THE BARRICADE. THE SANDBAGS SHALL BE PLACED SO THEY WILL NOT COVER OR OBSTRUCT ANY REFLECTIVE PORTION OF THE TRAFFIC CONTROL DEVICE.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN

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(SPECIAL DETAIL)  
F.H.V.A. APPROVAL

1/18/11  
PLAN DATE

WZD-125-E

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3 OF 3

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MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY  
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

JUN 15 2020

**PERMIT APPLICATION FOR WATER SUPPLY SYSTEMS**  
(CONSTRUCTION - ALTERATION - ADDITION OR IMPROVEMENT) AS DESCRIBED HEREIN  
Required under the Authority of 1976 PA 399, as amended (Act 399)

This application becomes an Act 399 Permit only when signed and issued by authorized Michigan Department of Environment, Great Lakes, and Energy (EGLE) staff. See instructions below for completion of this application.

<b>1. Municipality or Organization, Address and WSSN</b> that will own or control the water facilities to be constructed. This permit is to be issued to:  City of Flint 1101 S. Saginaw Street Flint, Michigan 48502  WSSN: 02310		<b>Permit Stamp Area (EGLE use only)</b>  MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  PERMIT NO. <b>W 209076 JUN 02 '20</b>  EXAMINED AND APPROVED FOR COMPLIANCE WITH ACT 399, PA. 1976	
<b>2. Owner's Contact Person</b> (provide name for questions):  Contact: Mark Adas Title: City Engineer Phone: 810-766-7135			
<b>3. Project Name</b> (Provide phase number if project is segmented):	<b>4. Project Location</b> (City, Village, Township): City of Flint	<b>5. County</b> (location of project): Genesee	

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF  
THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

cc:

Issued by: 

Reviewed by: 

☐ If this box is marked see attached special conditions.

**Instructions:** Complete items 1 through 5 above and 6 through 21 on the following pages of this application. Print or type all information except for signatures. Mail completed application, plans and specifications, and any attachments to the EGLE District Office having jurisdiction in the area of the proposed construction.

**Please Note:**

- This **PERMIT** only authorizes the construction, alteration, addition or improvement of the water system described herein and is issued solely under the authority of 1976 PA 399, as amended.
- The issuance of this **PERMIT** does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other EGLE permits, or approvals from other units of government as may be required by law.
- This **PERMIT** expires two (2) years after the date of issuance in accordance with R 325.11306, 1976 PA 399, administrative rules, unless construction has been initiated prior to expiration.
- Noncompliance with the conditions of this permit and the requirements of the Act constitutes a violation of the Act.
- Applicant must give notice to public utilities in accordance with 1974 PA 53, (MISS DIG), being Section 460.701 to 460.718 of the Michigan Compiled Laws and comply with each of the requirements of that Act.
- All earth changing activities must be conducted in accordance with the requirements of the Soil Erosion and Sedimentation Control Act, Part 91, 1994 PA 451, as amended (Act 451).
- All construction activity impacting wetlands must be conducted in accordance with the Wetland Protection Act, Part 303, 1994 PA 451, as amended.
- Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.
- Where applicable for water withdrawals, the issuance of this permit indicates compliance with the requirements of Part 327 of Act 451, Great Lakes Preservation Act.

JUN 15 2020

- 6. Facilities Description** – In the space below provide a detailed description of the proposed project. Applications without adequate facilities descriptions will be returned. SEE EXAMPLES BELOW. Use additional sheets if needed.

Project will include the installation of 400 feet of 8-inch water main along Westbound Robert T. Longway Blvd. from a 12-inch man on S. Chavez to Burton St.

**EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES**

Water Mains	500 feet of 8-inch water main in First Street from Main Street north to State Street. <b>OR</b> 250 feet of 12-inch water main in Clark Road from an existing 8-inch main in Third Avenue north to a hydrant.
Booster Stations	A booster station located at the southwest corner of Third Avenue and Main Street, and equipped with two, 15 Hp pumps each rated 150 gpm @ 200 feet TDH. Station includes backup power and all other equipment as required for proper operation.
Elevated Storage Tank	A 300,000 gallon elevated storage tank located in City Park. The proposed tank shall be spherical, all welded construction and supported on a single pedestal. The tank shall be 150 feet in height, 40 feet in diameter with a normal operating range of 130 – 145 feet. The interior coating system shall be ANSI/NSF Standard 61 approved or equivalent. The tank will be equipped with a cathodic protection system, and includes a tank level control system with telemetry.
Chemical Feed	A positive displacement chemical feed pump, rated at 24 gpd @ 110 psi to apply a chlorine solution for Well No. 1. Chlorine is 12.5% NaOCL, ANSI/NSF Standard 60 approved and will be applied at a rate of 1.0 mg/l of actual chlorine.
Water Supply Well	Well No. 3, a 200 foot deep well with 170 feet of 8-inch casing and 30 feet of 8-inch, 10 slot screen. The well will be equipped with a 20 Hp submersible pump and motor rated 200 gpm @ 225 feet TDH, set at 160 feet below land surface.
Treatment Facilities	A 5 million gpd water treatment plant located at the north end of Second Avenue. The facility will include 6 low service pumps, 2 rapid mix basins, 4 flocculation/sedimentation basins, 8 dual media filters, 3 million gallon water storage reservoir and 6 high service pumps. Also included are chemical feed pumps and related appurtenances for the addition of alum, fluoride, phosphate and chlorine.

**Permit Application for Water Supply Systems (Continued)**

<b>General Project Information – Complete all boxes below.</b>	
<p>7. Design engineer's name, engineering firm, address, phone number, and email address:</p> <p>Ariana Jeske Spalding DeDecker 400 Ann St NW Suite 204 Grand Rapids, MI 49504 ajeske@sda-eng.com</p>	<p>8. Indicate who will provide project construction inspection:</p> <p><input checked="" type="checkbox"/> Organization listed in Box 1.  <input type="checkbox"/> Engineering firm listed in Box 7.  <input type="checkbox"/> Other - name, address, and phone number listed below.</p>
<p>9. Is a basis of design attached?</p> <p><input checked="" type="checkbox"/> YES                      <input type="checkbox"/> NO</p>	
<p>If no, briefly explain why a basis of design is not needed.</p>	
<p>10. Are sealed and signed engineering plans attached?</p> <p><input checked="" type="checkbox"/> YES                      <input type="checkbox"/> NO</p>	
<p>If no, briefly explain why engineering plans are not needed.</p>	
<p>11. Are sealed and signed construction specifications attached?</p> <p><input checked="" type="checkbox"/> YES                      <input type="checkbox"/> NO</p>	
<p>If specifications are not attached, they need to be on file at EGLE.</p>	
<p>12. Were Recommended Standards for Water Works, Suggested Practice for Water Works, AWWA guidelines, and the requirements of Act 399 and its administrative rules followed?</p> <p><input checked="" type="checkbox"/> YES                      <input type="checkbox"/> NO</p>	
<p>If no, explain which deviations were made and why.</p>	
<p>13. Are all coatings, chemical additives and construction materials ANSI/NSF or other adequate 3<sup>rd</sup> party approved?</p> <p><input checked="" type="checkbox"/> YES                      <input type="checkbox"/> NO</p>	
<p>If no, describe what coatings, additives or materials did not meet the applicable standard and why.</p>	
<p>14. Are all water system facilities being installed in the public right-of-way or a dedicated utility easement? (For projects not located in the public right-of-way, utility easements must be shown on the plans.)</p> <p><input checked="" type="checkbox"/> YES                      <input type="checkbox"/> NO</p>	
<p>If no, explain how access will be obtained.</p>	
<p>15. Is the project construction activity within a wetland (as defined by Section 324.30301(d)) of Part 303, 1994 PA 451?</p> <p><input type="checkbox"/> YES                      <input checked="" type="checkbox"/> NO</p>	
<p>If yes, a wetland permit must be obtained.</p>	
<p>16. Is the project construction activity within a 100-year floodplain (as defined by R 323.1311(e)) of Part 31, 1994 PA 451, administrative rules?</p> <p><input type="checkbox"/> YES                      <input checked="" type="checkbox"/> NO</p>	
<p>If yes, a flood plain permit must be obtained.</p>	
<p>17. Is the project construction activity within 500 feet of a lake, reservoir, or stream?</p> <p><input checked="" type="checkbox"/> YES                      <input type="checkbox"/> NO</p>	
<p>If yes, a Soil and Erosion Control Permit must be obtained or indicate if the owner listed in box 2 of this application is an Authorized Public Agency (Section 10 of Part 91, 1994 PA 451)                      <input type="checkbox"/> Owner is APA.</p>	

**Permit Application for Water Supply Systems (Continued)**

18. Will the proposed construction activity be part of a project involving the disturbance of five (5) or more acres of land?  
☐ YES ☒ NO

If YES, is this activity regulated by the National Pollutant Discharge Elimination System (NPDES) storm water regulations?

☐ YES: NPDES Authorization to discharge storm water from construction activities must be obtained.

☐ NO: Describe why activity is not regulated.

Please call 517-241-8993 with questions regarding the applicability of the storm water regulations.

19. Is the project in or adjacent to a site of suspected or known soil or groundwater contamination?

☐ YES ☒ NO

If YES, attach a copy of a plan acceptable to EGLE for handling contaminated soils and/or groundwater disturbed during construction. Contact the local EGLE district office for listings of Michigan sites of environmental contamination.

20. IF YOU ARE A CUSTOMER/WHOLESALE/BULK PURCHASER, COMPLETE THE FOLLOWING

1. Name and WSSN of source water supply system (seller): 02310 City of Flint
2. Does the water service contract require water producer/seller to review and approve customer/wholesale/bulk purchaser water system construction plans?

☐ YES ☒ NO

If yes to #2, the producer/seller approval letter must be attached when submitted to EGLE.

21. **Owner's Certification.** The owner of the proposed facilities or the owner's authorized representative shall complete the owner's certification. It is anticipated that the owner will either be a governmental agency (city, village, township, county, etc.) or a private owner (individual, company, association, etc.) of a Type I public water supply.

**OWNER'S CERTIFICATION**

I, Mark Adas (name), acting as the City Engineer (title/position) for

City of Flint (entity owning proposed facilities) certify that this project has

been reviewed and approved as detailed by the Plans and Specifications submitted under this application, and is in compliance with the requirements of 1976 PA 399, as amended, and its administrative rules.

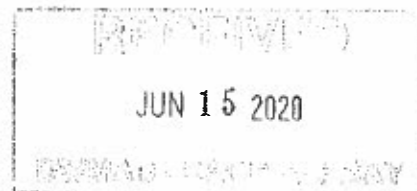
Signature\*



05/13/2020  
Date

810-610-7771  
Phone

\*Original signature only, no photocopies will be accepted.



Permit Application for Water Supply Systems (Continued)  
**PROJECT BASIS OF DESIGN – FOR WATER MAIN PROJECTS**

PROJECT NAME: Robert T. Longway Watermain Replacement

For this PROJECT the following information must be provided per Act 399 unless waived by the Department. For projects other than water main installation, or if additional space is needed, attach separate sheet(s) with detailed Basis of Design calculations.

- A. A general map of the initial and ultimate service areas  
☒ Included on engineering plans ☐ Attached separately
- B. Number of service connections served by this permit application 5
- C. Total number of service connections ultimately served by entire project 5
- D. Residential Equivalent Units (REUs) served by this permit application 5
- E. Total Residential Equivalent Units (REUs) ultimately served by entire project 5
- F. Water flow rates for proposed project based on REUs listed in "D" and "E" above
1. Initial design average day flow (mgd) \_\_\_\_\_
  2. Initial design maximum day flow (mgd) \_\_\_\_\_
  3. Total design average day flow (mgd) \_\_\_\_\_
  4. Total design maximum day flow (mgd) \_\_\_\_\_
  5. Required fire flows: <sup>(1)</sup> \_\_\_\_\_ gpm for \_\_\_\_\_ hours
- G. Actual flows and pressures of existing system at the connection point(s) <sup>(2)</sup>
- \_\_\_\_\_ 1.49 gpm at 64.11 psi  
\_\_\_\_\_ gpm at \_\_\_\_\_ psi  
\_\_\_\_\_ gpm at \_\_\_\_\_ psi  
\_\_\_\_\_ gpm at \_\_\_\_\_ psi
- H. Estimated minimum flows and pressures within the proposed water main system <sup>(3)</sup>
- \_\_\_\_\_ gpm at \_\_\_\_\_ psi

- (1) Every water system must decide what levels of firefighting flows they wish to provide. Fire flow should be appropriate for the area (residential, commercial, industrial) being served by the project. Typical fire flow rates can be obtained from the water supply, local fire dept., ISO or AWWA. The water system must then be designed to be able to provide the required fire flows while maintaining at least 20 psi in all portions of the distribution system.
- (2) Flows and pressures at the connection points must be given to determine if the existing water main(s) are able to deliver water to the new service area. These numbers can be obtained from a properly modeled and calibrated distribution system hydraulic analysis or hydrant flow tests performed in the field. If more than one connection is proposed, list as needed.
- (3) List what the estimated minimum flows can be expected in the proposed water mains based on estimated water demands, head losses, elevation changes and other factors that may affect flows, such as dead end mains.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**INSURANCE**

CSD:LFS

1 of 1

APPR:KF:DBP:02-01-18

**Add the following after the first paragraph in subsection 107.10.C.4, on page 60 of the Standard Specifications for Construction:**

In addition to the above insurance requirements, the following agencies must be listed as additional insured:

City of Flint  
Genesee County  
Genesee County Road Commission

Job(s): 207637A



CITY OF FLINT  
SPECIAL PROVISION  
FOR  
PAVEMENT REMOVAL, MODIFIED

COF:SDA

1 of 1

MAY 2020

**a. Description.** This work consists of providing all labor, equipment and materials necessary to remove existing pavement, valley gutter, curb, sidewalk, and sidewalk ramp to the limits shown on the plans, regardless of the existing material type, number of layers or thickness of individual layers.

**b. Materials.** Provide materials in accordance with subsection 204.02 of the Standard Specifications for Construction.

**c. Construction.** Remove and dispose of existing pavement, and valley gutter according to subsection 204.03 of the Standard Specifications for Construction.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Pavt, Rem, Modified.....	Square Yard

**Pavt, Rem, Modified** will be measured and paid for once for all areas identified for removal, regardless of the existing material type, number of layers or thickness of individual layers.

CITY OF FLINT  
SPECIAL PROVISION  
FOR  
ADJUSTMENT OF PUBLIC UTILITY STRUCTURES

SD:DLH

Page 1 of 2

Date: 2/2/2018

**Description**

This work shall consist of adjusting, reconstructing, and installing new waterproof covers on public utility structures to maintain the integrity of these structures and to keep water infiltration to an absolute minimum. This work shall be done in accordance with Section 403 of the *2012 Michigan Department of Transportation Standard Specifications for Construction*, any Public Utilities owner's requirements, this specification, and any details shown in the plans. "Public Utilities" include all other structures not classified as "Drainage Structures" which include watermain and sanitary structures under the jurisdiction of the Local Municipal Department of Public Works (LM-DPW), or watermain, sanitary, or telecommunication, gas, oil, electric structures under the jurisdiction of various public and or private corporations.

**Materials**

All materials shall be as specified in this special provision or in any details that may be in the plans.

Materials used in the "adjustment" or "reconstruction" of manholes shall be the same as those used in the initial construction unless otherwise approved by the Engineer and public utility owner.

Covers CF-1 TO CF-6 shall meet City of Flint Standards, as shown on the plans. All other covers shall conform to Michigan Department of Transportation's standard plans.

**Construction**

The Contractor must fulfill all permit requirements as applicable, including but not limited to, posting of all required fees, bonds, and insurance, and provide notice to the public utility owner in order to schedule and fulfill any and all inspection requirements.

Before start of work, the public utility owner or their representatives, the Engineer, and the Contractor shall meet and collectively inspect each structure prior to beginning work and make a determination as to the type of treatment that is necessary. The Contractor shall arrange this meeting.

All structures are to be opened by the Contractor for inspection by the Engineer and Utility representatives for confirmation and/or change of adjustment and reconstruction quantities prior to beginning any work. Payment for inspection of structures shall be paid as part of the structure adjustment items. When work is being performed, the Contractor shall notify the Engineer and utility owner (utility, city, etc.) for inspection. Final work shall not be accepted until written acceptance is received from the utility owner.

**Measurement and Payment**

The completed work as measured will be paid for at the contract unit price for the following contract item (pay item).

<b>Pay Item</b>	<b>Pay Unit</b>
Dr Structure Cover, Adj, Case __, Modified.....	Each
Structure, Adj, Add Depth .....	Foot
Structure Cover, Special.....	Each

The items **Structure Cover, Adj, Case \_\_, Structure, Adj, Add Depth, Structure Cover, Special** include all equipment, labor and materials to complete the items.

**Structure Cover, Special** includes the cost obtaining a frame and cover that meets the specifications of the Engineer and public utility owner and the details shown in the plans.

Existing structure covers that have been replaced are to be disposed of in a legal manner off the project by the Contractor and the cost shall be included in the structure adjustment pay items.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**HOT MIX ASPHALT PRICES FOR ADJUSTMENTS**

LAP:BMS

1 of 1

APPR:MAS:KAS:03-05-19

**a. Description.** This special provision identifies the price(s) that will be used in all payment adjustments for work related to hot mix asphalt item(s) used in conjunction with this contract.

If the Contractors bid is lower than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is lower than the established base price any negative adjustment will use the base price established herein in the calculation for the adjustment.

If the Contractors bid is higher than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is higher than the established base price any negative adjustment will use the Contractors bid in the calculation for the adjustment.

**b. Base Unit Prices.** The base price(s) shown below will be used as specified above in calculating adjustments for the pay item(s) listed herein:

Pay Item Code	Pay Item Name	Unit	Base Price
5010025	Hand Patching	Ton	\$165.22
5010046	HMA, 3E10	Ton	\$81.87
5010052	HMA, 4E10	Ton	\$78.51
5010058	HMA, 5E10	Ton	\$77.55

CITY OF FLINT  
SPECIAL PROVISION  
FOR  
COLD MILLING, PAVT

SD: AJJ

Page 1 of 1

5/19/2020

**a. Description.**

Accurately remove the top portion of an existing concrete, HMA, and HMA concrete composite pavements to the depth and cross section shown on the log or plans, and as directed by the Engineer.

**b. Equipment.**

Use cold-milling machine(s) equipped with positive depth control adjustments and a positive means for controlling the cross slope. The cold-milling equipment used must be capable of removing the chips from the pavement and preventing dust from escaping into the air.

**c. Construction.**

Cold-mill the existing pavement to the depth and cross section indicated on the log or plans, and as directed by the Engineer. Collect and dispose of the excess material resulting from the operations as specified in subsections 104.07.D and 204.03.B of the Standard Specifications for Construction.

In the event that the steel reinforcement is exposed during the milling operation, the Contractor is to remove the exposed steel and all costs associated will be included in this pay item.

Provide a final surface texture that is reasonably smooth and free of gouges, holes or large depressions. Prevent damage to the adjacent concrete. Where material is removed below the depth specified due to poor cold-milling practice, backfill and compact the resulting holes or depressions by hand patching according to subsection 501.03.C.9. Repair all damage to adjacent surfaces as directed by the Engineer. All costs associated with this corrective work will be borne by the Contractor.

**d. Measurement and Payment.**

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

<b>Pay Item</b>	<b>Pay Unit</b>
Cold Milling, Pavt .....	Square Yard

**Cold Milling, Pavt** includes removing pavement as described herein, loading removed debris, hauling debris, and disposal of the debris. Material picked up by sweeping after cold-milling will not be paid for separately. This work will be measured by area in square yards, regardless of the number of passes required to remove the pavement to the required depth.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**COLD-MILLING CONCRETE PAVEMENT**

C&amp;T:GEN

1 of 1

C&amp;T:APPR:JFS:EMB:08-22-11

**a. Description.** Accurately remove the top portion of an existing concrete pavement to the depth and cross section shown on the log or plans, and as directed by the Engineer.

**b. Equipment.** Use cold-milling machine(s) equipped with positive depth control adjustments and a positive means for controlling the cross slope. The cold-milling equipment used must be capable of removing the chips from the pavement and preventing dust from escaping into the air.

**c. Construction.** Cold-mill the existing concrete pavement to the depth and cross section indicated on the log or plans, and as directed by the Engineer. Collect and dispose of the excess material resulting from the operations as specified in subsections 104.07.D and 204.03.B of the Standard Specifications for Construction.

Provide a final surface texture that is reasonably smooth and free of gouges, holes or large depressions. Prevent damage to the adjacent concrete. Where material is removed below the depth specified due to poor cold-milling practice, backfill and compact the resulting holes or depressions by hand patching according to subsection 501.03.C.9. Repair all damage to adjacent surfaces as directed by the Engineer. All costs associated with this corrective work will be borne by the Contractor.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Cold Milling Conc Pavt .....	Square Yard

**Cold Milling Conc Pavt** includes removing concrete pavement as described herein, loading removed debris, hauling debris, and disposal of the debris. Material picked up by sweeping after cold-milling will not be paid for separately. This work will be measured by area in square yards, regardless of the number of passes required to remove the concrete to the required depth.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PORTLAND CEMENT CONCRETE PRICES FOR ADJUSTMENTS

LAP:BMS

1 of 1

APPR:MAS:KAS:03-05-19

**a. Description.** This special provision identifies the price(s) that will be used in all price adjustments for work related to Portland cement concrete item(s) used in conjunction with this contract.

If the Contractors bid is lower than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is lower than the established base price any negative adjustment will use the base price established herein in the calculation for the adjustment.

If the Contractors bid is higher than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is higher than the established base price any negative adjustment will use the Contractors bid in the calculation for the adjustment.

**b. Base Unit Prices.** The base price(s) shown below will be used as specified above in calculating adjustments for the pay item(s) listed herein:

Pay Item Code	Pay Item Name	Unit	Base Price
6020108	Conc Pavt, Nonreinf, 10 inch	Syd	\$47.69

CITY OF FLINT  
SPECIAL PROVISION  
FOR  
**DETECTABLE WARNING SURFACES**

SD: DLH

Page 1 of 1

Date: 2/2/2018

**Description**

This work shall be done in accordance with Section 803 of the *2012 Michigan Department of Transportation Standard Specifications for Construction*, except as herein provided.

**Materials**

The approved detectable warning surfaces shall be cast iron detectable warning plates and shall be Federal Color No. 30252 (Rust Red).

**Construction**

Install detectable warning surfaces in accordance with the manufacturer's instructions, Section 803 of the *2012 Michigan Department of Transportation Standard Specifications for Construction*, and MDOT Standard Plan R-28 Series.

**Measurement and Payment**

The completed work as measured will be paid for at the contract unit price for the following pay items:

<b>Pay Item</b>	<b>Pay Unit</b>
Detectable Warning Surface, Modified.....	Foot

The item of **Detectable Warning Surface, Modified** includes all labor, materials, and equipment necessary to perform the removal operation as required to complete the work. The pay limits will be measured in place by length along the center of the 24 inch wide detectable warning at the required locations.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
TEMPORARY PEDESTRIAN TYPE II BARRICADE

OFS:RAL

1 of 2

APPR:CAL:CT:08-02-16

**a. Description.** This work consists of furnishing, installing, maintaining, relocating, and removing a temporary pedestrian Type II barricade section as identified in the proposal or on the plans. Use temporary pedestrian Type II barricades to close non-motorized facilities including sidewalks, bicycle paths, pedestrian paths, and shared use paths that are not part of the roadway. One pedestrian Type II barricade is defined as a barricade section at least 43 inches wide, including all supports, ballast, and hardware.

**b. Materials.** Provide a temporary pedestrian Type II barricade that meets the requirements of *National Cooperative Highway Research Program Report 350 (NCHRP 350)* or *Manual for Assessing Safety Hardware (MASH)*, in addition to meeting the following requirements:

1. Provide barricade sections at least 43 inches wide, designed to interconnect to ensure a continuous *Americans with Disabilities Act (ADA)* compliant tactile barrier. Ensure the connection includes provisions to accommodate non-linear alignment as well as variations in elevation at the installation area.

2. Ensure the top surface of the barricade is designed to function as a hand-trailing edge, and has a height between 32 and 38 inches. Ensure the lower edge of the barricade is no more than 2 inches above the surface of the non-motorized facility. Ensure the top edge of the bottom rail of the barricade is a minimum of 8 inches above the surface of the non-motorized facility. The barricade may have a solid continuous face. Finally, all features on the front face of the barricade (the face in contact with pedestrians) must share a common vertical plane.

3. Equip both sides of the barricade with bands of alternating 6-inch wide orange and white vertical stripes of reflective sheeting. Two bands of sheeting 6 inches tall and a minimum of 36 inches long containing at least two orange and two white stripes each are required. One band placed near the top and one near the bottom if the barricade section has a solid face. If the barricade consists of two rails, affix one band of sheeting to each rail. Ensure the stripes of reflective sheeting are aligned vertically. Ensure this sheeting meets or exceeds the requirements of *ASTM D 4956* Type IV sheeting.

**c. Construction.** Construct the temporary pedestrian Type II barricade in accordance with the manufacturer's recommendations, Michigan Manual on Uniform Traffic Control Devices (MMUTCD), the plans, and the following requirements:

1. Install the barricade as shown on the plans and as directed by the Engineer. Interconnect all barricade sections using hinge components if necessary to ensure a continuous detectable edge for the entire installation. Ensure the barricade is ballasted according to the manufacturer's recommendations to ensure stability during wind events and contact with pedestrians.

2. When the barricade is installed near motor vehicle traffic, ensure reflective sheeting is visible to motorists.

3. When pedestrian Type II barricades are used to close a non-motorized facility, ensure a sufficient number of barricade sections are used to block the entire width of the facility. The barricade may extend outside the edge of the non-motorized facility but must not be less than the full width of the facility.

4. If sections of multiple colored barriers are used (i.e. safety orange and white) install the sections such that the colors alternate to increase conspicuity.

5. Ensure pedestrian Type II barricades are not used to close a motor vehicle facility. Ensure these barricades are not used to guide pedestrian traffic on a motor vehicle facility in the presence of active traffic. This prohibition includes bicycle/shared use lanes or shoulders in the presence of active traffic.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

**Pay Item**

**Pay Unit**

Pedestrian Type II Barricade, Temp .....Each

**Pedestrian Type II Barricade, Temp**, includes all labor, equipment, and materials to furnish, install, maintain, relocate, and remove one barricade section that is at least 43 inches wide. Additional payment will not be made if wider sections are provided. This includes all rails, supports, ballast, hinge points, reflective sheeting, and miscellaneous hardware needed to install and maintain a barricade section.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
TURF ESTABLISHMENT, PERFORMANCE

RSD:JLB

1 of 6

APPR:DMG:KJS:05-13-20

**a. Description.** For the work specified in this special provision paid for by the pay item Turf Establishment, Performance only, delete section 816 of the Standard Specifications for Construction and replace it with this special provision. The Contractor is responsible for the performance and quality of turf growth in the areas shown on the plans and as identified by the Engineer. Comply with all local, state and federal laws when completing this work.

Establish a durable, permanent, mature, perennial turf. The work consists of fundamental turf work, including but not limited to topsoiling, seeding, mulching, erosion control, maintenance, watering and repair of turf as described herein during the life of the contract and during the life of any supplemental performance bond which may ensue.

Choose and implement proven turf establishment industry practices; provide all necessary labor and equipment; select and provide all turf establishment materials; and control erosion and any subsequent sedimentation at all times.

Perform a site analysis, interpret the results and implement a turf establishment program to ensure compliance with this specification. The site analysis must take into consideration topsoil needs, fertilizer and pH requirements, seed mix, existing and future soil moisture levels, slopes and grades, required erosion control measures, maintenance requirements, local highway snow removal and deicing practices, and any other characteristics that influence and affect turf establishment.

Subsection 107.11 of the Standard Specifications for Construction is revised relative to the Contractor's responsibility for the repair of turf establishment work as follows. The Contractor is responsible, at no additional cost to the contract, for the repair of turf establishment work occasioned by storm events up to 3 inches of rain in a 24 hour period as documented by local meteorological data submitted to the Engineer for review and approval. All other portions of subsection 107.11 remain unchanged.

1. Contractor Turf Establishment Experience Requirements. Ensure weed control is done by a commercial herbicide applicator, licensed by the State of Michigan and certified by the Michigan Department of Agriculture & Rural Development (MDARD) in the appropriate category to apply herbicides. Use application procedures and materials in accordance with federal, state and local regulations. Use of restricted use chemicals is prohibited. Provide appropriate documentation and secure approval from the Engineer before application of herbicides.

At least 10 work days prior to the start of turf establishment, provide documentation to the Engineer, from the Contractor performing the turf establishment work, that they meet one or both of the following requirements.

A. At least one person employed by the Contractor performing the turf establishment work and assigned to the job site has a degree or certificate in Turf Management, Horticulture or related field.

B. At least one person employed by the Contractor performing the turf establishment work and assigned to the job site has at least 5 years of experience in roadside turf establishment.

**b. Materials.** Provide topsoil, seed, mulch, pesticide, herbicide, mulch blanket and any other unique erosion control materials as necessary to fulfill this specification, as shown on the plans. Use additional materials, as necessary, to meet the standards set forth for turf establishment in this special provision. The use of sod on the project requires the prior approval of the Engineer and if approved, may be used at limited site locations only.

Selection of all materials is the responsibility of the Contractor with the following minimum conditions.

1. **Soil.** Provide furnished or salvaged topsoil, which may be blended compost, that will support vigorous growth. Ensure topsoil is humus bearing and placed at least 4 inches deep. Ensure it is free of stones larger than 1/2 inch (2 inches on freeway projects) in diameter and other debris. Trim and grade the finished slope in accordance with subsection 205.03.N of the Standard Specifications for Construction.

2. **Seed.** Use a seeding mixture that is composed of four or more species of perennial grass. Use only species and their cultivars or varieties which are guaranteed hardy for Michigan.

Recommended species of perennial grasses include Kentucky Bluegrass, Perennial Ryegrass, Hard Fescue, Creeping Red Fescue, Chewings Fescue, Turf-type Tall Fescue, Buffalo grass, and Alkaligrass-Fulps Puccinellia distans. Select cultivars or varieties of grasses that are disease and insect resistant and of good color. Ensure that no one species in the mix is less than 5 percent, or more than 25 percent, of the mixture by weight. Do not select grass species considered noxious or objectionable, such as Quack Grass, Smooth Brome, Orchard Grass, Reed Canary Grass and others.

A. Ensure the seed is legally saleable in Michigan. Ensure the seed product does not contain more than 10 percent inert materials. Ensure the seed source is an MDOT approved certified vender.

B. Adapt the species and varieties of seed to the site conditions, to the site use, and to the soils, moisture and local climate. Site use may include, but is not limited to, detention pond, wildlife habitat, playground, wetlands, forested wetland, rural roadside, urban roadside and highly maintained front yard.

C. Ensure at least two of the species in the mixture proposed to be planted within 15 feet behind the curb or the shoulder are salt tolerant.

3. **Mulch.** Mulch seeded areas with the appropriate materials for the site conditions to promote germination and growth of seed and to mitigate soil erosion and sedimentation.

4. **Herbicides.** Comply with all federal, state and local laws. As part of the MDARD weed

control application, the Contractor is required to make proper notifications and postings in accordance with the label and MDARD requirements for all locations that will be sprayed. Notify the Engineer at least 48 hours prior to any applications being made. Furnish and apply herbicide(s) as needed. It is the Contractor's responsibility to select the herbicide(s) and the rate at which it is used. Obtain the Engineer's approval of work methods and herbicide(s) selected prior to the application of the herbicide(s). Complete a spray log and submit to the Engineer each day an application is made.

Do not draw water from any waterway (i.e. river, ditch, creek, lake etc.) located on state, county or municipal right-of-way, for mixing with herbicides.

5. **Fertilizers.** Furnish and apply fertilizer(s) as needed. It is the Contractor's responsibility to select the fertilizer(s) and the rate at which it is used. Phosphorus is allowed for use only at the time of planting and when required by soil conditions. Obtain the Engineer's approval of work methods and fertilizer(s) prior to the application of the fertilizer(s).

6. **Water.** Furnish and apply water from an approved source at a rate to promote healthy growth.

**c. Construction.** The Contractor is responsible for all work and all construction methods used in completing this work. Implementation of any part of the standard specifications or standard plans by the Contractor does not relieve the Contractor of responsibility for acceptability of the construction methods or for the quality of the work.

1. **Inspection of the Work.** The Contractor is responsible for all inspection of turf establishment work.

Use a Contractor's Daily Report, approved by the Engineer, to report inspections made and to document turf establishment work performed on this project. Complete and submit a Contractor's Daily Report to the Engineer when any work performed under this special provision is in progress.

Include all necessary materials documentation including tests slips, certifications, etc. with the associated Contractor's Daily Report.

The Engineer will determine the acceptability of the Contractor's Daily Report in terms of the completeness and accuracy. The Engineer reserves the right to verify all submitted measurements and computations. Failure by the Contractor to submit acceptable and timely reports to the Engineer may result in withholding of progress pay estimates on turf-related items until such time as reports are submitted and deemed acceptable.

The Engineer reserves the right to inspect the project for any reason in accordance with subsection 104.01 of the Standard Specifications for Construction, including the fulfillment of other inspection requirements such as Soil Erosion and Sedimentation Control, NPDES, etc. Inspections made by the Engineer do not relieve the Contractor of the responsibility for inspections required by this special provision or the Contractor's responsibilities for erosion control and turf establishment.

2. **Erosion Control.** Control erosion at all times in accordance with section 208 of the Standard Specifications for Construction. Control of soil erosion is the responsibility of the Contractor. However, ensure sedimentation controls are placed as shown on the plans or as

directed by the Engineer. Continuously monitor the site for needed erosion repair from any cause as addressed in the contract. Return all eroded areas to original grade as detailed in the contract.

Take immediate corrective action if sedimentation occurs in drainage structures or any watercourse or water containment area and stabilize all disturbed areas contributing to this sedimentation within 24 hours after the erosion occurrence. Remove sediment deposited as a result of the Contractor's inability to control the soil erosion at the Contractor's expense.

Reimburse the Department for any costs levied against the Department, such as fines, environmental costs, costs for remedies required, or any other costs as a result of the Contractor's failure to comply with this special provision and with federal, state and local laws.

3. Erosion Repair. The Contractor is responsible for all repairs and liable for all consequences (legal, monetary or other) associated with erosion or sedimentation damage to finished or unfinished work.

Report all erosion occurrences and the repairs made by the Contractor to the Engineer in the format and at the frequency required by the Engineer. Repair any erosion, displacement or disturbance to ongoing or completed work by any cause at no additional cost to the contract unless otherwise noted herein.

The Contractor is responsible and liable for all traffic control and safety measures required to repair and protect damaged turf areas. Repair any eroded area that may affect the support of the roadbed or safety of the public within 24 hours of the erosion occurrence.

Place protective devices such as barriers, directional signs/signals, temporary fence, or any other safety measures immediately after any erosion damage occurs that has the potential of endangering the public. In these instances, provide the Engineer with a written summary of the immediate action taken describing the repairs made and the safety measures taken, within 24 hours of the occurrence of the damage.

4. Mowing and Weeding. Maintain turf to a visually appealing level, and not more than 8 inches in height at any time, prior to acceptance. Weeds must be controlled to less than 10 percent of the turf establishment area at all times during construction.

5. Final Acceptance and Supplemental Performance Bond.

A. Final Acceptance Parameters. Ensure before final acceptance of the turf establishment work, all of the following minimum parameters are met throughout all exposed areas of the project designated on the plans or identified by the Engineer as turf establishment areas: there must be no exposed bare soil and the turf must be fully germinated, erosion free, weeds less than 10 percent, disease free, dark green in color and in a vigorous growing condition.

The Engineer will notify the Contractor of the dates and times of all acceptance inspections. The Contractor may accompany the Engineer during these inspections. If the Contractor does not agree with the decision made by the Engineer, the Contractor may request an inspection by a mutually agreed upon third party (Michigan State University Extension service or other). A joint inspection, to include the Engineer, the Contractor, and the third party, will be scheduled by the Engineer. Pay all expert fees and

expenses charged by the third party.

B. **Supplemental Performance Bond.** In the event that all contract items of work are completed, including the placement of all turf establishment items of work, and the final acceptance of the project is delayed because the final acceptance parameters for the turf establishment work have not been fully met; the Contractor may propose to the Engineer the use of a supplemental performance bond.

The bond serves to secure the successful completion of turf establishment work and fulfillment of all final acceptance parameters for the turf establishment work. Ensure the supplemental performance bond, in all respects, is satisfactory and acceptable to the Department and executed by a surety company authorized to do business with the State of Michigan.

Ensure the bond is in an amount equal to 50 percent of the turf establishment work items covered by this special provision. Ensure the bond remains in place for two growing seasons. At the discretion of the Engineer, the bond may be reduced on a prorated basis as portions of the areas designated for turf establishment on the project meet the final acceptance parameters.

Prior to commencement of any work necessary to meet the acceptance parameters during the bonded period, the Contractor must apply for a permit to work within the right-of-way through the MDOT Permit Gateway. The permit fee and an individual permit performance bond will not be required. The permit insurance requirements, however, will be required.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Turf Establishment, Performance .....	Square Yard

**Turf Establishment, Performance** includes installing, maintaining, inspecting, repairing and meeting the acceptance parameters for turf establishment specified in this special provision, including preparation, updating and submittal of the Contractor's Daily Reports.

Repairs made to damaged turf establishment areas as a result of a documented storm by local meteorological data resulting in rainfall amounts of more than 3 inches in a 24 hour period will be paid for as an increase to original quantities in accordance with subsection 109.05 of the Standard Specifications for Construction.

The following schedule of payment applies to work performed in accordance with this special provision. Upon completion of topsoil surfacing stage, 50 percent of the authorized amount for **Turf Establishment, Performance** will be paid to the Contractor. The remaining 50 percent of the authorized amount will be paid upon completion of all other work necessary to comply with this special provision and to meet all final acceptance parameters for **Turf Establishment, Performance** or at such time as the supplemental performance bond is accepted by the Department.

The supplemental performance bond and all costs associated with turf establishment work performed during the duration of the performance bond will not be paid for separately. These

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costs which may include, but are not limited to, mobilization, traffic control devices, and the required permit insurance are included in the unit price bid for **Turf Establishment, Performance.**



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PROGRESS SCHEDULE

CFS:JJG

1 of 1

APPR:MB:LFS:01-09-18  
FHWA:APPR:03-01-18

**Delete the definition for Progress Schedule in subsection 101.03, on page 12 of the Standard Specifications for Construction, in its entirety and replace with the following:**

**Progress Schedule.** A sequential listing of all the controlling operations and the estimated time the operations will remain controlling. The progress schedule is submitted by the Contractor after award and prior to starting work and is reviewed and approved by the Department. When approved, the progress schedule, or updated progress schedule, will become part of the contract.

**Delete subsection 102.14, on page 22 of the Standard Specifications for Construction, in its entirety.**

**Delete the first sentence in the second paragraph of subsection 108.05, on page 74 of the Standard Specifications for Construction, in its entirety and replace with the following.**

Submit a critical path method (CPM) schedule if required in the contract documents. Submittal of a progress schedule will not be required as the CPM schedule will replace the progress schedule.

**Add the following paragraphs directly below the first paragraph of subsection 108.05.A.1, on page 74 of the Standard Specifications for Construction.**

The progress schedule is to be submitted by the Contractor to the Engineer within 7 calendar days of award and prior to starting work.

The Engineer will provide documented approval, comments, or rejection within 7 calendar days of receipt of the Contractor's submittal, resubmittal, or responses.

The Contractor must resolve all responses within 7 calendar days of receipt of any Engineer requests or rejections.

If the progress schedule is not approved within 30 calendar days of contract award, the Engineer may withhold all or part of contract payments until the progress schedule is approved.

**Delete the last sentence in the first paragraph of subsection 108.05.A.2, on page 74 of the Standard Specifications for Construction in its entirety.**

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
CONTRACTOR PERFORMANCE EVALUATIONS

CFS:MB

1 of 2

APPR:JJG:DBP:06-07-17

FHWA:APPR:06-07-17

**a. Description.** Project management staff will evaluate the Contractor's performance on this project and the evaluation may be used as a basis for modifying the prequalification ratings of the Contractor. An evaluation may be issued during the course of a project (interim) and will be issued after completion of a project (final). The criteria used for the evaluation will be provided by the Engineer upon written request at the preconstruction meeting or found on the MDOT web site. Any action to modify the Contractor's prequalification ratings will be taken in accordance with the duly promulgated prequalification rules.

If an interim contractor performance evaluation is issued and regardless of whether the Contractor requests a meeting to discuss a Contractor Performance Evaluation, project management staff may require the Contractor to submit a performance improvement plan to address needs identified in the Contractor Performance Evaluation and to attend a meeting to discuss the improvement plan. After the meeting is held, the project management staff may approve the plan or require changes to the plan. Resubmit the plan if changes are required. Performance improvement plans must be implemented per the time frame in the plan as approved by the Engineer. If the Contractor does not implement the plan as approved, MDOT will consider the Contractor to be in non-compliance and will take action as described under section c of this special provision.

Within 21 days of the receipt of a Contractor Performance Evaluation, the Contractor may make a written request to meet with project management staff to review the evaluation. As a result of this meeting, the evaluation may be left unchanged or revised as deemed appropriate by the Engineer. The Engineer will then give the Contractor written notice with the final Contractor Performance Evaluation. If the meeting is not requested within the 21-day period, the original evaluation becomes the final and will not be subject to later contest or appeal.

**b. Appeals.**

1. **Appeal of Evaluation.** Within 14 days after the date a performance evaluation becomes final and is received by a Contractor, they may file a written appeal of any rating of seven or below to the Engineer. The written appeal must contain documentation supporting the Contractor's position that the rating is not warranted. The appeal will be considered by a Contractor Performance Evaluation Appeal Panel. If no appeal is filed within the 14-day period, the evaluation becomes final and will not be subject to later contest or appeal. Interim Contractor Performance Evaluations cannot be appealed.

2. **Appeal of Performance Improvement Plan.** Within 14 days after the date that a performance improvement plan is approved and sent to the Contractor, the Contractor may file a written appeal of that plan to the Engineer and request to appear before a Performance Evaluation Appeal Panel. Documentation must include the reasons for the appeal. If a timely

written appeal is not filed, the performance improvement plan becomes final and will not be subject to later contest or appeal.

An appeal filed by a Contractor will be considered by a Contractor Performance Evaluation Appeal Panel. The panel will be composed of three licensed professional Engineers from the Department (following the format of a Central Office Review Panel) who were not directly involved in the management of the project. This panel will review appeals on all Contractor Performance Evaluations for this project. The Contractor and the Engineer will be required to submit supporting documentation relevant to the appeal and will attend a formal appeal hearing. Upon concluding its review, the panel will confirm or modify the Contractor Performance Evaluation. The panel will, within 30 days, send the Contractor and Engineer written notice of its decision along with a copy of the modified Contractor Performance Evaluation if applicable. The original or modified Contractor Performance Evaluation is final and constitutes the Department's decision; it is not subject to further contest or appeal.

**c. Non-Compliance.** If a Contractor fails to honor a request by project management staff to submit a performance improvement plan or to meet to discuss it, or if a Contractor fails to carry out an approved performance improvement plan, that failure may be used as a basis for modifying the prequalification ratings of the Contractor. Any action to modify the Contractor's prequalification ratings will be taken in accordance with the duly promulgated prequalification rules.

**d. Subcontractors.** For purposes of this special provision, the word "Contractor" includes subcontractors. Project management staff will evaluate the performance of subcontractors in accordance with this special provision.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
ELECTRONIC TRANSMITTAL OF CONTRACT DOCUMENTS

CSD:JDM

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APPR:DAP:DBP:07-13-15

FHWA:APPR:07-16-15

**Delete the first sentence in subsection 102.15, on page 22 of the Standard Specifications for Construction, and replace with the following:**

The Department will provide the contract and bond forms electronically to the determined low Bidder, using ProjectWise. The low Bidder will receive notification of the documents availability from [MDOT-Awards@michigan.gov](mailto:MDOT-Awards@michigan.gov) at the e-mail address provided to the Department. The determined low Bidder will be responsible for printing the contract documents for return to the Department.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**LOW BID WITHDRAWAL PRIOR TO CONTRACT AWARD**

CSD:JDM

1 of 1

APPR:JJG:DBP:07-02-13  
FHWA:APPR:07-10-13

**Add the following sentence to the end of the last paragraph in subsection 102.17, on page 24 of the Standard Specifications for Construction:**

A determined low bidder whose bid is withdrawn prior to contract award cannot participate as a subcontractor, supplier, or trucker on the project.

**Add the following sentence to the end of the fifth paragraph in subsection 108.01, on page 72 of the Standard Specifications for Construction:**

The Contractor may not hire, a determined low bidder on a project who has withdrawn a bid prior to award, as a subcontractor, supplier, or trucker on the same project.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**DISADVANTAGED BUSINESS ENTERPRISES GOAL AT TIME OF BID**

CSD:LFS

1 of 2

APPR:CRR:DBP:11-01-19

APPR FHWA:11-04-19

**Add the following paragraph directly below the first paragraph of the subsection 102.15, on page 22 of the Standard Specifications for Construction.**

On projects with a DBE goal, the low bidder must submit MDOT Form 2653, the CONTRACTOR DBE COMMITMENT form, within 5 calendar days of the bid letting, regardless whether the Department has transmitted the contract and bond forms. If the Department does not receive the CONTRACTOR DBE COMMITMENT form within 5 calendar days of the bid letting, it may award the contract to the next low Bidder or otherwise exercise its discretion in accordance with subsection 102.13.

**Add the following paragraph directly below the first paragraph of the subsection 102.17, on page 23 of the Standard Specifications for Construction.**

On projects with a DBE goal, the low Bidder's failure to submit the overall DBE percentage with the bid or the low Bidder's failure to submit MDOT Form 2653, the CONTRACTOR DBE COMMITMENT form, within 5 calendar days of the bid letting as specified in subsection 102.18 may result in the payment of the bid guaranty to the awarding authority if the Bid Appeal Committee denies the appeal as outlined in subsections 102.11 and 102.12.

**Delete the second paragraph of subsection 102.18, on page 24 of the Standard Specifications for Construction in its entirety and replace with the following:**

All Bidders must provide the overall DBE percentage they have attained at time of bid within the DBE Goal folder of the Project Bids file on all projects with a DBE goal designation.

All Bidders, regardless of bid status (as checked, if available; or as submitted, if TBA), must submit MDOT Form 2653, the CONTRACTOR DBE COMMITMENT form, within 5 calendar days of the bid letting. This form must be submitted whether they have been able to meet DBE participation goal or not. Submit this information via e-mail to MDOT-DBESheets@michigan.gov.

A Bidder who fails to meet the submittal requirements for DBE participation will be deemed ineligible for award of the contract.

A Bidder who fails to satisfy the DBE participation goal criteria will be deemed ineligible for award of the contract subject to the provisions of subsection 102.18.A.

**Delete subsection 102.18.A, on page 25 of the Standard Specifications for Construction in its entirety and replace with the following:**

If a low Bidder is unable to meet the DBE participation goal, additional information relating to MDOT Form 2653, the CONTRACTOR DBE COMMITMENT form, will be required. That additional information will be submitted in accordance with the current Department DBE Program Procedures. The contract will not be awarded until a determination is made by the Department.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
JOINT/TWO-PARTY CHECKS

CSD:LFS

1 of 1

APPR:JJG:DBP:06-23-16

FHWA:APPR:06-23-16

**a. Description.** This special provision establishes the requirements for parties desiring a joint/two-party check arrangement.

**b. Requirements.** Parties desiring a joint/two-party check arrangement must submit an *Application to Use Joint Checks* (MDOT Form 0183) to the Department as described on Form 0183. An acceptable joint check arrangement must include the following:

1. Prime contractor/payor cannot require the subcontractor to use a specific supplier or the prime contractor's negotiated price;
2. Subcontractor is more than an extra party in releasing the check to the material supplier;
3. Subcontractor negotiates the quantities, price and delivery of materials;
4. Prime contractor/payor issuing the check acts solely as guarantor;
5. Subcontractor releases the check to the supplier;
6. Only a short term arrangement (no more than two seasons) with the purpose being establishment of or increase of subcontractor's credit line with the material supplier; and
7. Subcontractor is responsible to both furnish and install the material/work item.

Copies of cancelled joint checks issued from the prime/payor to a Disadvantaged Business Enterprise (DBE) and supplier must be submitted by mail, fax, or e-mail to the MDOT Office of Business Development upon request.

**c. Measurement and Payment.** Joint/Two-Party Checks arrangements will not be paid for separately, but will be included in costs for other pay items.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
DISSEMINATION OF PUBLIC RELATIONS INFORMATION

CSD:JDM

1 of 1

APPR:JAT:DBP:07-01-14

FHWA:APPR:07-08-14

**a. Description.** This special provision establishes the requirements for dissemination of any public relations communications and/or products intended for an external audience pertaining to this contract. Dissemination must not be made without prior written approval from the Department, Office of Communications, and then only in accordance with explicit instructions by the Department. This includes the use of the Michigan Department of Transportation (MDOT) logo.

A violation of this provision may be considered a default of contract and the Department may exercise its rights in accordance with subsection 108.11 of the Standard Specifications for Construction.

**b. Public Relations Information.** Examples of communications and/or products may include, but are not limited to: brochures, flyers, invitations, programs, postings on social media sites or web sites, new or updated video, digital versatile disk (DVD) productions, or video sharing productions, exhibits, presentations, or any other printed materials intended for an external audience.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
DEBRIS OR MATERIALS IN TRAFFIC LANES

CFS:BRZ

1 of 1

APPR:EMB:DAJ:01-10-08

FHWA:APPR:06-01-11

**Delete Subsection 104.07.B.2 on page 36 of the Standard Specifications for Construction, in its entirety and replace it with the following:**

2. **Construction Safety Program.** Before beginning work on the project, the Contractor must submit a written "Construction Safety Program" that outlines the plan and procedures for preventing and mitigating accidents and fires on the project and meeting all health and safety requirements of the contract. Also in the program include provisions for meeting the requirements of subsection 812.03 and details for the materials and equipment that will be used to prevent construction related debris or materials from entering the open lanes of traffic and what actions, including traffic control measures, will be taken to immediately and safely remove the debris or material from the roadway. The Contractor must meet with the Engineer to discuss the "Construction Safety Program" and to develop mutual understandings to govern the administration and enforcement of the program.

**Replace the second sentence in the first paragraph of Subsection 104.07.C.3 on page 37 of the Standard Specifications for Construction with the following:**

The Contractor is responsible, at the Contractor's expense, to provide the necessary materials and equipment to prevent construction related debris or materials from entering the open lanes of traffic. This includes protection of traffic controls, removal of spilled materials or debris from the roadbed or drainage courses, and repair of damaged facilities necessary for public travel and safety.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
HIGH VISIBILITY CLOTHING

SSA:JDG

1 of 1

APPR:MWB:CRB:05-25-18  
FHWA:APPR:06-01-18

**Add the following, to the end, of subsection 104.07.B, Safety and Health Requirements, on page 36 of the Standard Specification for Construction:**

4. **Worker Visibility.** All workers must wear high-visibility safety apparel as specified in the MMUTCD.

Costs incurred to comply with this requirement will be the responsibility of the Contractor.

**Revise the second paragraph of subsection 812.03.G.8, on page 619 of the Standard Specification for Construction to read:**

Equip traffic regulators with the following:

- a. High-visibility safety apparel as specified in the MMUTCD;
- b. "Stop/Slow" or "Stop/Stop" sign paddles; and
- c. A two-way radio system and a standby back-up system, if traffic regulators are not visible to each other.

**Delete the subsection 922.11.B, on page 944 of the Standard Specification for Construction in its entirety and replace with the following:**

**B. Traffic Regulator's High-Visibility Safety Apparel.** Traffic regulators must wear high-visibility safety apparel as specified in the MMUTCD.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
VALUE ENGINEERING CHANGE PROPOSAL

CFS:MB

1 of 4

APPR:CJB:DBP:05-31-18

FHWA:APPR:06-14-18

**a. Description.** A Value Engineering Change Proposal (VECP) modifying plans, specifications, or other contract requirements may be submitted for this project if the proposed change results in reduced construction cost, a higher quality product, improved safety, or a shorter contract time. The estimated cost savings must be quantifiable in relation to the contract cost. No work can begin before written authorization. The proposed change must not alter the essential functions or characteristics of the project or significantly delay the completion of the project. A VECP or conceptual VECP will only be considered after project award. Essential functions and characteristics include, but are not limited to, service life, operating costs, ease of maintenance, desired appearance, impact on utilities and right of way, mobility and safety of the motorist, bicyclist and pedestrian; design standards, and safety standards. This specification does not restrict the Contractor from proposing improvements to the project that may not result in net cost savings. A conceptual VECP stating the basic concept and approximate cost savings may be submitted for preliminary consideration.

**b. Submittal of Conceptual VECP.** Submit a Conceptual Proposal for the preliminary evaluation. Upon review by the Engineer, one of the following actions will be taken:

- Conceptual approval and a request for the Contractor to submit a VECP.
- Request for additional information.
- Denial of the VECP.

Preliminary review of a conceptual proposal reduces the Contractor risk of subsequent denial and does not commit the Department to eventual approval. Submit the following information for each Conceptual VECP using the Value Engineering Change Proposal Form (Form # 1962) marked Conceptual VECP.

1. A description of the difference between the existing pay items and the proposed changes, and expected benefits.
2. A set of conceptual plans and a description of proposed changes to the pay items.
3. An estimate of the anticipated cost savings or increase.
4. A date by which the Department must make a decision to avoid delays to the existing contract and obtain the cost savings. Also include information on the amount of time necessary to develop the full proposal and impacts to the progress schedule.
5. If impacting maintenance of traffic provisions, identify proposed changes and impacts to the Special Provision for Maintaining Traffic.

After approval of Conceptual VECP, the Contractor must follow section c of this special provision for the Final VECP.

**c. Submittal of Final VECP.** Submit the following information for each VECP using Value Engineering Change Proposal Form (Form # 1962) marked Final VECP.

1. A description of the difference between the existing contract and the proposed change, and the advantages and disadvantages of each, including effects on service life, operating costs, ease of maintenance, desired appearance, impact on utilities and right of way, mobility and safety of the motorist, bicyclist and pedestrian; design standards, and safety standards.
2. A complete set of plans, if necessary, and specifications showing the revisions relative to the original contract. This portion of the submittal must include design notes and construction details. If the proposal has plans, these must be signed and sealed by the Contractor's Professional Engineer licensed in the State of Michigan.
3. All costs and proposed unit prices must be documented by the Contractor and must include a cost comparison summarizing all the items the VECP replaces, reduces, eliminates, adds, or otherwise changes from the original contract on a spreadsheet.
4. A date by which the Department must make a decision to avoid delays to the existing contract and to obtain the proposed cost savings.
5. If impacting maintenance of traffic provisions, identify proposed changes and impacts to the Special Provision for Maintaining Traffic. If the submitted revisions to the maintaining traffic provision are approved and require any corrections, the Contractor is responsible for all additional costs related to corrective measures.
6. A statement detailing the affect the proposal will have on the time for completing the contract and impacts to the critical path and progress schedule.
7. A description of any known uses or testing of the proposed changes and the conditions and the results.
8. If the VECP submittal includes pay items associated with a warranty, include the latest version of the warranty specification.

**d. Evaluation.** By submitting the VECP, the Contractor agrees not to hold the Department liable for its decision or for any delays to the work attributable to the VECP. Decisions on VECP's are not subject to appeal. Work on the project will continue in accordance with the requirements of the contract until a work order is issued which incorporates the VECP changes. The Department has final authority of the acceptability of a VECP and of the estimated net savings attributable to the adoption of all or any part of the VECP. If, in the judgment of the Engineer, contract prices do not represent a fair measure of the value of work to be performed or to be deleted, the Engineer will use other means to determine the estimated net savings.

The Department may modify a VECP, with the concurrence of the Contractor, in order to make it acceptable. The Contractor's share of the savings will be based on the modified VECP.

If the VECP is accepted, in whole or in part, the written acceptance will be issued by a work order and followed with a contract modification. The work order and contract modification will include

the necessary changes in the plans and specifications and any conditions upon which the approval is based. Acceptance of the VECP will not extend the time of contract completion unless specifically provided for in the work order and contract modification.

A VECP will be evaluated in accordance with the following:

1. The Engineer will determine if a VECP qualifies for consideration and evaluation. The Engineer may deny any VECP that requires excessive time or costs for review, evaluation or investigation. The Engineer may deny any VECP that is not consistent with the Department's design policies and criteria for the project.

2. The Department will not accept a VECP that is similar to a change in the plans or specifications under consideration by the Department for the project at the time the proposal is submitted; nor will the Department accept a proposal based upon, or similar to, standard specifications, general use special provisions or standard drawings adopted by the Department after the advertisement for the contract. The Department reserves the right to make such changes without compensation to the Contractor under the provisions of subsection 103.02 of the Standard Specifications for Construction.

3. The Contractor will have no claim against the Department for additional costs or delays resulting from denial or untimely acceptance of a VECP. These costs include but are not limited to: development costs, loss of anticipated profits, increased material or labor costs, or untimely response.

4. A VECP will be denied if equivalent options are already provided in the contract.

5. A saving resulting solely from the elimination or reduction in quantity of a contract pay item will not be considered as a VECP. A saving resulting from the elimination or reduction in quantity of a pay item specified as part of a VECP may be considered.

6. In calculating the value of cost savings, the Department has the right to disregard the Contract bid prices, if such prices do not represent the value of the work to be performed or to be deleted, and has the right to calculate the savings based on reasonable cost for such work.

7. A VECP cannot be used to alter incentive and disincentive rates and maximum payments on A + B and/or lane rental projects.

8. A VECP will be denied if the design consultant for the contractor is also the design consultant for the Department or other apparent conflicts of interest exist.

9. A VECP may be denied if it was rejected as a Value Engineering alternative during the development phase.

**e. Time Frame for VECP Evaluation.** The Contractor will be notified of the Department's decision to approve or deny a conceptual or final VECP within 14 calendar days of receipt of the VECP. If a written acceptance has not been received within this time frame, and the date has not been extended by mutual agreement of both parties, the VECP is denied. The Department's decision is final and there is no appeal.

**f. Future Use of VECP.** The Department reserves the right to use all or any part of a VECP on other contracts without obligation or compensation to the Contractor. If the VECP is accepted, the Department may use or disclose any information necessary to incorporate the VECP on future projects.

**g. Payment for Work under the VECP.** The Engineer may reject all or any portion of work performed under an approved VECP if results are unsatisfactory. The Engineer will direct the removal of rejected work and construction will proceed under the original contract requirements. There will be no payment for work performed under the proposal, or for its removal.

No work related to a VECP will be performed under force account. Agreed prices must be reached for any new or modified contract pay items related to the VECP before the VECP is approved.

The changes will be incorporated into the Contract by changes in quantities of unit bid items, new agreed unit price items, lump sum or any combination, as appropriate, under the Contract. Unless there is a differing site condition as described in subsection 103.02 of the Standard Specifications for Construction, the Contractor will not receive additional compensation for quantity overruns, design errors, supplemental surveys, geotechnical investigations, additional items or other increases in cost that were not foreseen in the accepted VECP, unless otherwise approved by the Engineer.

The work order and authorization will include the price for performing all affected items of work and the estimated net savings in the cost of performing the work directly attributable to the VECP. VECP payments only involve direct savings or costs. Indirect savings or costs (time, user delay, contract delay, etc) are not included in VECP payment calculations. The calculations of VECP payments are independent from the payments or penalties for contract time related issues. The Contractor will be paid 50 percent of this net savings based on as constructed or plan quantities whichever is in the best interests of the Department. The amount specified in the work order and authorization constitutes full compensation to the Contractor for the VECP and the performance of that work.

$(\text{Cost of Deleted Work}) - (\text{Cost of Added Work}) = \text{Net Savings}$

$\text{Payment} = (\text{Net Savings})/2$

Note: Approved VECP's will be paid using the pay item code "1200000", item description of "Value Engineering" and a unique secondary descriptor differentiating each VECP with the pay unit of "Dollar" for the contract modification.

The Contractor's development costs for the proposed VECP, including all costs associated with design, are not reimbursable.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**CONSTRUCTION DOCUMENT MANAGEMENT**

CFS:RJC

1 of 3

APPR:JJG:LFS:06-14-19

FHWA:APPR:06-26-19

**a. Description.** This work consists of providing all materials, labor, and equipment necessary to meet MDOT's construction document management (CDM) system requirements. Submit all project documentation for this contract in electronic format and place it in MDOT's CDM system, unless otherwise noted in this special provision. No paper documents, in printed format (faxes, letters, etc.) are permitted except as allowed by this special provision or specifically approved by the Engineer. The Contractor is responsible for keeping all information in the CDM system up to date throughout the execution of the contract.

**b. Digitally Encrypted Electronic Signatures.** All documents that require Contractor or subcontractor signatures or signed authorizations by the Contractor or subcontractor must be signed using an MDOT issued digitally encrypted electronic signature. The MDOT approved digital signature tool is the Docusign Signature Appliance. Digital signatures and software are provided by MDOT at no cost. Instructions on how to acquire and use MDOT's digitally encrypted electronic signature can be obtained at the following website. The website also provides support for users.

[www.michigan.gov/MDOT-esign](http://www.michigan.gov/MDOT-esign)

Scanned signatures, retail point of sale scribble capture, cursive fonts or other non-conforming signatures are not permitted in lieu of digitally encrypted electronic signatures.

All fillable forms must retain the ability to be fillable upon submission to the Engineer. Submitted documents are not to be locked (preventing further changes to the form) when placing a digitally encrypted signature. Docusign Signature Appliance tracks all changes to a document after placing a digital signature (track changes) and this information is embedded into the document as part of the digital signature signing process. Locked documents do not allow additional processing (information entry) by the Engineer and all locked documents will be returned to the Contractor for resubmission.

Failure to submit documents utilizing the MDOT digitally encrypted electronic signature process (Docusign Signature Appliance) will result in the documents being rejected by the Engineer and returned to the Contractor. No payment will be made for any affected work items until all required documents are received with validated digitally encrypted signatures.

**c. Contractor Access to MDOT's Construction Document Management System (ProjectWise).** The Contractor must use MDOT's current CDM system (ProjectWise). ProjectWise access is available at no cost to all contractors, suppliers and other vendors associated with the project. ProjectWise access is granted in two ways, a web based access portal or full version of the software installed on a company's computer. User account setup, installation details, and access to ProjectWise may be requested by sending an e-mail request to:



MDOT-ProjectWiseConst@michigan.gov

**d. Contractor Authorized Requestors.** Designate two authorized requestors at the preconstruction meeting. The authorized requestors are:

1. The only individuals that can request the Engineer to provide or withdraw ProjectWise access for this contract.
2. Responsible to designate contract roles in ProjectWise (submitter or read only).
3. Responsible for promptly notifying the Engineer of any ProjectWise user access changes for this contract.

**e. Training.** Additional documentation and training for CDM system processes, details of scheduled classes, and methods for requesting training are available at the following website:

<https://mdotjboss.state.mi.us/SpecProv/projectwisesupport.htm>

**f. Technical Issue Resolution.** Upon discovery of a ProjectWise access issue immediately notify the Engineer with a copy sent to the following e-mail resource:

MDOT-ProjectWiseConst@michigan.gov.

**g. Document Format and Naming Standards.** The Engineer may reject documents that are deemed to be unsuitable. This includes documents submitted that are named incorrectly, illegible, unreadable, locked, etc. Re-submit any corrected documents via ProjectWise. Failure to address rejected documents may delay progress payments.

Use the document naming conventions as documented by the Department and maintained on the Department's website:

[https://www.michigan.gov/documents/mdot/MDOT\\_Contractor\\_Standard\\_Naming\\_Conventions\\_for\\_Document\\_Submittals\\_653665\\_7.pdf](https://www.michigan.gov/documents/mdot/MDOT_Contractor_Standard_Naming_Conventions_for_Document_Submittals_653665_7.pdf)

**h. Document Workflows.** Electronic review/approval of documents will be accomplished through ProjectWise workflows and e-mail notifications. A workflow is an ordered group of milestones, or states, through which a document passes on its way to completion.

Documents placed in the ProjectWise Contractor In-Box folders will initially have a state of "Pending." Once the Contractor has finalized the document, change the state from "Pending" to "Submitted."

Complete the following actions:

1. Upload all documents into the corresponding Contractor In-Box folder.
  - A. Ensure all documents are named correctly per the document naming conventions.
2. Select the "Change State" option and then select "Next" to submit the document.

3. When the email message appears please send to the Engineer, or their approved representative, providing notification that there are new documents submitted.

The Engineer will review all documents added to these folders and move them to the appropriate document folder for further review, processing, or records storage.

Furnish paper bills of lading/delivery tickets to the Engineer on the jobsite for any material that is paid based on weight or shipping volume, unless utilizing a Department approved e-ticketing process. Scanning of other manifests, seed tickets, or delivery confirmations will be as directed by the Engineer.

**i. File/Document Retention.** The electronic files stored in ProjectWise are the official project documentation and will be retained per the Department's document retention schedule.

**j. Measurement and Payment.** The work included in this special provision will not be paid for separately and is considered to be included in other items of work.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**SOURCE OF STEEL AND IRON (BUY AMERICA)**

CFS:JJG

1 of 3

APPR:MB:DBP:05-01-18

FHWA:APPR:05-01-18

**Delete subsection 105.10, on page 53 of the 2012 Standard Specifications for Construction, in its entirety and replace with the following:**

**105.10. Source of Steel and Iron.** Provide steel and iron materials and products for permanent incorporation into the work that were produced only in the United States per Title 23 of the Code of Federal Regulations (CFR) Section 635.410, Buy America Requirements.

All steel and iron products and manufacturing processes of the steel and iron material in a product, including but not limited to the following steps; smelting, melting, rolling, extruding, machining, bending, grinding, drilling, welding, galvanizing, and coating, must occur within the United States.

Examples of products that are subject to Buy America coverage include, but are not limited to, the following:

- A. Steel or iron products used in pavements, bridges, tunnels or other structures, which include, but are not limited to, the following: fabricated structural steel, reinforcing steel, piling, high strength bolts, anchor bolts, dowel bars, permanently incorporated sheet piling, bridge bearings, cable wire/strand, pre-stressing/post-tensioning wire, motor/machinery brakes and other equipment for moveable structures.
- B. Guardrail, guardrail posts, end sections, terminals, cable guardrail.
- C. Steel fencing material, fence posts.
- D. Steel or iron pipe, conduit, grates, manhole covers, risers.
- E. Mast arms, poles, standards, trusses, supporting structural members for signs, luminaires, or traffic control systems.
- F. Steel or iron components of precast concrete products, such as reinforcing steel, wire mesh and pre-stressing or post-tensioning strands or cables.

Provide step certification for all steel and iron related pay items, materials, products, and components as specified on the Department website. The Department will maintain a list of these pay items, materials, products, and/or components on the following website.

[http://www.michigan.gov/mdot/0,1607,7-151-9622\\_11044\\_11367---,00.html](http://www.michigan.gov/mdot/0,1607,7-151-9622_11044_11367---,00.html)

Step certification is defined as the certification by the respective manufacturer or fabricator for their specific process (step) that the product, material, or component was fabricated, manufactured, and/or processed in the United States. The step certification documentation for these pre-defined pay items, materials, products, and/or components is to be submitted to the Engineer in a package covering each step prior to delivery or concurrent with material delivery on-site. Approved certification is required prior to incorporation of the materials into the project.

Buy America certification documentation for products and materials designated as fully compliant with the Buy America requirements on the Qualified Products List (QPL), Approved Manufacturers, and Tested Stock Suppliers Lists will be maintained by the MDOT Construction Field Services (CFS) Division. Buy America certification for these fully compliant items does not need to be submitted by the Contractor, but a bill of lading, product label, or shipping record to document that the products are from the respective source is to be provided to the Engineer. Buy America certification documentation for items that are partially compliant will be required to be submitted prior to delivery or concurrent with material delivery and prior to incorporation, noting the value of foreign steel/iron. The use of the Department maintained Buy America lists and notations does not relieve the Contractor from responsibility of ensuring Buy America compliance. The Contractor is ultimately responsible for Buy America compliance.

The Buy America lists maintained by the Department are solely for the benefit of the Department and may not be relied upon by the Contractor. The Contractor is solely responsible for the Buy America requirements for steel and iron as set forth in the CFR.

The above requirements do not preclude a minimal use of foreign steel and iron, provided the total invoice cost of foreign material permanently incorporated into the project does not exceed 0.1 percent of the total contract amount or \$2,500 whichever is greater. The Department defines the total invoice cost as the total value of the foreign steel and iron materials delivered to the project. The Department defines the total contract amount to be the total of the contract unit prices for items of road work and bridge work, any adjustments as provided for in the contract, and any assessment of incentive, disincentive or liquidated damages as provided for in the contract.

MDOT/Consultant fabrication facility inspectors are not responsible for approving the incorporation of foreign steel/iron prior to fabrication. It is the responsibility of the fabricator to notify and coordinate with the Contractor for all potential inclusion of foreign steel/iron in fabricated products.

For each item subject to meeting Buy America requirements, that doesn't fully meet Buy America requirements, the following documentation must be provided by the Contractor to verify the foreign steel value. This documentation is to be placed in the project files to ensure that the threshold is not exceeded:

- Pay Item,
- Description of associated foreign steel/iron material, product, or component,
- Cost of associated foreign steel/iron material, product or component, and
- Cumulative list of all non-compliant Buy America items with the total dollar amount.

The minimal use of foreign steel/iron under the minimal usage amount will be approved by the Engineer. The use of foreign steel/iron under the minimal usage amount does not

CFS:JJG

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12SP-105A-09

05-01-18

need to be approved by the FHWA. This amount is not considered a waiver to the Buy America requirements. The Contractor must ensure that the minimal usage amount is not exceeded.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**TEMPORARY TRAFFIC CONTROL MATERIALS**

OFS:RAL

1 of 1

APPR:CRB:JFS:11-21-16

FHWA:APPR:11-22-16

**Add the following subsection to subsection 105.01.B, on page 48 of the Standard Specifications for Construction:**

1. Temporary traffic control materials that are covered in the Materials Quality Assurance Procedures Manual, section 4.10 *Temporary Traffic Control Certification and Acceptance Procedure*, are not required to be listed in the *Materials Source List*.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
CONSTRUCTION STAGING AREAS

DES:LFS

1 of 1

APPR:JJG:KAS:10-06-11

FHWA:APPR:10-11-11

**Add the following subsection to section 107, on page 70 of the 2012 Standard Specifications for Construction:**

**107.22 Construction Staging Areas.** The contractor must not use any public recreation area as a staging area, marshalling yard, storage facility, or for any other construction support unless it is defined in the contract.

Public recreation areas include: parks, trails, game areas, wildlife and waterfowl refuges, playgrounds, golf courses, athletic fields or similar areas which are publically owned by public school districts, local, state, or federal governments.

Any agreements negotiated between the Contractor and the owner of the public recreation area, before or after the award of the contract will not be considered valid by the Department.

If the Engineer determines the Contractor is in non-compliance with this subsection, penalties up to and including termination of the contract, in accordance with subsection 108.12, may be enacted as well as the immediate restoration of the public recreation area at the Contractor's cost.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
E-VERIFY

CSD:JDM

1 of 1

APPR:JJG:JC:10-24-12  
FHWA:APPR:10-25-12

**a. Description.** E-Verify is an Internet-based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of that employee to work in the United States. There is no charge to employers to use E-Verify. The E-Verify system is operated by the Department of Homeland Security (DHS) in partnership with the Social Security Administration. E-Verify is available in Spanish.

The State of Michigan is requiring all Contractors, and Subcontractors, to verify that new employees are legally present and authorized to work in the United States, using the E-Verify System.

Information on registration for and use of the E-Verify program can be obtained via the Internet at the DHS Web site: <http://www.dhs.gov/E-Verify>.

It is the responsibility of the Contractor to include this specification in all tiers of subcontracts.

Verification of the Contractors' use of E-verify will be a part of the random review of subcontract information performed by Contract Services Division.

The required use of the E-Verify system will not be paid for separately as part of the contract but is considered included in the costs for other pay items in the contract.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
LABOR COMPLIANCE

CFS:AS

1 of 3

APPR:JJG:RJC:06-27-18

FHWA:APPR:06-28-18

**a. Description.** Ensure all levels of contracting (prime, sub, sub-sub, etc.) comply with all labor compliance requirements in this contract. The Contractor is responsible for subcontractors and lower tier subcontractor labor compliance. Job site poster requirements apply to state and federally funded projects. All Contractors must insert this special provision in each subcontract and further require its inclusion in lower tier subcontracts for federal prevailing wage projects.

**b. Requirements.**

1. **Jobsite Posters.** All jobsite posters and employment notices required by State and Federal regulations and the contract documents are to be posted on the jobsite in a conspicuous area prior to the commencement of work. Ensure jobsite postings are accessible at all times.

2. **Federal Prevailing Wage Projects.** The Davis-Bacon Related Acts apply to all Contractors, and subcontractors (all tiers) performing work on federally funded or assisted construction contracts where the total construction contract price is in excess of \$2,000. Contractors and subcontractors are required to comply with *29 Code of Federal Regulations Parts 1, 3, and 5*.

The Contractor must advise subcontractors of the requirement to pay the prevailing wage rates prior to commencement of work and that all employees must cooperate during wage rate interviews.

A. **Certified Payroll Submittal Requirements.** Contractors (all tiers) must submit their certified payrolls to the prime Contractor. The submitted payrolls must accurately and completely include all information required on MDOT Form CP-347, Certified Payroll. The required weekly payroll information may be submitted on a contractor generated form but must contain all information required on Form CP-347. The first certified payroll is to be received by the Engineer within 3 weeks from the week ending in which work is performed. The 3 week period is to allow for the processing and review of the certified payrolls by the prime Contractor. The review must ensure the certified payroll is complete and contains all information required on Form CP-347. Form CP-347 is available on the MDOT forms webpage. Certified payroll information must meet the requirements of this special provision unless the contract requires payroll to be submitted through the prevailing wage and labor compliance (PWLC) system. Payroll submitted via the PWLC system must be entered into the system, certified, and approved by the prime Contractor to be considered received by the Department.

Labor compliance issues must be resolved within 60 calendar days of receiving the Departments first documented notice. The 60-day requirement may be extended based

on documented mutual agreement between the Department and the Contractor.

(1) **Fringe Benefit Statements.** Contractors making payments or incurring cost to provide bona fide benefits must submit an hourly breakdown of fringe benefits paid each worker, or work classification where applicable, that must accompany the first certified payroll where fringe benefits are credited towards the prevailing wage. The Contractor must update these documents as necessary to ensure they are current throughout the working life of the contract. Failure to submit or maintain the required fringe benefit statement will constitute a payroll deficiency.

(2) **Delinquent Payroll.** Certified payrolls not submitted per subsection b.2.A of this special provision will be considered delinquent.

(3) **Deficient Payroll.** Certified payrolls that are found to be incomplete, inaccurate, or inconsistent with other project records are considered deficient.

(4) **Non-compliance Damages.** A Contractor found to be in non-compliance with the requirements of this special provision will be assessed non-compliance damages listed in Table 1, proportional to the value of their work on the contract (including subcontract, purchase order (P.O.) or invoice amount).

**Table 1: Schedule of Non-Compliance Damages**

Contract/Subcontract/P.O./Invoice Amount (a)	Non-compliance damages per calendar day
\$0 to 49,999	\$200
50,000 to 99,999	400
100,000 to 499,999	600
500,000 to 999,999	900
1,000,000 to 1,999,999	1,300
2,000,000 to 4,999,999	1,550
5,000,000 to 9,999,999	2,650
10,000,000 and above	3,000
Trucker	\$200
a. "Contract" amount if offending contractor is the prime contractor. "Subcontract/P.O./Invoice" amount if offending contractor is a subcontractor/vendor.	

**B. Record Keeping.** Maintain payrolls and basic records relating thereto (i.e. employee names, occupation, hours worked, W2, canceled checks, bank statements, etc.) by all levels of contractors during the course of work and retain for a 3-year period from the date of final estimate for all employees working on the site of work. Make these records available for inspection, copying, or transcription by the Department or its representative.

**C. Short Duration Projects.** The following modifications apply if the project is less than 75 calendar days in duration.

(1) **Submittal Requirements.** On short duration projects the first certified payroll is

to be received by the Engineer within 2 weeks from the week ending in which work is performed. The 2-week period is to allow for the processing and review of the certified payrolls by the Contractor. The 2-week period allows the first estimate to be paid assuming the Contractor will submit certified payrolls in a timely manner. Ensure subsequent certified payroll submissions are made weekly. Payroll submissions failing to meet the above requirements will be considered delinquent.

Labor compliance issues are to be resolved within 30 days after receiving the Department's first documented notice. The 30-day requirement may be extended based on documented mutual agreement between the Department and the Contractor.

**c. Materials.** None specified.

**d. Construction.** None specified.

**e. Measurement and Payment.** Payment for compliance with this special provision will not be made separately. Payment will be considered as part of all other contract pay items.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
OPEN TO TRAFFIC

CFS:JJG

1 of 1

APPR:MB:DBP:07-07-17  
FHWA:APPR:07-10-17

**Delete subsection 107.21, on page 69 of the Standard Specifications for Construction, in its entirety and replace with the following:**

**107.21. Open to Traffic.** The Contractor must not open the project or sections thereof to traffic until approved by the Engineer. Whenever the project or section thereof is in a condition suitable for traffic, the Engineer will determine if it is approved for traffic before project completion and the Contractor must open the project or section thereof to traffic as directed by the Engineer. To determine whether the project or section thereof is approved for traffic, the Engineer will verify that the surfacing material, shoulders, guardrails, signs, and other appurtenances are completed as required by the contract. The Engineer's approval of the project or section thereof for traffic does not constitute partial or final acceptance of the project or any part of it, or a waiver of any provision of the contract. The Contractor is not responsible for the costs of maintaining the section of the project opened for traffic.

If the Engineer approves the entire project or any section of it for traffic and the Contractor opens it to traffic before final acceptance and final payment, the Contractor must perform the remainder of the work in a manner that causes the least obstruction to traffic. The Contractor must make provisions for the safety of traffic as required by the contract. Legal weight restrictions, established by 1949 PA 300 as amended, local ordinances, or legal posting, apply to sections of the project opened to traffic.

Before the seasonal suspension, the Engineer will determine the work the Contractor must complete to bring the project to an acceptable condition for traffic and winter maintenance, including necessary traffic and erosion control measures. Until the Contractor completes this work, the Engineer will not designate the project as approved for traffic. On sections of the project opened to traffic, the Contractor must correct damage due to defective materials, to faulty workmanship, to operations of the Contractor, and to natural causes (except as provided in subsection 107.11 of the Standard Specifications for Construction), at no additional cost to the Department.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
STORAGE OF MATERIALS ON, UNDER OR ADJACENT TO BRIDGES AND  
STRUCTURES

BRG:BMW

1 of 1

APPR:MRB:HLZ:01-09-19  
FHWA:APPR:01-10-19

**Add subsection 107.15C.3, on page 67 of the Standard Specifications for Construction:**

3. **Storage of Materials on or under Bridges and Structures.** The Contractor must not store equipment or materials with the following USDOT Material Class Designations under, or within 50 feet of Department or Local Agency owned bridges and structures:
- a. Class 1 - Explosives;
  - b. Class 2 - Flammable Gas, Non-Flammable Gas, Inhalation Hazard, Oxygen;
  - c. Class 3 - Flammable Liquids - Flammable, Fuel Oil, Combustible, Gasoline;
  - d. Class 4 - Flammable Solids, Spontaneously Combustible and Dangerous When Wet;
  - e. Class 5 - Oxidizer and Organic Peroxide;
  - f. Class 6 - Toxic (Poisonous), Inhalation Hazard and Infectious Substances;
  - g. Class 7 - Radioactive;
  - h. Class 8 - Corrosive; and
  - i. Class 9 - Miscellaneous.

The Contractor must not store plastic, polyethylene, or other petroleum-based products, or other flammable or combustible materials under, or within 50 feet of bridges and structures owned by the Department or Local Agencies.

Staging and storage of construction equipment utilizing these materials will be allowed on the bridge decks, as it relates to the Contractor's active construction operations.

The Engineer will approve appropriate protective measures for fueling and maintenance of equipment on bridge decks.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**ON-THE-JOB TRAINING PROGRAM**

OBD:TDB

1 of 1

APPR:DBP:GCT:06-19-15  
FHWA:APPR:07-06-15

**a. Description.** The On-The-Job Training (OJT) program is the MDOT's program to meet the requirements of the Federal-Aid Highway Act of 1970 and 23 CFR (Code of Federal Regulations) Part 230, Subpart A. The objective is to develop skill improvement programs to provide opportunities for unskilled workers, particularly minorities, women, and disadvantaged persons, to acquire training in the skilled construction trades.

**b. Trainee Assignment.** MDOT's Office of Business Development will allocate training assignments to prequalified Contractors based on the past contract volume of federal-aid work performed with MDOT. MDOT will notify each Contractor who has met the volume of work threshold at the beginning of each calendar year and advise them of the number of trainees they are expected to support.

**c. Program Requirements.** Contractors found to have reached the level(s), as identified in the MDOT OJT program document, are required to fulfill all of the requirements of the OJT program at no additional cost to the Department.

The Contractors are required to pay the trainees in accordance with the following schedule unless apprentices or trainees in an approved union program are enrolled as trainees on this project. In that case, the appropriate rates approved through the union apprenticeship will apply.

- 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period
- 75 percent for the third quarter of the training period
- 90 percent for the last quarter of the training period
- Full fringe benefits will be paid during the entire training period

All applicable forms and the appropriate regulation pertaining to the OJT program are available through the MDOT's On-the-Job Training Program website at [www.michigan.gov/ojt](http://www.michigan.gov/ojt).

Contractors should notify the Engineer at the preconstruction meeting if they intend to utilize trainees on the project.

**d. Non-Compliance.** Failure to comply with the OJT program provisions or complete a training assignment may result in the Contractor being found in non-compliance. Failure to resolve the non-compliance may be used as a basis for modifying the prequalification ratings of the Contractor. Any action to modify the Contractor's prequalification ratings will be taken in accordance with the duly promulgated prequalification rules.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**SCHEDULE OF LIQUIDATED DAMAGES FOR OVERSIGHT**

CFS:BED

1 of 1

APPR:MB:JJG: 07-15-16

FHWA:APPR:07-29-16

**Delete Table 108-1 in subsection 108.10.C.1, on page 83 of the Standard Specifications for Construction, in its entirety and replace with the following.**

<b>Table 108-1</b>		
<b>Schedule of Liquidated Damages for Oversight</b>		
<b>Original Contract Amount</b>		<b>Amount per Calendar Day, \$</b>
<b>From more than, \$</b>	<b>To and including, \$</b>	
0	100,000	400
100,000	500,000	700
500,000	1,000,000	950
1,000,000	5,000,000	1,350
5,000,000	15,000,000	2,300
Over 15,000,000		3,900

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
SUBCONTRACTING OF CONTRACT WORK

CFS:JJG

1 of 1

APPR:KAS:CRR:04-02-20  
FHWA:APPR:04-07-20

**Delete the first sentence of the second paragraph of subsection 108.01, on page 71 of the Standard Specifications for Construction, in its entirety and replace it with the following:**

The Contractor must use its own organization to perform work amounting to at least 35 percent of the original contract amount.

**Delete the last sentence of the second paragraph of subsection 108.01, on page 71 of the Standard Specifications for Construction, in its entirety and replace it with the following:**

The 65 percent available for subcontracting must include work identified in the contract as designated classifications and all other work, except specialty classifications.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PROMPT PAYMENT

CFS:JJG

1 of 4

APPR:JDM:DBP:06-29-15  
FHWA:APPR:07-16-15

**Add the following subsection to section 109, on page 106, of the Standard Specifications for Construction:**

**109.08 Prompt Payment.**

**A. Definitions.**

**Lower-tier subcontract.** An agreement between a subcontractor of any tier and any individual or legal entity to perform a part of the subcontract work.

**Lower-tier subcontractor.** The individual or legal entity that performs part of the subcontract work through a lower-tier subcontract with a subcontractor.

**Supplier.** The individual or legal entity that agrees to provide materials or services to the prime Contractor, a subcontractor, or a lower-tier subcontractor for the performance of their contract work.

**Sworn Statement.** A written verification under oath reflecting all persons or entities, which have furnished labor, equipment, services or materials to a subcontractor or lower-tier subcontractor for performance of work on the project. The written verification includes union fringe benefit funds, original contract amount, current amount due, amounts paid to date and balance to finish the work for each person or entity.

**Waiver of Lien.** A written release and waiver of any claim or right to payment for payments actually received for labor, equipment, services or materials furnished for performance of work on the project.

The sworn statement and waiver of lien documents are used by the prime Contractor and its subcontractors for verifying payments made to lower-tier subcontractors/suppliers and are not to be submitted to the Engineer unless requested as an aid in determining an alleged prompt payment violation. These documents can be found at the following website under the Construction Field Services - Forms heading:

[http://www.michigan.gov/mdot/0,1607,7-151-9622\\_11044\\_11367---,00.html](http://www.michigan.gov/mdot/0,1607,7-151-9622_11044_11367---,00.html)

**B. Progress Payments.** For the first payment, or for a one time payment, the prime Contractor agrees to pay each subcontractor for the work associated with their subcontract no later than 10 calendar days from the date the prime Contractor receives payment from the Department.

For the second and subsequent payments, the prime Contractor agrees to pay each

subcontractor for the work associated with their subcontract no later than 10 calendar days from the date the prime Contractor receives payment from the Department.

The Contractor is required to provide payment information for previous payments made to all first tier subcontractors and all DBE companies (sub-subcontractors, suppliers, truckers, etc.) at any tier before the Engineer will release the third and subsequent estimates. For all subsequent progress pay estimates if 1) the Engineer payment does not include any first tier subcontractors or any DBE company payments at any tier, and 2) the previously submitted payment reporting information remains unchanged, then payment reporting in the system is not required. Reporting is required when the prime contractor makes payments to any first tier subcontractors and any DBE companies at any tier. The payment information is provided through submittal of the information via the 2124A reporting system (MERS). System information can be found at the following web link.

[http://www.michigan.gov/documents/mdot/Prompt\\_Payment\\_2124A\\_Instructions\\_MERS\\_366314\\_7.pdf](http://www.michigan.gov/documents/mdot/Prompt_Payment_2124A_Instructions_MERS_366314_7.pdf)

The prime Contractor must bring any concerns about the satisfactory completion of subcontractor or lower-tier subcontractor work items, to the Engineer's attention as soon as the concern is discovered. If the work meets the requirements of satisfactory completion and the prime Contractor has been paid for that work, the Engineer must determine whether:

1. The prime Contractor has demonstrated a valid reason for withholding payment from the subcontractor or supplier, or
2. The subcontractor has demonstrated a valid reason for withholding payment from the lower-tier subcontractor or supplier.

If the Engineer determines the reason for withholding payment is valid, the Engineer will process a negative estimate to withdraw the amount involved in the complaint. If payment has not been made for the work related to the complaint, the Engineer will not include those items of work on an estimate until the issue has been resolved.

The prime Contractor remains responsible to make prompt payments on this project to their subcontractors and suppliers except as noted in subsection 109.08.D of this special provision, even if the prime Contractor is in violation of other contractual obligations and the Department is withholding payment from the prime Contractor for those violations.

The prime Contractor must include language in all subcontracts that the Department prohibits prime Contractors from holding retainage from subcontractors. All provisions of this prompt payment subsection apply to all subcontracts, lower-tier subcontracts, and supplier agreements and must be included in each subcontract for the contract, including all lower-tier subcontracts and agreements.

This prompt payment provision is a requirement of 49 CFR 26.29 and does not confer third-party beneficiary rights or other direct rights to a subcontractor against the Department. This provision applies to both DBE and non-DBE subcontractors/suppliers at all tiers.

**C. Satisfactory Completion.** Progress and partial payments for contract work are issued based on the satisfactory completion of work. Satisfactory completion, for purposes of this prompt payment provision, is defined as:

1. Upon preliminary review, the Engineer finds the work completed in accordance with the contract, plans, and specifications; and,
2. Required documentation, including material certifications, payrolls, submission of 2124A, etc., has been received and reviewed and found to be acceptable by the Engineer; and,
3. Required subcontractor sworn statements and waivers of lien have been provided to the prime Contractor. The prime Contractor must provide notice to the Engineer if sworn statements and waivers of lien have not been received for completed work.

The Engineer will determine if the work meets the standards of satisfactory completion.

**D. Less than full payment release.** The Engineer may give written approval to:

1. Delay or postpone payment from the time frames specified herein,
2. Process partial payment from the prime Contractor to a subcontractor or supplier,
3. Process partial payment from a subcontractor to a lower-tier subcontractor or supplier.

The unpaid portion will be held by the Department.

The parties may initiate whatever dispute resolution procedure is specified in their agreement or is available under Michigan law. If dispute resolution or litigation is selected, the actions by both parties must proceed in a timely manner. The result of the dispute resolution proceeding or litigation must be provided to the Engineer promptly upon the conclusion of the proceeding. The Engineer will release the disputed payment being held by the Department in accordance with the outcome of the proceedings.

**E. Non-Payment Claims.** The prime Contractor, subcontractor, lower-tier subcontractor or supplier must notify the alleged offending party in writing of any prompt payment violations within 30 calendar days of the date the payment was to be received. Copies of the notifications must be provided to the Engineer and the prime Contractor (only if the prime Contractor is not the offending party).

The alleged offending party must respond in writing to the claimant within 10 calendar days of receipt of the notification of failure to meet prompt payment provisions. Provide copies of the response to the Engineer, the prime Contractor (only if the prime Contractor is not the offending party), and the Engineer of Construction Field Services. The prime Contractor, subcontractor, or supplier must also provide the required sworn statements and waivers of lien from the affected subcontractor or supplier to the Engineer within 10 days of receipt of the notification. The Department will consider the failure of the alleged offending party to respond to the notification from the claimant as an admission of the prompt pay violation which may result in sanctions.

The Engineer will review the written notice and response and will verify in writing if there is a valid prompt pay violation.

Independent of all procedures and requirements in this special provision the non-payment claimant has the additional option of submitting a lien claim to the MDOT Contract Services Division. MDOT will notify the project surety of the non-payment issue. It is the responsibility of

the surety to ensure that all legitimately due payments are made. The submission of a lien claim will not nullify or affect any other requirements, obligations or procedures in this special provision.

**F. Remedies.** When the Engineer verifies a prompt payment violation, the prime Contractor within 5 days must propose one or a combination of any of the following actions items for review and approval by the Engineer:

1. Issue payment to the subcontractor.
2. Issue payments to a subcontractor in the form of joint checks to the subcontractor and the subcontractor's lower-tier subcontractors and/or suppliers.
3. Issue payment directly to the subcontractor's lower-tier subcontractors or suppliers.
4. Request a negative estimate to withdraw the amount confirmed in the prompt payment violation.

If the prime Contractor fails to submit a timely remedy request or obtain an approved course of action within the 5 day time period, the Engineer will direct a course of action or issue a negative estimate to withdraw the amount confirmed in the prompt payment violation.

If the prime Contractor fails to fulfill the approved or directed course of action the Engineer will impose sanctions until such time as the approved or directed course of action is completed.

Any payments to a subcontractor's lower-tier subcontractor or supplier will be issued in the amounts reflected upon the subcontractor's sworn statements or in amounts independently verified by the Engineer as being due the subcontractor's lower-tier subcontractors and suppliers for work completed. Payments to a lower-tier subcontractor or supplier will be considered payment to the subcontractor directly so that payment for the same work cannot be claimed.

Any other use of joint checks must follow current Department procedures.

**G. Sanctions.** Failure to comply with any of the prompt payment requirements by the prime Contractor, subcontractor, lower-tier subcontractor, or supplier may result in sanctions against the offending party. These sanctions may include, but are not limited to: withholding of estimates on projects where prompt payment violations are confirmed; reduction or removal of prequalification; and/or suspension of bidding privileges.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**FORCE ACCOUNT BUSINESS TAXES**

CFS:RJC

1 of 1

APPR:JJG:JDM:04-14-15

FHWA:APPR:04-17-15

**Delete subsection 109.05.D.8, on page 101 of the 2012 Standard Specifications for Construction in its entirety.**

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**FORCE ACCOUNT MARK-UP FOR BOND PREMIUM, INSURANCE AND PAYROLL  
TAXES**

CFS:JJG

1 of 1

APPR:LFS:MB:08-12-16

FHWA:APPR:08-18-16

**Delete subsection 109.05.D.4, on page 97 of the Standard Specifications for Construction, in its entirety.**

**Delete the first paragraph of subsection 109.05.D.3, on page 96 of the Standard Specifications for Construction, in its entirety and replace with the following:**

3. **Labor.** The Engineer will pay the Contractor an amount equal to the sum of the following labor costs, plus 55 percent of the sum (for road work) or 60 percent of the sum (for bridge work) to cover the costs of field and home office overhead, bond premium, insurance, payroll taxes and to provide for a reasonable profit.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
DELAY COSTS

CFS:JJG

1 of 1

APPR:RJC:MB:02-22-17

FHWA:APPR:02-27-17

**Delete subsections 109.05.E.1.a through 109.05.E.1.e, on page 102 of the Standard Specifications for Construction, in their entirety and replace with the following:**

- a. Proof of cost of project staff salaries, wages, payroll taxes and insurance.
- b. Proof of escalated cost for labor, equipment, and material.
- c. Proof of material storage costs.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
DELIVERED AND STOCKPILED MATERIALS

CFS:JJG

1 of 1

APPR:MRB:LFS:05-07-20  
FHWA:APPR:05-15-20

**Delete subsection 109.04.B.2, on page 93 of the Standard Specifications for Construction, in its entirety and replace it with the following:**

2. The Contractor presents a copy of proof of payment, authenticated by the supplier, or a copy of the supplier invoice related to the stockpiled material to the Engineer. When a copy of the supplier invoice is provided, the Contractor must furnish the paid invoice within 10 days after receiving payment from the Engineer. However, if the prime Contractor is the supplier, producer, or fabricator, the Engineer will base the payment on proven production cost; and

**Delete the first sentence of the third paragraph of subsection 109.04.B, on page 93 of the Standard Specifications for Construction, in its entirety and replace it with the following:**

The Engineer will base the payment for delivered or stockpiled materials on amounts paid to, or invoiced by, the supplier for the materials.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**JOB SITE POSTER DEFICIENCIES AND INITIAL MOBILIZATION PAYMENT**

CFS:JJG

1 of 1

APPR:AS:RJC:05-27-16

FHWA:APPR:06-07-16

**Delete the subsection 150.03, on page 107 of the Standard Specifications for Construction, in its entity and replace with the following:**

**150.03. Construction.** All jobsite posters and employment notices required by State and Federal regulations and the contract documents are to be posted as instructed in the Special Provision for Labor Compliance.

If at any time during the project the Engineer documents that the required jobsite posters and employment notices are not posted appropriately, the Engineer will provide documented instructions to the Contractor that corrective action is required. Posting of jobsite posters and employment notices (posted display, foreman vehicle binder, etc.) for short term or mobile operations will be as approved by the Engineer. Upon receipt of the notification of corrective action, the Contractor has 24 hours to correct the deficiency. If the issue cannot be corrected within the 24 hour time period, the Contractor will develop a documented implementation schedule for the corrective action and submit the schedule to the Engineer for approval within 24 hours of receiving the original documented notification. If the schedule is not approved, or if the schedule is approved, but is not followed, the Engineer will adjust the contract according to this special provision. If the implementation schedule is not followed, the Engineer will document notification to the Contractor that they are in violation of this special provision.

The Engineer will give documented notification to the Contractor as identified above. Failure to make corrections within the timeframe required will result in the following actions by the Engineer:

- A. The Engineer may stop work on the project until the Contractor completes corrective action.
- B. The Engineer will process a contract price adjustment in the amount of \$1,000 per calendar day or portion thereof that the corrective action remains incomplete or the implementation schedule is not followed. The contract price adjustment will continue to be assessed until jobsite posters and employment notices are posted appropriately, the Engineer has been notified of the corrective action and the Engineer has verified the correction.

**Add the following paragraph after the third paragraph of subsection 150.04, on page 108 of the Standard Specifications for Construction:**

The first scheduled payment for **Mobilization, Max (dollar)** will not occur until the Engineer has verified and documented the posting of required labor compliance posters and the project specific prevailing wage rates.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
NON-HAZARDOUS CONTAMINATED MATERIAL HANDLING AND DISPOSAL

ENV:JCW

1 of 2

APPR:DMG:DBP:06-13-17  
FHWA:APPR:06-13-17

**a. Description.** This work consists of all labor, equipment, and materials necessary to handle, transport, dispose of non-hazardous contaminated material, including all laboratory testing required for the proper disposal of the material and site restoration of temporary storage locations. This special provision must not be employed without authorization by the Engineer. The laboratory testing will be used to solicit landfill approval and is not intended to determine whether or not the material is contaminated. Soil delineated on the plans and classified as non-hazardous contaminated cannot be used elsewhere on the project regardless of the laboratory test results unless otherwise directed by the Engineer.

**b. Materials.** None specified.

**c. Construction.** Complete this work in accordance with sections 204 and 205 of the Standard Specifications for Construction, except as modified herein or as directed by the Engineer.

1. **Excavation of Non-hazardous Contaminated Material.** Excavate non-hazardous contaminated material as shown on the plans or as directed by the Engineer.

2. **Temporary Storage of Non-hazardous Contaminated Material.** Place excavated non-hazardous contaminated material which is to be temporarily stockpiled on plastic sheeting or tarps having a minimum thickness of 6 mils or in trucks, roll off boxes, or other containers, such that no liquid may escape from the containment. Cover the non-hazardous contaminated material securely with plastic sheeting of 6 mils thickness or greater at the end of each work day.

Dispose of excavated non-hazardous contaminated material as soon as approval is received from the disposal site. This material cannot be stockpiled for longer than 30 days prior to disposal.

Restore temporary storage locations to the condition prior to conducting the work.

3. **Sampling and Analysis of Non-hazardous Contaminated Material.** Sample and analyze non-hazardous contaminated material prior to disposal. The analysis required is dictated by the Type II disposal facility to be utilized for disposal. Should the results of the analysis show the material to be hazardous waste, as defined by the 1994 PA 451, Part 111, of the Natural Resources and Environmental Protection Act, the Engineer must be notified immediately. The material must then be disposed of as directed by the Engineer.

4. **Disposal of Non-hazardous Contaminated Material.** Dispose of non-hazardous contaminated material at a licensed Type II sanitary landfill. Submit at the preconstruction

meeting the name of the Type II landfill to be used for disposal, the sampling and analysis requirements of that landfill, and verification that use of the proposed landfill will meet the requirements of the county solid waste plan.

Ensure the proposed landfill is acceptable to the Department and approval is obtained from the Engineer prior to commencing disposal operations. Provide a copy of the laboratory analysis to the Engineer as a requirement of approval for disposal. Following disposal and prior to approval for payment provide to the Engineer landfill receipts for all non-hazardous contaminated material disposed of.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price for the following pay item:

Pay Item	Pay Unit
Non Haz Contaminated Material Handling and Disposal, LM.....	Cubic Yard

**Non Haz Contaminated Material Handling and Disposal, LM** will be measured by volume in cubic yards, LM. Provide to the Engineer receipts from the disposal facility for the number of cubic yards disposed of at that facility prior to payment. Payment will include all costs for materials, labor and equipment needed for storage, loading, transportation, testing, restoration of temporary storage locations and disposal of the non-hazardous contaminated material. Disposal costs will include all documentation required by the landfill.

Payment for excavation of non-hazardous contaminated material will be included with the related items of work.

Delays in testing and disposal of non-hazardous contaminated material that are not the fault of the Contractor may be considered valid reasons for extension of time. However, these delays and the resultant extensions of time will not be considered valid reasons for additional payment.

Should the analysis of the material document that it is hazardous waste, then payment for disposal of hazardous waste will be measured and paid for as extra work. Disposal includes hauling by a licensed hazardous waste hauler and disposal at an appropriate licensed disposal facility. Prequalification is waived.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**NON-COMPLIANCE WITH SOIL EROSION AND SEDIMENTATION CONTROL  
REQUIREMENTS**

CFS:DMG

1 of 2

APPR:TWK:HZ:06-13-17  
FHWA:APPR:06-13-17

**a. Description.** This special provision establishes negative adjustments related to the failure to properly install and maintain soil erosion and sedimentation control (SESC) measures and the conditions under which these adjustments will be determined and applied. Nothing in this special provision modifies section 107 of the Standard Specifications for Construction.

Delays to the project as a result of the Contractor conducting corrective actions for SESC measures do not constitute a valid reason for an extension of time.

Ensure deficiencies with SESC measures are corrected in the time frame stated herein. For those deficiencies not corrected within the stated time frame, the Engineer will make a negative adjustment to the contract as stated herein.

**b. Materials.** None specified.

**c. Construction.** Install all temporary erosion control measures identified on the plans and as directed by the Engineer for an impacted area of the project prior to the start of any earth disturbance including, but not limited to, clearing, grading and excavation in that area. The Engineer will inspect these measures every 7 days and within 24 hours after a precipitation event that results in a discharge from the site. Deficiencies will be documented on the National Pollutant Discharge Elimination System and SESC Inspection Report (MDOT Form 1126).

If at any time during the project, including the time during the seasonal suspension, the Engineer documents deficient SESC measures, the Engineer will provide written notification with instructions for corrective action to the Contractor. The time frame for completion of these corrective actions will be specified in the notification and will be discussed with the Contractor as necessary.

Deficiencies are defined as one or more of the following:

1. Failure to install or construct SESC measures shown on the plans or as directed by the Engineer;
2. Failure to maintain the measures;
3. Failure to conduct earth change activities in a manner consistent with all applicable environmental permit requirements;
4. Failure to comply with the area limitations or the time limitations stated in subsections 208.03.A and 208.03.B, respectively, of the Standard Specifications for Construction.

SESC deficiencies are either emergency or non-emergency and the time frame for corrective action is determined accordingly. Sediment leaving the right-of-way or entering a drainage structure, waters of the state, or loss of support of the roadbed impacting public safety constitutes an emergency and corrective actions must be completed within 24 hours of notification, including weekends or holidays regardless of whether the Contractor is working or not. Non-emergency deficiencies must be corrected within 5 calendar days of notification.

For those emergency corrective actions not completed within 24 hours of notification, the Contractor will be assessed \$100.00 per hour for every hour the deficiency remains uncorrected after the initial 24 hours of notification. For those non-emergency corrective actions not completed within 5 calendar days, the Contractor will be assessed \$500.00 per day for every day, or part thereof, the deficiency remains uncorrected after the initial 5 days of notification.

If it is not practicable to complete the non-emergency corrective actions within 5 calendar days, the Contractor must document the reasons and propose a corrective action plan to the Engineer within 5 days of notification. The corrective action plan must contain the Contractor's course of action and a time frame for completion. If the reasons and the corrective action plan are acceptable to the Engineer, the Contractor will be allowed to proceed with the plan as proposed without incurring a negative adjustment. If the approved corrective action plan is not completed as proposed, the Contractor will be assessed \$1000.00 per calendar day for every day, or part thereof, the deficiency remains uncorrected after the time frame is exceeded in the approved corrective action plan.

Correct, in the timeframe stated herein, all other emergency or non-emergency SESC deficiencies documented anywhere else on the project during completion of the approved corrective action plan.

**d. Measurement and Payment.** The Engineer will make the necessary monetary adjustment to the contract amount based on the length of time the Contractor allows the deficiencies to remain uncorrected after the time allowance stated herein and as described to cover any costs incurred by the Department as a result of SESC violations.

All costs associated with corrective actions required due to the Contractor's failure to properly install or maintain SESC measures on this project will be borne by the Contractor.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**EROSION CONTROL, INLET PROTECTION, FABRIC DROP**

CFS:DMG

1 of 2

APPR:TWK:CP:03-22-18

FHWA:APPR:03-29-18

**a. Description.** This work consists of furnishing and installing acceptable alternatives to inlet protection devices (devices) listed in the *Soil Erosion and Sedimentation Control Manual* when the pay item Erosion Control, Inlet Protection, Fabric Drop is included in the contract.

This work consists of providing all labor, equipment and materials necessary to furnish, install, maintain, dispose of collected material and remove devices at the locations shown on the plans or as directed by the Engineer.

**b. Materials.** The following devices are approved for use as acceptable alternatives:

1. Siltsack Type B, Regular Flow, by ACF Environmental, Inc.
2. Inlet Pro Sediment Bag, Standard Flow, with optional foam deflector by Hanes Geo Components.
3. Dandy Curb Bag, Dandy Bag, Dandy Curb Sack, Dandy Sack, or Dandy Pop by Dandy Products, Inc.
4. Basin Bag, Regular Flow by CSI Geoturf.
5. Flexstorm Catch-It and Flexstorm Pure used with filter bag types FX, FX+, FXO, PC, PC+ or IL.

Ensure provided devices are sized appropriately for the drainage structures in which they will be installed.

**c. Construction.** Install, maintain and remove the devices according to the manufacturer's guidelines. Remove material collected by the devices according to the manufacturer's guidelines or as directed by the Engineer.

Dispose of collected material in accordance with subsection 205.03.P of the Standard Specifications for Construction. Those devices that are no longer needed and have been removed may be reused elsewhere on the project as approved by the Engineer.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Erosion Control, Inlet Protection, Fabric Drop.....	Each

Erosion Control, Inlet Protection, Fabric Drop will be paid for as one each for each time the alternate device listed herein is installed, maintained, and removed at a separate location within the project limits.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
AGGREGATE BASE COURSE

CFS:JAR

1 of 1

APPR:JAR:ACR:06-26-03

FHWA:APPR:04-19-11

**a. Description.** This provision modifies the layer thickness requirements for placing and compacting aggregate base course. Delete the 6-inch maximum layer restriction in section 302 of the Standard Specifications for Construction and replace with the following:

Construct a test strip at the start of base work. Compact all layers to a uniform depth of not more than 10 inches (+3/4 inch). If the total plan base thickness exceeds 10 inches, construct the base in layers of equal thickness. Secure the Engineer's approval for the method of placement and compaction before continuing.

If the accepted method is subsequently modified, the Engineer may require another test strip to confirm compliance with the specification. The Engineer may remove a portion of a layer when conducting density testing to assure the compaction requirements are being met full-depth.

**b. Measurement and Payment.** All additional costs associated with constructing aggregate base course according to this special provision will be included in the related Aggregate Base pay item.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**WRAPPING CULVERT AND STORM SEWER JOINTS**

CFS:DMG

1 of 1

APPR:TRK:DBP:05-31-18

FHWA:APPR:05-31-18

**Delete the last two sentences in the first paragraph of subsection 401.03.C, on page 185 of the Standard Specifications for Construction, and replace with the following:**

Wrap all culvert pipe joints with geotextile blanket regardless of size and material type. The geotextile blanket must be at least 36 inches wide and installed on the pipe exterior, centered on the joint. The ends of the geotextile blanket must overlap by at least 12 inches.

**Delete the last two sentences in the first paragraph of subsection 402.03.C, on page 195 of the Standard Specifications for Construction, and replace with the following:**

Wrap all sewer pipe joints with geotextile blanket regardless of size and material type. The geotextile blanket must be at least 36 inches wide and installed on the pipe exterior, centered on the joint. The ends of the geotextile blanket must overlap by at least 12 inches.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
CULVERT AND SEWER BEDDING AND BACKFILL

BRG:TRK

1 of 2

APPR:JJG:DMG:09-21-15  
FHWA:APPR:10-05-15

**Delete subsection 401.03.A, on page 185 of the Standard Specifications for Construction, in its entirety and replace with the following:**

**A. Excavation and Culvert Bedding.** Excavate in accordance with subsection 206.03.A. Construct pipe culvert bedding using granular material Class IIIA. Bedding must be placed at least 4 inches thick and uncompacted for the entire length of the culvert. Where rock or hardpan is encountered, excavate the trench to at least 6 inches below the proposed bottom of the pipe; place bedding using uncompacted granular material Class IIIA.

Where unstable soil conditions, or obstructions other than rock, require excavation of the trench below the elevation detailed on the plans; undercut, backfill, and compact the trench as directed by the Engineer. Use 6A, 17A, or 34R aggregate as backfill material for undercutting due to unstable soil conditions. Use 34R aggregate for bedding material in lieu of granular material Class IIIA. Place the backfill up to approximately 4 inches below the proposed bottom of the pipe. This work will be paid for as trench undercut and backfill according to subsection 402.04.E.

**Delete subsection 401.03.D, on page 187 of the Standard Specifications for Construction, in its entirety and replace with the following:**

**D. Backfilling.** Backfill culverts, within the limits of the roadbed, with granular material Class II, III, or IIIA. Place backfill in layers no greater than 10 inches thick and compact each layer to at least 95 percent of the maximum unit weight.

Backfill culvert downspouts, culverts, or portions of culvert outside the limits of the roadbed with granular or suitable material as detailed on the plans. Compact thoroughly as directed by the Engineer. Maintain at least 3 feet of cover, unless trimming for final grade.

Backfill smooth lined CPE and CPV with granular material Class IIIA to at least 1 foot above the pipe and as shown on the plans. The Engineer may allow the use of Class II, Class III or suitable material as backfill above this elevation. Place the backfill in layers no greater than 10 inches. Place the backfill equally on opposite sides of the pipe at the same time.

Stake, or use other methods to maintain the line and grade of the culvert during the backfilling operation.

**Delete the last sentence of the second paragraph of subsection 402.03.A, on page 195 of the Standard Specifications for Construction, and replace with the following:**

Place bedding using uncompacted granular material Class IIIA to the required elevation.

**Delete the third paragraph of subsection 402.03.A, on page 195 of the Standard Specifications for Construction, and replace with the following:**

Where unstable soil conditions, or obstructions other than rock, require excavation of the trench below the elevation detailed on the plans; undercut, backfill, and compact the trench as directed by the Engineer. Use 6A, 17A, or 34R aggregate as backfill material for undercutting due to unstable soil conditions. Use 34R aggregate for bedding material in lieu of granular material Class IIIA. Place the backfill up to approximately 4 inches below the proposed bottom of the pipe. This work will be paid for as trench undercut and backfill according to subsection 402.04.E.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**SAMPLING ASPHALT BINDER ON LOCAL AGENCY PROJECTS**

CFS:MF

1 of 1

APPR:JAR:JTL:12-19-01  
FHWA:CON. APPR:06-06-11

For informational purposes, original samples of asphalt binder will be taken by the Contractor and delivered to the Engineer prior to incorporation into the mixture. The frequency of sampling will be determined by the Engineer. The cost of obtaining and delivering the samples to the Engineer will be included in the hot mix asphalt (HMA) pay items.

The Contractor must certify in writing that the materials used in the HMA mixture are from the same source as the materials used in developing the HMA mixture design and the bond coat is from an approved supplier as stated in the *Material Quality Assurance Procedures Manual*.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**RECYCLED HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS**

CFS:KPK

1 of 2

APPR:JWB:CJB:03-13-14

FHWA:APPR:03-13-14

**Add the following subsection to subsection 501.02.A.2, on page 234 of the Standard Specifications for Construction.**

- c. **Reclaimed Asphalt Pavement (RAP) and Binder Grade Selection.** The method for determining the binder grade in HMA mixtures incorporating RAP is divided into three categories designated Tier 1, Tier 2 and Tier 3. Each tier has a range of percentages that represent the contribution of the RAP binder toward the total binder, by weight. The tiers identified below apply to HMA mixtures with the following exception: Superpave mixture types E3, E3 High Stress, E10, E10 High Stress, E30, E30 High Stress, E50, and E50 High Stress used as leveling or top course must be limited to a maximum of 27 percent RAP binder by weight of the total binder in the mixture.

Recycled materials may be used as a substitute for a portion of the new materials required to produce HMA mixtures in accordance with contract.

- **Tier 1 (0% to 17% RAP binder by weight of the total binder in the mixture).** No binder grade adjustment is made to compensate for the stiffness of the asphalt binder in RAP.
- **Tier 2 (18% to 27% RAP binder by weight of the total binder in the mixture).** For all mixtures no binder grade change will occur in Tier 2 for all shoulder and temporary road mixtures.

The required asphalt binder grade must be at least one grade lower for the low temperature than the design binder grade required for the specified project mixture type. Lowering the high temperature of the binder one grade is optional. For example, if the design binder grade for the mixture type is PG 58-22, the required grade for the binder in the HMA mixture containing RAP would be a PG 52-28 or a PG 58-28.

For Marshall Mixes, no binder grade change will be required when Average Daily Traffic (ADT) is above 7000 or Commercial Average Daily Traffic (CADT) is above 700. No binder grade change will occur for LVSP, E03 and E1 mixtures used as leveling or top course.

The asphalt binder grade can also be selected using a blending chart for high and low temperatures. Supply the blending chart and the RAP test data used in determining the binder selection according to *AASHTO M 323*.

- **Tier 3 ( $\geq 28\%$  RAP binder by weight of the total binder in the mixture).** The binder

grade for the asphalt binder is selected using a blending chart for high and low temperatures per *AASHTO M 323*. Supply the blending chart and the RAP test data used in determining the binder selection.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS**

CFS:KPK

1 of 7

APPR:CJB:JWB:07-05-16

FHWA:APPR:07-05-16

**a. Description.** This special provision provides sampling and testing requirements for local agency projects using the roller method and the nuclear density gauge testing. Provide the hot mix asphalt (HMA) mixture in accordance with the requirements of the standard specifications, except where modified herein.

**b. Materials.** Provide aggregates, mineral filler (if required), and asphalt binder to produce a mixture proportioned within the master gradation limits shown in the contract, and meeting the uniformity tolerance limits in Table 1.

**Table 1: Uniformity Tolerance Limits for HMA Mixtures**

Parameter		Top and Leveling Course		Base Course	
Number	Description	Range 1 (a)	Range 2	Range 1 (a)	Range 2
1	% Binder Content	-0.30 to +0.40	±0.50	-0.30 to +0.40	±0.50
2	% Passing	# 8 and Larger Sieves	±5.0	±8.0	±7.0
		# 30 Sieve	±4.0	±6.0	±6.0
		# 200 Sieve	±1.0	±2.0	±2.0
3	Crushed Particle Content (b)	Below 10%	Below 15%	Below 10%	Below 15%
a. This range allows for normal mixture and testing variations. The mixture must be proportioned to test as closely as possible to the Job-Mix-Formula (JMF).					
b. Deviation from JMF.					

Parameter number 2 as shown in Table 1 is aggregate gradation. Each sieve will be evaluated on one of the three gradation tolerance categories. If more than one sieve is exceeding Range 1 or Range 2 tolerances, only the one with the largest exceedance will be counted as the gradation parameter.

The master gradation should be maintained throughout production; however, price adjustments will be based on Table 1. Aggregates which are to be used in plant-mixed HMA mixtures must not contain topsoil, clay, or loam.

**c. Construction.** Submit a Mix Design and a JMF to the Engineer. Do not begin production and placement of the HMA until receipt of the Engineer's approval of the JMF. Maintain the binder content, aggregate gradation, and the crushed particle content of the HMA mixture within the Range 1 uniformity tolerance limits in Table 1. For mixtures meeting the definition of top or leveling course, field regress air void content to 3.5 percent with liquid asphalt cement unless

specified otherwise on HMA application estimate. For mixtures meeting the definition of base course, field regress air void content to 3.0 percent with liquid asphalt cement unless specified otherwise on HMA application estimate.

Ensure all persons performing Quality Control (QC) and Quality Assurance (QA) HMA field sampling are "Local Agency HMA Sampling Qualified" samplers. At the Pre-Production or Pre-Construction meeting, the Engineer will determine the method of sampling to be used. Ensure all sampling is done in accordance with *MTM 313 (Sampling HMA Paving Mixtures)* or *MTM 324 (Sampling HMA Paving Mixtures Behind the Paver)*. Samples are to be taken from separate hauling loads.

For production/mainline type paving, obtain a minimum of two samples, each being 20,000 grams, each day of production, for each mix type. The Engineer will sample and maintain possession of the sample. Sampling from the paver hopper is prohibited. Each sample will be divided into two 10,000 gram parts with one part being for initial testing and the other part being held for possible dispute resolution testing. Obtain a minimum of three samples for each mix type regardless of the number of days of production.

Obtain samples that are representative of the day's paving. Sample collection is to be spaced throughout the planned tonnage. One sample will be obtained in the first half of the tonnage and the second sample will be obtained in the second half of the tonnage. If planned paving is reduced or suspended, when paving resumes, the remaining sampling must be representative of the original intended sampling timing.

Ensure all persons performing testing are Bit Level One certified or Bit QA/QC Technician certified.

Ensure daily test samples are obtained, except, if the first test results show that the HMA mixture is in specification, the Engineer has the option of not testing additional samples from that day.

At the Pre-Production or Pre-Construction meeting, the Engineer and Contractor will collectively determine the test method for measuring asphalt content (AC ) using *MTM 319 (Determination of Asphalt Content from Asphalt Paving Mixtures by the Ignition Method)* or *MTM 325 (Quantitative Extraction of Bitumen from HMA Paving Mixtures)*. Back calculation will not be allowed for determining asphalt content.

Ensure all labs performing local agency acceptance testing are qualified labs per the *HMA Production Manual* and participate in the MDOT round robin process, or they must be *AASHTO Materials Reference Laboratory (AMRL)* accredited for *AASHTO T 30* or *T 27*, and *AASHTO T 164* or *T 308*. Ensure on non-National Highway System (NHS) routes, Contractor labs are made available, and may be used, but they must be qualified labs as previously stated. Contractor labs may not be used on NHS routes. Material acceptance testing will be completed by the Engineer within 14 calendar days, except holidays and Sundays, for projects with less than 5,000 tons (plan quantity) of HMA and within 7 calendars days, except holidays and Sundays, for projects with 5,000 tons (plan quantity) or more of HMA, after the Engineer has obtained the samples. QA test results will be provided to the Contractor after the Engineer receives the QC test results. Failure on the part of the Engineer or the laboratory to provide Quality Assurance test results within the specified time frame does not relieve the Contractor of their responsibility to provide an asphalt mix within specifications.



The correlation procedure for ignition oven will be established as follows. Asphalt binder content based on ignition method from MTM 319. Gradation (*ASTM D 5444*) and Crushed particle content (*MTM 117*) based on aggregate from *MTM 319*. The incineration temperature will be established at the Pre-Production Meeting. The Contractor will provide a laboratory mixture sample to the acceptance laboratory to establish the correction factor for each mix. Ensure this sample is provided to the Engineer a minimum of 14 calendar days prior to production.

For production/mainline type paving, the mixture may be accepted by visual inspection up to a quantity of 500 tons per mixture type, per project (not per day). For non-production type paving defined as driveways, approaches, and patching, visual inspection may be allowed regardless of the tonnage.

The mixture will be considered out-of-specification, as determined by the acceptance tests, if for any one mixture, two consecutive tests per parameter, (for Parameter 2, two consecutive aggregate gradations on one sieve) are outside Range 1 or Range 2 tolerance limits. If a parameter is outside of Range 1 tolerance limits and the second consecutive test shows that the parameter is outside of Range 2, then it will be considered to be a Range 1 out-of-specification. Consecutive refers to the production order and not necessarily the testing order. Out-of-specification mixtures are subject to a price adjustment per the Measurement and Payment section of this special provision.

Contractor operations will be suspended when the mixture is determined to be out-of-specification, but contract time will continue to run. The Engineer may issue a Notice of Non-Compliance with Contract Requirements (Form 1165), if the Contractor has not suspended operations and taken corrective action. Submit a revised JMF or proposed alterations to the plant and/or materials to achieve the JMF to the Engineer. Effects on the Aggregate Wear Index (AWI) and mix design properties will be taken into consideration. Production and placement cannot resume until receipt of the Engineer's approval to proceed.

Pavement in-place density will be measured using one of two approved methods. The method used for measuring in-place density will be agreed upon at a pre-production or pre-construction meeting.

Pavement in-place density tests will be completed by the Engineer during paving operations and prior to traffic staging changes. Pavement in-place density acceptance testing will be completed by the Engineer prior to paving of subsequent lifts and being open to traffic.

#### Option 1 – Direct Density Method

Use of a nuclear density gauge requires measuring the pavement density using the Gmm from the JMF for the density control target. The required in-place density of the HMA mixture must be 92.0 to 98.0 percent of the density control target. Nuclear density testing and frequency will be in accordance with the *MDOT Density Testing and Inspection Manual*.

#### Option 2 – Roller Method

The Engineer may use the Roller Method with a nuclear or non-nuclear density gauge to document achieving optimal density as discussed below.

Use of the density gauge requires establishing a rolling pattern that will achieve the required in-place density. The Engineer will measure pavement density with a density gauge using the Gmm from the JMF for the density control target.

Use of the Roller Method requires developing and establishing density frequency curves, and meeting the requirements of Table 2. A density frequency curve is defined as the measurement and documentation of each pass of the finished roller until the in-place density results indicate a decrease in value. The previous recording will be deemed the optimal density. The Contractor is responsible for establishing and documenting an initial or QC rolling pattern that achieves the optimal in-place density. When the density frequency curve is used, the Engineer will run and document the density frequency curve for each half day of production to determine the number of passes to achieve the maximum density. Table 5, located at the end of this special provision, can be used as an aid in developing the density frequency curve. The Engineer will perform density tests using an approved nuclear or non-nuclear gauge per the manufacturer's recommended procedures.

**Table 2: Minimum Number of Rollers Recommended Based on Placement Rate**

Average Laydown Rate, Square Yards per Hour	Number of Rollers Required (a)	
	Compaction	Finish
Less than 600	1	1 (b)
601 - 1200	1	1
1201 - 2400	2	1
2401 - 3600	3	1
3601 and More	4	1
a. Number of rollers may increase based on density frequency curve.		
b. The compaction roller may be used as the finish roller also.		

After placement, roll the HMA mixture as soon after placement as the roller is able to bear without undue displacement or cracking. Start rolling longitudinally at the sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drum. Ensure each required roller is 8 tons minimum in weight unless otherwise approved by the Engineer.

Ensure the initial breakdown roller is capable of vibratory compaction and is a maximum of 500 feet behind the paving operations. The maximum allowable speed of each roller is 3 miles per hour (mph) or 4.5 feet per second. Ensure all compaction rollers complete a minimum of two complete rolling cycles prior to the mat temperature cooling to 180 degrees Fahrenheit (F). Continue finish rolling until all roller marks are eliminated and no further compaction is possible. The Engineer will verify and document that the roller pattern has been adhered to. The Engineer can stop production when the roller pattern is not adhered to.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for using applicable pay items as described in subsection 501.04 of the Standard Specifications for Construction, or the contract, except as modified below.

**Base Price.** Price established by the Department to be used in calculating incentives and adjustments to pay items and shown in the contract.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 1, but not the Range 2, tolerance limits, that mixture parameter will be subject to a 10 percent penalty. The 10 percent penalty will be assessed based on the acceptance tests only unless the Contractor requests that the 10,000 gram sample part retained for possible dispute resolution testing be tested. The Contractor has 4 calendar days from receipt of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractor's QC test results for the corresponding QA test results must result in an overall payment greater than QA test results otherwise the QA tests will not be allowed to be disputed. The Engineer has 4 calendar days to send the dispute resolution sample to the lab once dispute resolution testing is requested. The dispute resolution sample will be sent to an independent lab selected by the Local Agency, and the resultant dispute test results will be used to determine the penalty per parameter, if any. Ensure the independent lab is a MDOT QA/QC qualified lab or an AMRL HMA qualified lab. The independent lab must not have conflicts of interest with the Contractor or Local Agency. If the dispute testing results show that the mixture parameter is out-of-specification, the Contractor will pay for the cost of the dispute resolution testing and the contract base price for the material will be adjusted, based on all test result parameters from the dispute tests, as shown in Table 3 and Table 4. If the dispute test results do not confirm the mixture parameter is out-of-specification, then the Local Agency will pay for the cost of the dispute resolution testing and no price adjustment is required.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 2 tolerance limits, the 10,000 gram sample part retained for possible dispute resolution testing will be sent, within 4 calendar days, to the MDOT Central Laboratory for further testing. The MDOT Central Laboratory's test results will be used to determine the penalty per mixture parameter, if any. If the MDOT Central Laboratory's results do not confirm the mixture parameter is out-of-specification, then no price adjustment is required. If the MDOT Central Laboratory's results show that the mixture is out-of-specification and the Engineer approves leaving the out-of-specification mixture in place, the contract base price for the material will be adjusted, based on all parameters, as shown in Table 3 and Table 4.

In the case that the Contractor disputes the results of the test of the second sample obtained for a particular day of production, the test turn-around time frames given would apply to the second test and there would be no time frame on the first test.

The laboratory (MDOT Central Laboratory or independent lab) will complete all Dispute Resolution testing and return test results to the Engineer, who will provide them to the Contractor, within 13 calendar days upon receiving the Dispute Resolution samples.

In all cases, when penalties are assessed, the penalty applies to each parameter, up to two parameters, that is out of specification.

**Table 3: Penalty Per Parameter**

Mixture Parameter out-of-Specification per Acceptance Tests	Mixture Parameter out-of-Specification per Dispute Resolution Test Lab	Price Adjustment per Parameter
NO	N/A	None
YES	NO	None
	YES	Outside Range 1 but not Range 2: decrease by 10%
		Outside Range 2: decrease by 25%

The quantity of material receiving a price adjustment is defined as the material produced from the time the first out-of-specification sample was taken until the time the sample leading to the first in-specification test was taken.

Each parameter of Table 1 is evaluated with the total price adjustment applied to the contract base price based on a sum of the two parameter penalties resulting in the highest total price adjustment as per Table 4. For example, if three parameters are out-of-specification, with two parameters outside Range 1 of Table 1 tolerance limits, but within Range 2 of Table 1 limits and one parameter outside of Range 2 of Table 1 tolerance limits and the Engineer approves leaving the mixture in place, the total price adjustment for that quantity of material is 35 percent.

**Table 4: Calculating Total Price Adjustment**

Cost Adjustment as a Sum of the Two Highest Parameter Penalties		
Number of Parameters Out-of-Specification	Range(s) Outside of Tolerance Limits of Table 1 per Parameter	Total Price Adjustment
One	Range 1	10%
	Range 2	25%
Two	Range 1 & Range 1	20%
	Range 1 & Range 2	35%
	Range 2 & Range 2	50%
Three	Range 1, Range 1 & Range 1	20%
	Range 1, Range 1 & Range 2	35%
	Range 1, Range 2 & Range 2	50%
	Range 2, Range 2 & Range 2	50%

**Table 5: Density Frequency Curve Development**

Tested by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Route/Location:		Air Temp:
Control Section/Job Number:		Weather:
Mix Type:	Tonnage:	Gauge:
Producer:	Depth:	Gmm:

Roller #1 Type: \_\_\_\_\_

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #2 Type: \_\_\_\_\_

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #3 Type: \_\_\_\_\_

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Summary: \_\_\_\_\_

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MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PAVEMENT ACCEPTANCE FOR JOINTED PLAIN CONCRETE PAVEMENT

CFS:JFS

1 of 1

APPR:JAB:TES:05-18-11

FHWA:APPR:08-10-11

**a. Description.** This special provision defines the requirements for pavement acceptance that are in addition to those specified in section 602 of the Standard Specifications for Construction. When applicable, the condition for initial acceptance of the pavement according to the Materials and Workmanship Warranty still apply. This special provision does not relieve the Contractor of responsibility for the work according to subsection 107.11 of the Standard Specifications for Construction.

The Engineer will inspect the completed pavement for any visible indication of cracking. If cracking is found, decisions regarding corrective actions will be made jointly by the Engineer and the Construction Field Services Division, in accordance with Table 1.

All costs for the work required to repair or replace any unacceptable pavement are the responsibility of the Contractor. No time extensions will be granted to the Contractor for any required repair work to meet the requirements of this special provision.

For purposes of this special provision, a crack is defined as a fissure of varying length and orientation in the pavement that extends to some measurable depth. A crack may be a single entity or found in groups or clusters with possible associated distress features.

**Table 1: Acceptance Factors and Corrective Action**

Acceptance Factor	Length	Extent	Severity	Corrective Action (a)(d)
LC	any	single/multiple	all	Replace slab (b)
TC - $\geq$ 1.5 ft. from TJ	any	single/multiple	all	Replace slab (b)
TC - < 1.5 ft. from TJ	any	single/multiple	all	Replace joint (c)
LC = longitudinal crack TC = transverse crack TJ = transverse joint				
a. Repair must establish an acceptable transverse load transfer of efficiency greater than 90%. b. An appropriate corrective treatment (based on the specific crack's characteristics, its location relative to a longitudinal or transverse joint, and the corrective treatment's contribution toward the pavement's intended service life) may be proposed by the Contractor in lieu of full slab replacement. The Contractor's corrective treatment proposal is subject to approval by the Engineer. c. Full-depth PCC repair. FDR must be 6 feet long, minimum, by the entire lane width according to Standard Plan Series R-44. Install contraction joints (Type Crg) at both transverse joint locations. d. Do not overcut into the adjacent lane or shoulder.				

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
QUALITY CONTROL AND ACCEPTANCE OF PORTLAND CEMENT CONCRETE  
(FOR LOCAL AGENCY PROJECTS ONLY)

CFS:JFS

1 of 21

APPR:TES:DBP:06-14-19  
FHWA:APPR:06-14-19

**a. Description.** The Contractor must administer quality control (QC) and the Department will administer quality assurance (QA) procedures that will be used for acceptance of and payment for all Portland cement concrete (PCC) for the project. Except as explicitly modified by this special provision, all materials, test methods, and PCC mixture requirements of the standard specifications and the contract apply.

Do not place concrete until the Engineer's daily startup testing verifies that the fresh concrete properties have been met, in accordance with subsection d.2 of this special provision.

Provide the Engineer a minimum 24 hours notification prior to each concrete placement.

1. Terminology.

**Air Content of Fresh Concrete.** The recorded total air content of fresh concrete sampled and tested according to this special provision.

**Air Content Test Results.** The recorded air content of fresh concrete corresponding to the strength test specimens that were molded for acceptance.

**Alkali-Silica Reactivity (ASR).** A chemical reaction which occurs over time within concrete between high alkaline cement paste and reactive forms of silica found in some aggregates. In the presence of moisture, an expansive ASR gel is formed which can exert pressure within the concrete, causing random cracking and premature deterioration of the concrete. See subsection c.5.A of this special provision.

**Base Price.** Price established by the Department to be used in calculating incentives or adjustments to pay items and shown in the contract.

**Concrete Mix Design.** The process, by which the concrete mixture performance characteristics are defined, based on selected materials, performance requirements, environmental exposure considerations, placement methods, and other factors that control the plastic and hardened properties of the concrete in efforts to produce an economical and durable product.

**Job Mix Formula (JMF).** The actual batch quantities (mixture proportions) of each constituent included in the concrete mixture, based on adjustments to the target weights attained from the mix design process, necessary to optimize the concrete mixture properties.

**Pay Factor (PF).** The factor that is determined according to subsections d.3 of this special provision, used to calculate the price adjustment for a discrete quantity of concrete relative

to its respective level of quality. Pay factor will not exceed 1.00. Therefore, there will never be a positive pay adjustment.

**Price Adjustment (ADJ).** The price adjustment applied to the quantity of concrete represented by the respective quality index analysis described in subsection d.3 of this special provision.

**Production Lot.** A discrete cubic yard quantity of concrete containing the same JMF and used for the same application, as described in subsection d.2 of this special provision.

**Quality Assurance (QA).** Activities administered by the Engineer dealing with acceptance of the product, including, but not limited to, materials selection, sampling, testing, construction inspection, and review of Contractor QC documentation. All concrete QA sampling and testing will be administered by the Department. Department administered QA is described in section d of this special provision.

**Quality Control (QC).** All activities administered by the Contractor to monitor, assess, and adjust production and placement processes to ensure the final product will meet the specified levels of quality, including, but not limited to, training, materials selection, sampling, testing, project oversight and documentation. Contractor administered QC is described in section c of this special provision.

**QC Action Limits.** A range of values established by the Contractor in the QC plan that, if exceeded, requires that corrective action be taken by the Contractor to restore the continuity and uniformity of the mixture and methods in conformance with specification requirements. The QC action limits must not exceed the QC suspension limits.

**QC Plan.** The project-specific plan developed by the Contractor describing, in detail, all aspects of production and construction for the project to ensure consistent control of quality to meet specification requirements.

**QC Plan Administrator.** An employee of, or consultant engaged by the Contractor, responsible for developing and overseeing all aspects of QC for the project. This includes, but is not limited to preparing the QC plan, managing the Contractor QC personnel, communicating routinely with the production personnel to ensure quality, initiating corrective action and suspending operations when the process is found to be producing non-conforming materials, and preparing and submitting all necessary QC documentation to the Engineer within the specified time period.

**QC Suspension Limits.** A range of values defined in Table 1 that, if exceeded on a single QC test, requires that the Contractor suspend operations and determine, correct, and document the deficiencies before resuming production. The QC suspension limit must not exceed specification requirement thresholds.

**Sample.** A representative quantity of concrete taken during production which is used to measure the quality characteristics for the concrete.

**Sampling Rate.** The number of times the fresh concrete is sampled, as described in subsection d.2 of this special provision.

**Small Incidental Quantity.** A single day's placement of less than 20 cubic yards of concrete used for non-structural or non-pavement related applications, including, but not limited to:



curb and gutter, sidewalks and sidewalk ramps (excluding driveways and driveway ramps), installing sign or fence posts, guard rail or cable rail foundations (excluding end anchorage foundations), or other contract items where the small quantity of concrete is not paid for separately, as approved by the Engineer. Requirements for small incidental quantity consideration are described in subsections c.5.G, d.2.B and d.3 of this special provision. The corresponding weekly QA test results must meet specification limits defined in Table 3.

**Specification Limits.** The threshold values placed on a quality characteristic used to evaluate the quality of the material.

**Strength Sample Test Result.** The average of the two companion 28-day compressive strength test specimens taken from the same sample of concrete is considered a strength sample test result.

**Strength Test Specimen.** A strength test specimen is an individual 6-inch by 12-inch strength test cylinder or 4-inch by 8-inch strength test cylinder molded and cured according to *AASHTO T23/ASTM C 31* and tested according to *AASHTO T22/ASTM C 39*. All respective QC or QA strength test specimens must be the same nominal size. Strength test specimen cylinder size of 4-inch by 8-inch is permitted only if the nominal maximum coarse aggregate particle size, as specified for the coarse aggregate in the concrete mixture, is 1-inch, or less.

**Sublot.** A portion of a production lot, represented by a complete set of QA tests, as described in subsection d.2.A of this special provision. The Engineer and the Contractor may agree to reduce the typical sublot size based on project staging or other project conditions.

**Supplementary Cementitious Materials (SCM).** A mineral admixture (slag cement, fly ash) used to replace a portion of the Portland cement, either individually or as a blended cement, in the concrete mixture. SCM requirements are described in subsection c.5 of this special provision.

**b. Materials.** Mixture requirements must be in accordance with the contract.

**c. Contractor Administered Quality Control (QC).**

1. Contractor Quality Control Plan (QC plan). Prepare, implement, and maintain a QC plan specific to the project for concrete that will provide quality oversight for production, testing, and control of construction processes. The QC plan must be in conformance with the contract and must identify all procedures used to control production and placement including when to initiate corrective action necessary to maintain the quality and uniformity of the work.

Develop concrete mix designs and JMFs, as specified, and conduct QC sampling, testing, and inspection during all phases of the concrete work at the minimum frequency, or at an increased frequency sufficient to ensure that the work conforms to specification requirements.

Project-specific items required in the QC plan include (where applicable), but are not limited to the following:

A. Organization chart.

- B. QC Plan Administrator and contact information.
- C. The name(s) and credentials of the QC staff.
- D. Methods for interaction between production and QC personnel to engage timely corrective action, including suspension of work.
- E. Coordination of activities.
- F. Documentation, procedures, and submittals.
- G. Project and plant specifics.
- H. Concrete production facilities inspections and certifications.
- I. Current testing equipment calibration documentation including calibration factor.
- J. Testing and initial field curing facilities for QC and QA strength test specimens (AASHTO T23/ASTM C 31).
- K. Stockpile management plan.
- L. Corrective action plan.
- M. Mixing time and transportation, including time from batching to completion of delivery and batch placement rate (batches per hour), along with the manufacturer's documentation relative to the batching equipment's capabilities in terms of maximum mixing capacity and minimum mixing time (ASTM C 94).
- N. Placement and consolidation methods including monitoring of vibration, depth checks, and verification of pavement dowel bar alignment.
- O. Process for monitoring stability of air content of fresh concrete during concrete production and placement.
- P. Hot and cold weather protection considerations and methods.
- Q. Control charts with action and suspension limits.
- R. Verification for non-deleterious alkali-silica reactivity (see subsection c.5.A of this special provision).
- S. Mix design and JMFs.
- T. Proposed production lot size and location for use of each JMF on the project.
- U. The frequency of sampling, testing, and yield verification.
- V. Handling, protection, initial curing, and transporting of strength test specimens (AASHTO T23/ASTM C31).

- W. Methods to monitor construction equipment loading and open-to-traffic strengths.
- X. Finishing and curing procedure.
- Y. Ride quality control.
- Z. List of QC records to be submitted to the Engineer in accordance with subsection c.2 of this special provision.

Submit the QC plan, for the appropriate items of work, to the Engineer for review a minimum of 10 working days before the start of related work. The Engineer will notify the Contractor of any objections relative to the content of the QC plan within 5 working days of receipt of the QC plan. Do not begin concrete placement before acceptance of the QC plan by the Engineer. If the approved QC plan fails to provide acceptable work, or acceptable control of the work, the Engineer may require the Contractor to revise the QC plan. Revisions to the QC plan must be approved by the Engineer prior to resuming work.

2. QC Records. Maintain complete records of all QC tests and inspections. Document what action was taken to correct deficiencies. Include sufficient information to allow the test results to be correlated with the items of work represented.

Furnish one copy of all QC records, including test reports for the fresh concrete placement, to the Engineer within 24 hours after the date covered by the record in a format acceptable to the Engineer. The Engineer will withhold acceptance of the concrete for failure to provide properly documented and timely QC records and reports.

If the Engineer is performing QA sampling and testing at the same time the Contractor is performing QC sampling and testing, all associated QC records must include the appropriate production lot identification number that correlates with the Department's QA production lot identification number.

3. Personnel Requirements. The QC Plan Administrator must have full authority and responsibility to take all actions necessary for the successful implementation of the QC plan, including but not limited to, the following:

- A. Monitoring and utilizing QC tests, control charts, and other QC practices to ensure that delivered materials and proportioning meets specification requirements.
- B. Monitoring materials shipped to the project, prior to their use, to ensure their continued compatibility toward producing consistent quality.
- C. Periodically inspecting all equipment utilized in transporting, proportioning, mixing, placing, consolidating, finishing, and curing to ensure proper operation.
- D. Monitoring materials stockpile management, concrete batching, mixing, transporting, placement, consolidation, finishing, and curing to ensure conformance with specification requirements.
- E. Maintaining and submitting all QC records and reports.
- F. Directing the necessary corrective action to ensure continual conformance within

the QC action limits.

G. Suspending production for the project when suspension limits are exceeded.

H. Conducting or monitoring adjustments to the JMF.

Individuals performing QC tests must demonstrate that they are proficient and capable of sampling and testing concrete or aggregate, where applicable, in accordance with the associated test procedures and Department requirements prior to commencement of related work. Any adjustments to the JMF must be made by a certified concrete technician (Michigan Concrete Association (MCA) Michigan Level II).

4. **QC Laboratory Requirements.** Laboratories, including field laboratories and all associated testing equipment that prepare concrete mixes or perform QC testing, must demonstrate to the Engineer that they are equipped, staffed, calibrated, and managed so as to be capable of batching, and testing PCC in accordance with the applicable test methods and procedures. Mix designs and their accompanying JMFs must include a statement, signed by a certified concrete technician (MCA Michigan Level II), that all applicable standard test methods have been followed in verifying the mix design and JMF.

5. **Mix Design and Documentation.** Design concrete mixtures meeting the requirements specified in Table 1. Provide the grade of concrete for the section number reference application specified in Table 1, or as specified in the contract. Request variance in writing when proposing a mix design that exhibits temperature, slump or air content other than those specified. Include the proposed mix design, JMF, and associated trial batch verification test data. Do not use a grade of concrete with a lower specification limit (LSL) 28-day compressive strength greater than what is designated for the application.

Blended cement meeting the requirements of *ASTM C 595 Type IL* is permitted.

Ensure supplementary cementitious materials are from an MDOT Approved Manufacturer. Slag cement must meet the requirements of subsection 901.06 of the Standard Specifications for Construction. Fly ash must meet the requirements of subsection 901.07 of the Standard Specifications for Construction.

Secure prior approval from the Engineer to use concrete intended for early opening to traffic to facilitate driveway gaps or other features necessary for required local access.

Unless otherwise specified in the contract, set accelerating admixtures are prohibited.

Optimized aggregate gradation is required for high performance concrete and concrete mixtures that are placed using a pump. Concrete mixtures for tremie and drilled shaft applications do not require optimized aggregate gradation. The physical requirements for coarse and intermediate aggregates specified in subsection 902.03.C of the Standard Specifications for Construction apply to high performance concrete pavement mixtures. The physical requirements for aggregates used in concrete mixtures for all other applications will be according to the contract.

Unless otherwise specified in the contract, provide either concrete Grade P1 or Grade D for bridge approach slab applications.

Unless otherwise specified in the contract, do not exceed 40 percent replacement of the Portland cement in the concrete mixture with a supplementary cementitious material. Do not exceed 40 percent total replacement of the Portland cement if more than one supplementary cementitious material is used in the concrete mixture.

Use the combined weight of all cementitious materials to determine compliance with the maximum water-cementitious ratio and cementitious material content requirements specified in Table 1.

For night casting, where applicable, a water-reducing admixture may be used in lieu of a water-reducing and retarding admixture, provided the concrete can be placed and finished in the sequence specified on the plans prior to initial set, is not subjected to residual vibration, or is not within the areas influenced by dead load deflections as a result of adjacent concrete placement operations. When the maximum air temperature is not forecast to exceed 60 degrees F for the day, the Contractor may use a water-reducing admixture or a water-reducing retarding admixture.

**Table 1: Minimum Mix Design Requirements for Concrete**

Mix Design Parameter	Grade of Concrete						
	P1M (a,b,e)	P1 (a,b)	D,DM (a,b,e)	T	S1 (a)	S2,S2M (a,b,e)	S3/P2 (a)
Lower Specification Limit (LSL) (28-day compressive, psi)	3500	3500	4500	3500	4000	3500	3000
Rejection Limit for an Individual Strength Sample Test Result	3000	3000	4000	3000	3500	3000	2500
Maximum Water/Cementitious Ratio (lb/lb) (c)	0.45						
Cementitious Material Content (lb/yd <sup>3</sup> ) (d)	470-564	517-611	517-658	517-611	517-611	517-611	489-517
Air Content (percent) (f)	5.5-8.5						
Slump (inch) (max.)	(g)						
Section Number Reference (h)	602, 603	602, 603, 801, 802, 803, 810	706, 711, 712	706, 718	705	401, 706, 712, 713, 718, 801, 802, 803, 810, 819	402, 403, 602, 803, 804, 806, 808, 810, 813, 814
<p>a. If the local average minimum temperature in the next 10 consecutive days is forecast to be below 40 degrees F, submit a revised QC plan for the Engineer's approval, addressing in detail changes in materials, concrete batching and mixing processes, construction methods, curing, and protection of the in situ concrete to ensure that the necessary quality characteristics of the hardened concrete product will not be compromised as a result of the cold weather. The revised QC plan must be approved by the Engineer prior to cold weather concrete placement. Do not remove supplementary cementitious material from the concrete mixture.</p> <p>b. Use aggregates from only geologically natural sources for pavement, shoulder, miscellaneous pavement (including ramps), concrete pavement overlay, bridge approach slab, structural concrete, drilled shaft, bridge railing, and bridge sidewalk applications.</p> <p>c. Use admixtures as listed in the Qualified Products Lists to reduce mixing water. Ensure concrete in concrete diaphragms contains a water-reducing admixture, or a water-reducing retarding admixture.</p> <p>d. Type III cement is not permitted.</p> <p>e. For grades of concrete requiring optimized gradation, aggregates must meet the physical requirements specified in subsection 902.03.C of the Standard Specifications for Construction.</p> <p>f. For action, suspension, and specification limits, see Tables 2 and 3, where applicable.</p> <p>g. The maximum slump for Grades P1, P1M, and P2 concrete is 3 inches or as documented on the approved JMF. All other grades of concrete will be according to Table 701-1 of the Standard Specifications for Construction.</p>							
h. Section Number Reference:			402 Storm Sewers 602 Concrete Pavement Construction 705 Foundation Piling 711 Bridge Railings 713 Bridge Rehabilitation-Steel 801 Concrete Driveways 803 Concrete Sidewalk, Sidewalk Ramps, and Steps 806 Shared Use Paths 810 Permanent Traffic Signs and Supports 814 Paved Ditches				
401 Pipe Culverts							
403 Drainage Structures							
603 Concrete Pavement Restoration							
706 Structural Concrete Construction							
712 Bridge Rehabilitation-Concrete							
718 Drilled Shafts							
802 Concrete Curb, Gutter and Dividers							
804 Concrete Barriers and Glare Screens							
808 Fencing							
813 Slope Protection							
819 Electrical and Lighting							

A. Alkali-Silica Reactivity. Provide documentation to the Engineer that the concrete mixture does not present the potential for deleterious expansion caused by alkali-silica reactivity (ASR). Provide current ASR test results (valid for 2 years from completion of testing), for the fine aggregate that is proposed to be used in the concrete, from an independent testing laboratory proficient in ASR testing. The independent testing laboratory must certify in writing, including a signed statement that all testing was conducted in accordance with the designated standard test procedures, described herein. Test results must conform to the specified criterion for one of the following standard test methods. ASR testing is not required for concrete pavement repairs and temporary concrete pavements. Use the Rounding Method described in *ASTM E 29* when determining significant digits for reporting expansion test results.

(1) Method 1. *ASTM C 1293*. Concrete Prism Test. If the expansion of concrete prisms is not greater than 0.040 percent (rounded to the nearest 0.001 percent) after 1 year, the fine aggregate is considered non-deleterious to ASR and may be used in the JMF.

(2) Method 2. *ASTM C 1567*. Mortar Bar Test. If no previous test data are available for the fine aggregate that shows it is resistant to ASR using Method 1, above, replace 25 to 40 percent of the Portland cement in the concrete mixture with a supplementary cementitious material. A blended cement meeting the requirements of *ASTM C 595* containing the above Portland cement and supplementary cementitious material proportions may also be used.

Demonstrate the ability of the supplementary cementitious material to control the deleterious expansion caused by ASR by molding and testing mortar bars according to the standard test method described in *ASTM C 1567* using the mix proportions and constituent sources for both the aggregates and the cementitious materials that will be used for the project. Make at least three test specimens for each cementitious materials-aggregate combination. If the average of three mortar bars for a given cementitious materials-aggregate combination produces an expansion less than 0.10 percent (rounded to the nearest 0.01 percent) at 14 days of immersion, the JMF associated with that combination will be considered non-deleterious to ASR. If the average expansion is 0.10 percent (rounded to the nearest 0.01 percent) or greater, the JMF associated with that combination will be considered not sufficient to control the deleterious expansion caused by ASR and the JMF will be rejected.

(3) Method 3. *ASTM C 1260*. Mortar Bar Test. If the expansion of the mortar bars is less than 0.10 percent (rounded to the nearest 0.01 percent) at 14 days of immersion, the fine aggregate is considered non-deleterious to ASR and may be used in the concrete without the need for ASR mitigation.

The Engineer will not approve the use of the JMF if the expansion exceeds the respective threshold limits for the respective ASTM test method used.

B. Contractor Provided Mixes. Provide mix design and accompanying JMFs using the methods of verification included in this special provision. Include sufficient information on constituent materials and admixtures along with trial batch verified physical properties of the fresh concrete, mix proportions per cubic yard for all constituents and compressive strength test results necessary to allow the Engineer to

fully evaluate the expected performance of the concrete mixture.

(1) Mix Documentation. Prepare mix designs for each grade of concrete required on the project. Submit JMF for each mix design, including all required documentation, to the Engineer for review 10 working days before the anticipated date of placement. The Engineer will notify the Contractor of any objections within 5 working days of receipt of the mix documentation. Number or otherwise identify each JMF and reference all accompanying documentation to this identification. Reference each JMF to the appropriate method of verification. Mix design and JMF submittals that do not include all required documentation will be considered incomplete and the Engineer will return them without review.

Mix documentation is valid for 2 years provided the material characteristics have not deviated beyond the requirements specified in the contract.

All mix designs and accompanying JMFs must be traceable to a laboratory meeting the requirements of this special provision.

Submit mix design and JMF on the MDOT Job Mix Formula (JMF) Concrete Field Communication form (MDOT Form Number 1976); include accompanying documentation. List the source of materials, bulk density (unit weight) of coarse aggregate (rodding procedure or shoveling procedure), absorption of aggregates, relative density (specific gravity) of aggregates, aggregate correction factors, batch weights, and project specific or historical laboratory test data. Include the recorded air content of fresh concrete using the same admixture and cementitious material sources to be used in the production of the concrete for the project. A JMF will be approved only if all of the minimum mix design requirements specified in the contract have been met.

(2) Job Mix Formula (JMF). Select proportions for concrete mixtures according to *ACI Standard 211.1*. The volume (oven-dry-rodded) of coarse aggregate per unit volume of concrete must be 65 percent, minimum.

Four methods of verification of proposed JMF are acceptable.

(a) Method 1. Trial Batches. Verification of JMF is based on trial batches with the same materials and proportions proposed for use on the project. Prepare at least one trial batch for each mix design in sufficient time before starting concrete placement to allow for review according to subsection c.5.B.(1) of this special provision. Provide the results of temperature, slump, density (unit weight), air content of fresh concrete, 28-day compressive strength, and age of concrete at the time of strength testing, for a minimum of three independent samples. All samples may be taken from a single trial batch for a mix design provided the trial batch is at least four cubic yards in volume. For JMF trial batch verification purposes only, 7-day compressive strength test results which report at least 70 percent of the specified 28-day lower specification limit (LSL) will be sufficient documentation in lieu of 28-day compressive strengths. The average of at least two strength test specimens represents one compressive strength sample test result for each independent sample. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.



(b) Method 2. Same Mix. Verification of JMF is based on the concrete producer's experience with the same mix design, JMF, and the same materials. Provide the results of temperature, slump, density (unit weight), air content of fresh concrete, 28-day compressive strength, and age of concrete at the time of strength testing, for a minimum of three independent samples. The average of at least two strength test specimens represents one compressive strength sample test result for each independent sample. Do not substitute material types or sources, including admixtures or cementitious materials, nor change mix proportions in the JMF. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.

(c) Method 3. Similar Mix. Verification of JMF is based on requirements described in Method 2, in subsection c.5.B.(2).(b) of this special provision. Substitution of coarse aggregate source is permitted if the new source is of the same geologic type as the original aggregate, and conforms to the specification requirements for the application. Substitution of fine aggregate is permitted only if the new source has been tested for ASR. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.

Provide the supporting laboratory trial batch documentation and accompanying calculations showing how the mix proportions in the JMF were adjusted, based on the documented differences in relative density (specific gravity), bulk density (unit weight) and absorption of the substituted aggregate sources, to produce a theoretical yield of 100 percent and the required fresh concrete properties.

(d) Method 4. Annual Verification. At the Engineer's option, verification may be accepted annually for a concrete producer rather than on a project basis provided the sources and proportions of the constituent materials, including cementitious materials and source and types admixtures, do not change. If the project is the continuation of work in progress during the previous construction season and written certification is submitted to the Engineer that materials from the same source and with the same mixture properties are to be used, the Engineer may waive the requirement for annual renewal verification of the JMF for the project. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.

C. Department Provided Mixes. Unless otherwise specified in the contract or approved by the Engineer, the Engineer will provide the concrete JMF for the following types of concrete regardless of the total quantity for the project.

- (1) Structural concrete patching mixtures, mortar and grout.
- (2) Bridge deck overlay concrete mixtures.
- (3) Project-specific concrete mixtures and grades not defined in Table 1.

Provide all other mix designs and accompanying JMF's according to subsection c.5.B of this special provision.

The ASR documentation for the fine aggregate described in subsection c.5.A of this special provision must accompany the Contractor's request for the concrete JMF.

D. Changes in Materials and Proportions. Any changing from one approved JMF to another for the same grade of concrete must have prior approval by the Engineer.

Prior to batching, verify that the proposed JMF changes will not affect the properties of the fresh concrete (slump, temperature, air content, density (unit weight), workability), nor result in deleterious mortar bar expansion as a result of ASR, as described in subsection c.5.A of this special provision.

Record all changes to JMF in the QC records along with the rationale for the change.

E. QC Sampling and Testing. Conduct startup sampling and testing for temperature, slump, density (unit weight), and air content on the first load. Do not place concrete until testing verifies that the fresh concrete properties have not exceeded the QC action and suspension limit thresholds specified in Table 2 and the testing correlation requirements of subsection d.1.B of this special provision have been met. Continue testing subsequent loads as described in the QC plan, for each grade of concrete delivered to the work site each day. The QC sampling and testing must be random and independent from the Agencies QA sampling and testing.

Provide the curing facilities in accordance with subsection d.2.C of this special provision prior to start of concrete production.

Perform QC sampling and testing for air content of fresh concrete that is either slipformed or pumped, as described in the QC plan. Sample and test a representative haul unit of concrete immediately after its discharge but before the slipform paver or pump hopper, where applicable. Sample and test the concrete representing the same haul unit, again, after the slipform paver or after discharge from the pump (without interruption or alteration of the pumping operation), where applicable. If the difference in measured air content between the two test locations for the same concrete is greater than 1.5 percent air by volume of concrete, suspend operations and administer corrective action. Resume concrete placement only after taking the necessary corrective action to reduce the loss in air content of fresh concrete between the two test locations, as approved by the Engineer. Document the corrective action to be taken in the QC records and make the necessary changes to the QC plan, where applicable.

Concrete exceeding the maximum specification limits for slump or temperature must be rejected regardless of the total mixing time at the time of arrival to the project.

The Engineer may require the Contractor to administer additional QC sampling and testing if the Engineer determines the Contractor's current QC sampling and testing methodology is shown to be insufficient to ensure continual control of the quality of the concrete.

Take the appropriate corrective action, as described in the QC plan, when QC testing shows the QC action limits for any quality characteristic are exceeded. Suspend production if any of the QC suspension limits are exceeded or if the corrective action is not sufficient to restore the quality to acceptable levels.

Resume production only after making all necessary adjustments to bring the mixture into conformance with all applicable specifications and receiving approval to resume work

from the Engineer. Document these adjustments in the QC records.

**Table 2: QC Action and Suspension Limits**

Quality Characteristic	Action Limits	Suspension Limits
Air Content (percent)	See Note Below	< 5.0 or > 9.0
Air Content Loss (percent)	As Defined in the Contractor QC plan	Greater than 1.5
Conc. Temp. (Deg. F)		< 45 or > 90 at time of placement
Slump (max.) (inch)		See Table 1, footnote (g)
Density (unit weight)		N/A
Note: Action limits must be defined in the Contractor QC plan and cannot be < 5.5 or > 8.5. Suspend work if air content is < 5.0 or > 9.0 percent after pump or paver, regardless of the air content loss.		

F. Work Progress Test Specimens. Determine the strength of concrete for opening to construction traffic or regular traffic, for removing shoring and forms, or for similar purposes in accordance with subsections 104.11, 601.03.H and 701.03.D of the Standard Specifications for Construction, and as approved by the Engineer. Cure work progress test specimens in the same manner as the in-situ concrete. Allow the Engineer to witness testing of work progress test specimens.

The maturity method may be used to determine the in-place, opening-to-traffic flexural strength, provided the necessary preliminary flexural strength versus time-temperature factor correlation, using the same materials and JMF, is established according to Department procedures and approved by the Engineer before placing the concrete.

G. Reduced QC for Small Incidental Quantities. If approved by the Engineer, reduced levels of on-site QC testing for concrete may be considered for small incidental quantities defined in subsection a.1 of this special provision.

Unless approved by the Engineer, multiple small incidental quantities, including ones that are consecutively placed throughout the project on the same day, are not eligible for reduced QC consideration if the total plan quantity of concrete for the item exceeds 100 cubic yards in volume. Include details for reduced QC testing and oversight in the approved QC plan, and in accordance with following:

(1) The small incidental quantity of concrete will be limited to a single day's concrete placement of a maximum 20 cubic yards in volume.

(2) The small incidental quantity of concrete is not an integral part of a structural load bearing element.

(3) The Engineer received written certification from the Contractor that the concrete supplier has a current QC plan in place and available for review upon request by the Engineer.

(4) The concrete supplier employs a certified concrete technician (MCA Michigan Level II) available at the plant or on call during concrete placement to validate and authorize modifications to the concrete JMF, as necessary.

(5) Prior to the first concreting operation, concrete representing the JMF for the small incidental quantity has been sampled and tested by a certified concrete technician (MCA Michigan Level I or II) to verify that, historically, the JMF produced a

concrete mixture meeting the minimum requirements for density (unit weight), slump, air content, and strength. Annual verification may be acceptable provided there are no changes to the material types or sources, including the cementitious materials and admixtures.

(6) The Engineer verified that the temperature, slump, and air content conform to specification requirements at the start of the day's concreting operation associated with the small incidental quantity.

(7) The Engineer is notified and provided sufficient opportunity to witness concrete placement.

**d. Department Administered Quality Assurance (Acceptance).**

1. Department Quality Assurance Plan (QA plan). The Engineer will be responsible for administering the quality-based acceptance and will institute any actions necessary toward its successful implementation.

Acceptance of concrete pavement repair mixtures and concrete mixtures not included in Table 1 will be in accordance with the contract.

The Engineer will develop and follow a QA plan. The Engineer will provide the QA plan to the QC Plan Administrator a minimum of 5 working days prior to the pre-production meeting. The QA plan will be reviewed at the pre-production meeting and any proposed changes will be documented.

The nominal QA strength test specimen size, defined in subsection a.1 of this special provision will be noted in the QA plan.

A. Personnel Requirements. The personnel responsible for field inspection and for obtaining QA samples will possess the required qualifications to collect QA samples. Sampling will be performed by a certified concrete technician (MCA Michigan Level I or II) or (MCAT) certified aggregate technician, where applicable.

B. Testing Correlation. Prior to initial concrete placement, the testing personnel for both the Engineer's QA and Contractor's QC will use the equipment they have assigned to the project to conduct side by side correlation testing of the same concrete used on the project to verify correlation of both the Department's and the Contractor's test results for temperature and air content of fresh concrete. Additional side by side correlation testing will be conducted whenever there is a change in QC or QA equipment and/or testing personnel for the project, or as directed by the Engineer. The temperature measuring devices used for QC and QA must correlate with each other within 2 degrees F. If the air content results of the side by side tests conducted by the QC and QA testers and equipment differ by more than 0.8 percent air by volume of concrete, a referee air content test of fresh concrete must be conducted by a third party, designated by the Engineer but independent of the project, prior to commencement or continuation of concrete placement in efforts to resolve issues associated with non-correlation.

C. Laboratory Facilities. The testing laboratory with responsibility for acceptance testing on this project is the Department testing laboratory, or a qualified facility under the authority of the Engineer.

2. QA Sampling and Testing. The Engineer will verify the Contractor's daily startup sampling and testing of temperature, slump, and air content of fresh concrete on the first load; conduct QA sampling and testing; monitor Contractor adherence to the QC plan; and inspect field placed materials in such a manner as to ensure that all concrete for the project is represented. The testing correlation requirements of subsection d.1.B of this special provision must be met prior to concrete placement.

The following *ASTM* test methods will apply. The Department's established procedures for sampling and testing are acceptable alternatives.

C 31 Practice for Making and Curing Concrete Test Specimens in the Field

C 39 Test Method for Compressive Strength of Cylindrical Concrete Specimens

C 78 Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)

C 138 Test Method for Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete

C 143 Test Method for Slump of Hydraulic-Cement Concrete

C 172 Practice for Sampling Freshly Mixed Concrete

C 173 Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

C 231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

C 293 Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)

A. Lot Size and Make Up. A production lot will not include more than one grade of concrete, concrete of the same grade having different specified slump or air content, or concrete of the same grade having different mix designs, or JMFs. Lot size and makeup will be determined by the Engineer, based on site conditions. A production lot may consist of a single day's production, individual concrete structural elements (eg. footing, column, pier cap, deck, bridge approach slab), or any combination thereof, provided they are of the same JMF. Each production lot will be divided into sublots of approximately equal size, as determined by the Engineer. The minimum number of sublots will be one per production lot, with the maximum number of sublots based on the anticipated total quantity of concrete to be placed and site conditions. A minimum of one sublot will be required for each day of production.

B. Sampling. QA sampling and testing will be conducted by the Engineer during concrete placement. Where practical, the random number method (as described in the "Random Sampling for Quality Control/Quality Assurance Projects" section of the Materials Quality Assurance Procedures Manual) will be used to determine the sampling locations. The sampling rate will be determined by the Engineer, based on the anticipated total quantity of concrete to be placed and site conditions, with a minimum of one sampling for each day of production.

At the option of the Engineer, small incidental quantities as defined in subsection a.1 of this special provision may be accepted (visually inspected and noted on the Inspector's Daily Report) without daily 28-day compressive strength QA test specimens provided there is a current acceptable strength test history of the JMF for the project prior to placement of the small incidental quantity. One set of compressive strength QA test specimens will then be molded for each small incidental quantity JMF at least once per week during production, thereafter, as determined by the Engineer (note the test results or identification number for the corresponding weekly QA compressive strength test result on the Inspector's Daily Report for each small incidental quantity). Quality control testing and daily QA testing for temperature, slump, and air content of fresh concrete are still required. Reduced QC for small incidental quantities, as described in subsection c.5.G of this special provision, may be considered.

The QA sampling rate and sample location will be based on cubic yard quantities.

Samples for acceptance will be taken at the point of discharge from the haul unit, at approximately the middle one-third of the load. Mix adjustments to the concrete contained within the haul unit selected for QA sampling and testing (beyond normal QC) will not be permitted prior to QA sampling and testing. QA sampling will be random and without prior notification.

The Engineer will perform QA sampling and testing for air content loss of fresh concrete that is either slipformed or pumped, (1) at least once during each day of production, (2) whenever the concrete pump is relocated, where applicable, or (3) whenever there is a significant change in the boom configuration or operation of the concrete pump, or there is a significant change in the characteristics of the paving operation during concrete placement. Concrete will be sampled from a representative haul unit immediately after its discharge but before the slipform paver or pump hopper, where applicable. The concrete representing the same haul unit will then be sampled and tested after the slipform paver or after discharge from the pump (without interruption or alteration of the pumping operation), where applicable. If the difference in measured air content between the two test locations for the same concrete is greater than 1.5 percent air by volume of concrete, the Engineer will issue a Notice of Non-Compliance with Contract Requirements (Form 1165), as described in subsection d.2.D of this special provision. The Contractor may resume concrete placement only after the necessary corrective action is taken to reduce the loss in air content of fresh concrete between the two test locations, as approved by the Engineer. Document the corrective action that was taken by the Contractor.

C. Testing. The location(s) within the project limits for QA testing of the fresh concrete and placement of curing facilities for initial curing of the 28-day compressive strength QA test cylinders will be determined by the Engineer in conformance with the following criteria:

- (1) The elapsed time between obtaining the first and the final portion of the composite sample must not exceed 15 minutes.
- (2) Testing for slump, temperature, and air content of fresh concrete must begin within 5 minutes after obtaining the final portion of the composite sample.
- (3) Molding of the 28-day compressive strength QA test cylinders must begin within 15 minutes after obtaining the final portion of the composite sample.

- (4) The concrete sample must be protected from the sun, wind, and other sources of rapid evaporation, and from contamination.

Two QA concrete strength test specimens per sample will be molded for 28-day compressive strength QA testing.

The Contractor will provide curing facilities equipped to ensure the proper environment for the Agencies QA concrete strength test specimens during initial cure. Each initial cure facility must provide ventilation or insulation, where applicable, to ensure the ambient temperature surrounding the specimens is maintained according to *AASHTO T23/ASTM C 31*. Failure by the Contractor to maintain the proper curing environment during initial cure will not be basis for rejection of samples or claims against the Department. Each initial curing facility must be capable of being locked, using an Department provided padlock. The Contractor will ensure that all initial curing facilities are accounted for at all time, and protected against theft and damage. The Contractor will place and secure each initial cure facility throughout the project limits in such a manner so as to minimize excessive transport of the test specimens prior to initial cure, as follows:

- (5) Immediately after finishing molded specimens, the Engineer will move the QA concrete strength test specimens to the closest initial cure facility provided by the Contractor.

- (6) Immediately after all QA concrete strength test specimens are placed into the cure facility and the proper initial curing conditions have been established, the Engineer will secure the facility using the Department provided padlock. Access to the QA concrete strength test specimens, thereafter, must be coordinated with the Engineer and will only be permitted in the presence of the Engineer.

- (7) The Engineer will transport the QA concrete strength test specimens within 48 hours after molding, but not prior to 8 hours after final set of the concrete, from the initial curing facility to the Department's designated testing laboratory for final curing and strength testing. The specimens will be protected with a suitable cushioning material to prevent damage from jarring during transport. The total transportation time must not exceed 4 hours prior to commencement of final curing.

**D. QA Stop Production Criteria.** The Engineer will issue a Notice of Non-Compliance with Contract Requirements (Form 1165) and concrete production must stop when one or more of the following are observed.

- (1) The QA testing shows that one or more of the suspension limits for quality characteristics defined in Table 2 are in non-compliance.

- (2) The QC plan is not being followed.

- (3) Segregation, excessive slumping of unsupported slipformed edges, or other notable changes in the fresh concrete properties is observed that may prevent proper placement, consolidation and finishing, or compromise the performance or long-term durability of the finished product.

- (4) The required curing system is not being applied in a timely manner, as specified by the contract.

(5) If the measured air content loss between the two testing locations for the same concrete is greater than 1.5 percent air by volume of concrete as described in subsections c.5.E and d.2.B of this special provision.

(6) If the air content of fresh concrete is less than 5.0 or greater than 9.0 percent after pump or paver, regardless of the recorded QC or QA air content loss through the pump or paver.

The Engineer will issue a Notice to Resume Work (Form 1165) only after all necessary adjustments are made to restore conformance with all applicable specifications, and the appropriate documentation is made in the QC records.

**E. QA Records.** The Engineer will maintain a complete record of all QA tests and inspections. The records will contain, as a minimum, signed originals of all QA test results and raw data, random numbers used (where applicable) and resulting calculations. The QA test results will not be provided to the Contractor until the corresponding QC test results are received by the Engineer.

**3. Quality Index Analysis.** The Engineer's QA test results will be used to determine the pay factor (PF) and price adjustment (ADJ). The Contractor's QC test results will not be used for pay factor and price adjustment analysis. The Engineer will complete pay factor and price adjustment analysis within 7 working days after completion of all 28-day compressive strength testing for the representative production lot or quantity of concrete. The quality index parameter specification limits are defined in Table 3. Unless otherwise specified in the contract, concrete not conforming to the requirements specified in Table 3 is rejectable and subject to further evaluation. All values of PF and OLPF in these formulae are decimal, not percent. All values of PF and OLPF are rounded to two decimal places.

Price adjustment for 28-day compressive strength deficiencies will be based on test results for the corresponding weekly QA test specimens and the pay factor (PFs) calculated according to the formula defined in subsection d.3.A. The price adjustment (ADJ) = (PFs – 1)(Price).

**Table 3: Quality Index Parameter Specification Limits**

Quality Characteristic	Specification Limits
Air Content of Fresh Concrete (percent)	5.5 – 8.5
Rejection Limit (percent)	<5.0 or >9.0
Conc. Temp. (deg. F)	45 - 90 at time of placement
Slump (max.) (inch)	See Table 1, footnote (g)
28-day Compressive Strength (psi)	For LSL see Table 1
Rejection Limit - 28-day Compressive Strength	See Table 1

**A. Pay Factor for 28-Day Compressive Strength (PFs).**

$$PFs = \frac{\text{Tested Strength}}{LSL}$$

Where:



PFs = Pay Factor for 28-day compressive strength (not to exceed 1.00)

Tested Strength = QA 28-day compressive strength sample test result

LSL = Lower specification limit (see Table 1)

If the tested strength does not meet the rejection limit specified in Table 1, the Engineer will require additional evaluation as described in subsection d.4 of this special provision.

B. Pay Factor for Air Content of Fresh Concrete (PFac). The pay factor for air content of fresh concrete (PFac) will be according to Table 4.

**Table 4: Air Content of Fresh Concrete Pay Factor (PFac)**

Air Content of Fresh Concrete (percent)	Pay Factor (PFac)
5.5 – 8.5	1.00
5.0 – 5.4	0.50
Below 5.0	Rejection
8.6 – 9.0	0.75
Above 9.0	Rejection

If the air content of fresh concrete is below 5.0 or above 9.0 percent, the Engineer will elect to do one of the following.

(1) Require removal and replacement of the entire quantity of concrete represented by the test with new testing conducted on the replacement concrete and repeat the evaluation procedure.

(2) Allow submittal of a corrective action plan for the Engineer's approval. If the Engineer does not approve the plan for corrective action, subsection d.3.B.(1) of this special provision will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

C. Overall Lot Pay Factor (OLPF). The following formulae are used to calculate the OLPF and ADJ. The OLPF will not exceed 1.00.

$$\text{OLPF} = (0.60 \times \text{PFs}) + (0.40 \times \text{PFac})$$

$$\text{ADJ} = (\text{OLPF} - 1)(\text{Price})$$

ADJ = Price adjustment per pay unit to be applied to the quantity represented by the QA test

Price = Base price established for the pay item

4. Evaluation of Rejectable Concrete. The Engineer will require additional evaluation to decide what further action may be warranted, as described below. Acceptance for air content of fresh concrete will be based on QA test results reported at the time of concrete placement.

If the Engineer determines that non-destructive testing (NDT) is appropriate, this work will be

done by the Contractor in the presence of the Engineer within 45 calendar days from concrete placement. All costs associated with this work will be borne by the Contractor. A complete set of non-destructive tests must be conducted (in accordance with the respective standard test method) at a minimum three randomly selected locations. If NDT is used to estimate the in-situ strength, a calibrated relationship between the project JMF under evaluation and the NDT apparatus must have been established prior to NDT testing according to its respective standard test method.

If the 28-day compressive strength QA test results show that the rejection limit (as specified in Table 1) has not been achieved, the quantity of concrete under evaluation will be rejected and the Engineer will require additional evaluation to decide what further action may be warranted.

Propose an evaluation plan and submit it to the Engineer for approval before proceeding. The results from NDT will be used only to decide what further action is required. This determination will be made by the Engineer, as follows:

A. For non-structural concrete. If no test result from non-destructive testing falls below the lower specification (LSL) 28-day compressive strength, the represented quantity of concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PFs) of 1.00 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations according to subsection d.3 of this special provision.

B. For structural concrete (including overhead sign foundations). If no test result from non-destructive testing falls below the lower specification limit 28-day compressive strength, the represented quantity of concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PFs) of 0.85 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations according to subsection d.3 of this special provision.

C. If one or more of the non-destructive test results fall below the lower specification limit (LSL) 28-day compressive strength, the Engineer may elect to do one of the following:

(1) Require removal and replacement of the entire rejected quantity of concrete, including new initial tests for pay factor (PF) determination and price adjustment conducted according to subsection d.3 of this special provision.

(2) Allow the Contractor to submit a plan for corrective action, for the Engineer's approval, to address the disposition of the rejected concrete. If the Engineer does not approve the plan for corrective action, subsection d.4.C.(1) of this special provision will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

(3) Allow the in-situ quantity of concrete under evaluation to remain in place and a pay factor (PFs) of 0.50 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations according to subsection d.3 of this special provision.

**e. Measurement and Payment.** If a price adjustment is made for reasons included in this special provision, that adjustment will be made using the base price established for the specific item. If a contract unit price requires adjustment for other reasons not described in this special provision, the adjustments will be made using the unit price and the adjustments will be

cumulative.

Separate payment will not be made for providing, implementing, and maintaining an effective QC program. All costs associated with this work will be included in the applicable unit prices for the concrete items. Failure by the Contractor to maintain the proper curing environment during initial cure will not be basis for claim against the Department.

All costs associated with providing, locating, relocating, maintaining, and securing the adequate number of portable initial curing facilities for both the QC and QA strength test specimens will be included in the applicable unit prices for the concrete items. No additional payment will be permitted. The Contractor is responsible for damage, theft, subsequent replacement, and removal after completion of the work for each curing facility used on the project.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**CURB RAMP OPENING, CONCRETE**

DES:CAL

1 of 1

APPR:MB:DBP:04-10-17

APPR FHWA:04-17-17

**Add the following new subsection 803.03.I, on page 543 of the Standard Specifications for Construction:**

**I. Curb Ramp Opening.** Construct curb ramp openings in accordance with subsection 802.03 of the Standard Specifications for Construction, Standard Plan R-28 Series and as required to conform with the associated sidewalk ramp geometry (counter slope, running slope, cross slope, flares, widths, etc.).

**Add the following pay item to the pay item listing in subsection 803.04, on page 544 of the Standard Specifications for Construction:**

Curb Ramp Opening, Conc .....Foot

**Delete the second paragraph of subsection 803.04.C, on page 544 of the Standard Specifications for Construction in its entirety and replace with the following:**

The unit price for **Sidewalk Ramp, Conc, \_\_ inch** includes the cost of landings, monolithic rolled curbs or side flares along the longitudinal edges of the ramp or landing, and transitions to existing sidewalk.

**Add the following new subsection 803.04.G, on page 545 of the Standard Specifications for Construction:**

**G. Curb Ramp Opening, Conc.** The Engineer will measure **Curb Ramp Opening, Conc.** in place along the joint of the curbing with the pavement including transitions to and from adjacent standard full height curb and gutter cross section.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
SIGN PANEL TYPES

SGN:AJU

1 of 1

APPR:MWB:CRB:07-06-15

FHWA:APPR:07-14-15

**Delete the first two rows of the Sign Panel portion of Table 919-1 in subsection 919.02, on page 880 of the Standard Specifications for Construction, in its entirety and replace with the following:**

I	Aluminum Extruded Sections	Height > 48 inch or Width > 120 inch
II	Plywood	Height = 48 inch and Width = 24 inch From Height ≥ 36 inch and width ≥ 36 inch Up to Height ≤ 48 inch or Width ≤ 120 inch

**Delete the fourth row of the Sign Panel portion of Table 919-1 in subsection 919.02, on page 880 of the Standard Specifications for Construction, in its entirety and replace with the following:**

IV	0.040 inch Aluminum Sheet (a)	Overlay
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**Add the following row to the bottom of the Sign Panel portion of Table 919-1 in subsection 919.02, on page 880 of the Standard Specifications for construction:**

V	0.125 inch Aluminum Sheet (a)	48 inch by 48 inch and as shown in SIGN-100 Series
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MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PERMANENT PAVEMENT MARKINGS

PMK:MKB

1 of 3

APPR:MWB:CRB:02-05-19

FHWA:APPR:02-21-19

**Add the following to the end of the list of materials in subsection 811.02, on page 588 of the Standard Specifications for Construction:**

Modified Urethane Pavement Marking Material .....	920
Preformed Thermoplastic Pavement Marking Material .....	920

Ensure preformed thermoplastic materials for surface applications have a thickness of 90 mils and preformed thermoplastic materials for recessed applications have a thickness of 125 mils.

**Add the following paragraph after the first paragraph of subsection 811.03.B, on page 589 of the Standard Specifications for Construction:**

If pavement marking plan sheets and/or Witness, Log are included in the project the markings will be laid out by the Contractor prior to the permanent markings being applied. Layout is considered incidental to placement of permanent pavement markings. Provide the Engineer documented notice at least 2 calendar days prior to the Contractor pavement marking crew arriving onsite to layout and place the permanent pavement markings to enable the Engineer or a representative being onsite for review of the layout prior to the marking application. Notify the Engineer if it is discovered during layout that the pavement width or geometry has been altered or is different from the planned or logged configuration. The Contractor and Engineer will discuss and document the resolution for marking layout in such areas. If pavement marking plans and/or Witness, Log are not in the project, it is the responsibility of the Engineer to provide layout for the permanent pavement markings.

**Add the following rows to Table 811-1 of subsection 811.03.B, on page 591 of the Standard Specifications for Construction:**

Polyurea	20	Binder (gal)	5.5	8.25	11	17	22	33	44	66
		Bead (lb)	As directed by the manufacturer							
Modified Urethane	20	Binder (gal)	5.5	8.25	11	17	22	33	44	66
		Bead (lb)	As directed by the manufacturer							

**Add the following paragraph after the fifth paragraph on page 592 of subsection 811.03.B, of the Standard Specifications for Construction:**

Beads are not to be placed in liquid shadow markings.

**Add the following subsections after the last paragraph of subsection 811.03.D.7.c, on page 595 of the Standard Specifications for Construction:**

8. **Modified Urethane.** Ensure the pavement is free of excess surface and subsurface moisture that may affect bonding. The Engineer will not decide the suitability of specific days for the application of modified urethane.

Surface preparation requirements for special, and longitudinal modified urethane pavement markings depend on surface conditions.

Prepare new HMA surfaces and HMA surfaces open to traffic for 10 days or less with no oil drips, residue, debris, or temporary or permanent markings, by cleaning the marking area with compressed air.

Prepare new PCC surfaces and PCC surfaces free of oil drips, residue, and debris, temporary, or permanent markings, by removing the curing compound from the area required for pavement markings.

Prepare existing HMA or PCC surfaces that do not have existing markings, but may have oil drip areas, debris, or both, by scarifying the marking area using non-milling grinding teeth or shot blasting. The Engineer will allow the use of water blasting to scarify the marking area on PCC surfaces.

Prepare existing HMA or PCC surfaces with existing pavement markings and that may have oil drip areas, debris, or both, by using the following methods:

- a. For existing liquid pavement markings, scarify the proposed marking area using non-milling grinding teeth or shot blast. Occasionally existing liquid pavement markings will require complete removal, which will be determined by the Engineer.
  - b. For existing cold plastic markings, completely remove the existing markings.
9. **Preformed Thermoplastic.** Ensure the pavement is free of excess surface and subsurface moisture that may affect bonding. The Engineer will not decide the suitability of specific days for the application of preformed thermoplastic.

Heat and apply the preformed thermoplastic material as recommended by the manufacturer. Feather all edges of the material with a putty knife while the preformed thermoplastic is still soft.

**Modify the following row in Table 811-2 of subsection 811.03.D, on page 596 of the Standard Specifications for Construction to read as follows:**

Thermoplastic	50	50	May 1	Nov. 1
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**Add the following rows to Table 811-2 of subsection 811.03.D, on page 596 of the Standard Specifications for Construction:**

Modified Urethane	40	40	Apr. 15	Nov. 15
Preformed Thermoplastic	35	35	Apr. 15	Nov. 15

**Add the following pay items to the list of pay items in subsection 811.04, on page 598 of the Standard Specifications for Construction:**

Pavt Mrkg, Modified Urethane, (symbol).....	Each
Pavt Mrkg, Modified Urethane, (legend) .....	Each
Pavt Mrkg, Modified Urethane, __ inch, Crosswalk.....	Foot
Pavt Mrkg, Modified Urethane, __ inch, Stop Bar .....	Foot
Pavt Mrkg, Modified Urethane, __ inch, Cross Hatching, (color).....	Foot
Pavt Mrkg, Modified Urethane, __ inch, (color).....	Foot
Pavt Mrkg, Ovly Cold Plastic, __ inch, Shadow Tape, Black.....	Foot
Pavt Mrkg, Ovly Cold Plastic, __ inch, Wet Reflective, (color) .....	Foot
Pavt Mrkg, Preformed Thermoplastic, (symbol).....	Each
Pavt Mrkg, Preformed Thermoplastic, (route) Route Shield, __ foot by __ foot.....	Each
Pavt Mrkg, Preformed Thermoplastic, (legend).....	Each
Pavt Mrkg, Preformed Thermoplastic, __ inch, Crosswalk.....	Each
Pavt Mrkg, Preformed Thermoplastic, __ inch, Stop Bar .....	Foot
Pavt Mrkg, Preformed Thermoplastic, __ inch, Cross Hatching, (color).....	Each
Pavt Mrkg, (binder), __ inch, Shadow Liquid, Black.....	Foot
Pavt Mrkg, Wet Reflective Waterborne, 2nd Application, __ inch, (color).....	Foot



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**MOBILE ATTENUATOR**

OFS:CGB

1 of 4

APPR:CT:CRB:04-19-13  
FHWA:APPR:05-09-13

**a. Description.** This special provision sets the guidelines for when mobile attenuators are to be used to protect workers or work equipment from vehicular traffic. Throughout this special provision, mobile attenuators refer to truck mounted attenuators (TMA) and trailer mounted attenuators.

Use mobile attenuators in projects to protect personnel or equipment when one or more of the following conditions are met.

- The vehicle is designated as a protective vehicle (shadow vehicle or barrier vehicle) as part of the maintenance of traffic typicals, maintenance of traffic plans, or other contract documents.
- Aerial work is being performed on scaffolding, lifts, hoists, bucket trucks, etc., where workers using this equipment are in an occupied lane or shoulder and not protected by temporary concrete barrier. Mobile attenuators are not intended to be used for the removal, installation or maintenance of traffic signals.
- Mobile/short duration operations such as pavement marking convoys, grinding in rumble strips, permanent sign installations, luminescent installations, etc. Mobile attenuators are not intended to be used for the removal or installation of special markings.

Mobile attenuators cannot be mounted on the vehicle or equipment used by personnel to complete aerial work. Mobile attenuators cannot be used as a temporary/permanent barrier ending except during replacement of damaged temporary/permanent barrier ending. In the event that a mobile attenuator is used as a temporary safety measure for a damaged temporary/permanent barrier ending, the maximum length of time that it can be used for this purpose is 48 hours or as approved by the Engineer.

1. **Stationary and Mobile Operation.** This work consists of furnishing a vehicle with the required gross vehicle weight as shown in the tables below and furnishing, installing and operating a mobile attenuator according to the manufacturer's recommendations, the contract, and/or as directed by the Engineer. Locate the attenuator placement as detailed in the applicable maintaining traffic typical, maintenance of traffic plans or other contract documents.

Securely attach material loaded onto the vehicle to obtain the required gross weight, for transport or during work operations to the vehicle. Hazardous materials will not be allowed on this vehicle. Materials that will be off loaded and incorporated into the construction activities will not be considered part of the vehicle gross weight.

**b. Materials and Design.** Use mobile attenuators that meet or exceed the requirements of *National Cooperative Highway Research Program Report 350 (NCHRP 350) Test Level 2 (TL-2) or Test Level 3 (TL-3)*, or *Manual for Assessing Safety Hardware (MASH) TL-2 or TL-3*, as described below for work zone traffic control devices.

1. Utilize a mobile attenuator rated for *NCHRP 350, TL-2* or *MASH, TL-2* on non-freeway roadways with a normal posted speed of 40 miles per hour (mph) or less. TL-2 mobile attenuators are prohibited for use on all freeways, non-freeway roadways, and work zones with posted speed limits of 45 mph or greater.

2. Utilize a mobile attenuator rated for *NCHRP 350, TL-3* or *MASH, TL-3* on freeways, non-freeway roadways and work zones with posted speed limits of 45 mph or greater. TL-3 mobile attenuators may be used on all roadways and work zones regardless of the posted speed limit.

Supply to the Engineer a copy of the FHWA letter of eligibility for federal aid stating the mobile attenuator meets the appropriate *NCHRP 350* or *MASH* test level specified in the above stated criteria. In addition, supply a letter to the Engineer stating the mobile attenuator system has been installed and maintained according to manufacturer's specifications.

The face of the mobile attenuator, visible to approaching traffic must have reflectorized alternating yellow and black stripes, sloping downwards in both directions from the center of the attenuator.

**c. Operating Details and Utilization.** Operate the mobile attenuator as per manufacturer's recommendation, the contract, and/or as directed by the Engineer. This includes, but is not limited to, the following:

- Ensure the height from the bottom of the mobile attenuator to the roadway surface is 12 inches ( $\pm 2.5$  inches) and within manufacturer's specifications.
- Ensure the mobile attenuator is parallel (level) with the roadway surface.
- Provide a shoulder harness and headrest for the mobile attenuator vehicle's operator.

For stationary operations, when operating the vehicle with the attenuator installed, ensure the vehicle is in second gear if it has a standard transmission (park if an automatic transmission), with the parking brakes set and steering wheels turned away from the work area and traffic, if possible. Place the mobile attenuator according to roll-ahead distance in Tables 1 or 2.

If the mobile attenuator is involved in a crash, supply pictures of the crash scene and the damage of the mobile attenuator to the Engineer within 3 days of the incident.

**d. Measurement and Payment.** Mobile attenuators will be furnished and operated at no cost to the Department for all contract items associated with pavement marking operations.

The cost for the equipment, mobilization and labor to furnish and operate this equipment will be included in other contract items. The Department will pay for repair or replacement of a mobile attenuator called for as part of the pavement marking operations if damaged by something other than the Contractor's own equipment, during contract operations as described below.

Measurement and payment for the use of mobile attenuators on all other contract items will be as described below.

**Pay Item****Pay Unit**

Mobile Attenuator .....Each

The Engineer will pay for the maximum number of mobile attenuators deployed per the maintenance of traffic typicals, maintenance of traffic plans or other contract documents and in use at any one time during the life of the project or as approved by the Engineer. If the Contractor uses alternative construction operations or methods that require additional mobile attenuators that exceed the amount specified in the contract, the additional mobile attenuators will be provided at the Contractor's expense.

The Department will pay for repair or replacement of a mobile attenuator called for as part of the contract if damaged by something other than the Contractor's own equipment, during contract operations by contract modification with the name of the extra pay item to be defined as Mobile Attenuator, Repair or Mobile Attenuator, Replace if the following criteria are met:

1. The damaged or destroyed attenuator must meet all of the manufacturing and operating criteria of this special provision.
2. The Contractor must have the repaired/replaced attenuators inspected by the Manufacturer/Supplier to insure that the units are in good working order. Documentation of the inspection is to be provided to the Engineer prior to implementing the mobile attenuators for use.
3. Provide a crash report from the enforcement agency involved in the accident investigation.
4. Pictures of the accident scene and damage to the mobile attenuator are forwarded to the Engineer.
5. The attenuator repair or replacement will be for the actual unit as required by this special provision. The cost to perform the repairs or replace the attenuator including installation will be paid for by the Contractor. Provide to the Engineer a detailed invoice from the Supplier showing material costs for replacement or repair for payment. The repair or replacement cost must not exceed the Suppliers invoice cost for a new attenuator.
6. The Department will not pay for any costs that are required to replace or repair the attenuator vehicle and any other items which were used to operate the attenuator.
7. Attenuators that have been repaired or replaced as part of the contract are not eligible for additional payment using the Mobile Attenuator pay item once the attenuator is put back into service.

**Table 1. Guidelines For Roll-Ahead Distance For Mobile Attenuator Vehicles Test Level 2**

Weight of Mobile Attenuator Vehicle (Minimum)	Posted Speed (mph) (Posted Speed Prior to Work Zone)	Roll Ahead Distance(a) (Distance from front of Mobile Attenuator Vehicle to Work Area)
5.5 Tons (Stationary Operation)	40 or Less	25 feet
a. Roll ahead distances are calculated using a 4,410 pound impact vehicle weight.		

**Table 2. Guidelines For Roll-Ahead Distance For Mobile Attenuator Vehicles Test Level 3**

Weight of Mobile Attenuator Vehicle (Minimum)	Posted Speed (mph) (Posted Speed Prior to Work Zone)	Roll-Ahead Distance(a) (Distance from front of Mobile Attenuator Vehicle to Work Area)
5 Tons (Mobile Operation)	60-70	175 feet
	50-55	150 feet
	45	100 feet
12 Tons (Stationary Operation)	60-70	50 feet
	50-55	25 feet
	45	25 feet
a. Roll ahead distances are calculated using a 10,000 pound impact vehicle weight.		

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
TRAFFIC CONTROL QUALITY AND COMPLIANCE

OPR:JJG

1 of 2

APPR:CER:DBP:01-20-11  
FHWA:APPR:06-20-11

**Delete the subsection 812.03.C, Deficient Traffic Control Operations on page 601 of the Standard Specifications for Construction in its entirety, and replace with the following.**

**C. Deficient Traffic Control Operations.**

**1. Traffic Control Quality and Compliance.** The following applies to all aspects of the traffic control plan and traffic control devices except the Type D lights on plastic drums which are covered elsewhere in the contract.

**a. Traffic Control not Anticipated in Design.** If at any time during the project, including the time during the seasonal suspension, the Engineer documents that the traffic control requires improvements beyond the scope of the Traffic Control Plan, the Engineer will provide written instructions to the Contractor and traffic control supplier what improvements are required. The Contractor must develop and submit to the Engineer for approval, a written implementation schedule for improvements. If the schedule is not approved, or if the schedule is approved but is not followed, the Department will adjust the contract according to subsection 812.03.C.1.c.iii. If the implementation schedule is not followed, the Engineer will notify the Contractor and traffic control supplier in writing that they are in violation of this subsection. The work of making traffic control improvements directed by the Engineer that are beyond the scope of the Traffic Control Plan will be paid for as extra work.

**b. As Designed Traffic Control.** If at any time during the project, including the time during the seasonal suspension, the Engineer documents that the traffic control is deficient, inadequate or improperly placed, the Engineer will provide written notification with instructions for corrective action to the Contractor and traffic control supplier. Upon receipt of the notification of corrective action, the Contractor has 4 hours to correct the traffic control. If the traffic control cannot be corrected within the 4 hour time period, the Contractor will develop a written implementation schedule for the corrective action and submit the schedule to the Engineer for approval within 1 hour of receiving the written notification. If the schedule is not approved, or if the schedule is approved but is not followed, the Department will adjust the contract according to subsection 812.03.C.1.c.iii. If the implementation schedule is not followed, the Engineer will notify the Contractor and traffic control supplier in writing that they are in violation of this subsection.

**c. Corrective Action.** The Engineer will give written notification to the Contractor as identified above. Failure to make corrections within the timeframe required may result in the following actions by the Engineer:

- i. Stop work on the project until the Contractor completes corrective action,
- ii. Order corrective action by others in accordance with subsection 107.07, subsection 108.02, subsection 812.03.B, and in the interest of public safety.
- iii. A contract price adjustment will be made in the amount of \$100 per hour for every hour or portion thereof the improvements or corrective action remains incomplete as described herein. If improvements or corrections have not been made to the satisfaction of the Department, the contract will be adjusted until the traffic control is acceptable.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
LIGHTING FOR NIGHT WORK SPECIFICATIONS

OPR:RAL

1 of 3

APPR:BMB:MB:02-02-18

FHWA:APPR:02-08-18

**Delete subsection 812.03.H, on page 619 of the Standard Specifications for Construction in its entirety and replace it with the following:**

**H. Lighting for Night Work.** Furnish, install, operate, maintain and replace, as needed, fixed, portable, or equipment mounted lighting systems that provide lighting to ensure worker and inspector safety on and around the worksite. Provide lighting that allows workers and inspectors to clearly conduct all operations and inspections during hours of darkness. Provided lighting systems must meet the requirements set forth in *MIOSHA Rule 408.40133 Illumination*, *MIOSHA Rule 408.42223 (7) Traffic Control*, section 706 of the Standard Specifications for Construction, and the contract.

Provide and position the lamps to meet the following lighting requirements: Provide a minimum illumination intensity of 10 foot-candles (108 lux) on a jobsite where construction work is being performed. Maintain a minimum of 5 foot-candles (54 lux) throughout the entire area of operation where workers may pass through on foot or are present but are not performing construction work. Vehicle or equipment headlights are not considered as an approved light source.

Lighting levels will be measured with an illuminance meter. Readings from smart-phones are not acceptable. Readings will be taken where the work is being performed, in a horizontal plane 3 feet above the pavement or ground surface. When necessary, provide additional lights to overlap the footprints of the lights so that the lighting requirements are continuous, and do not fall below the minimum lighting requirements throughout the work area.

Submit a "work area lighting plan" to the Engineer for review for approval a minimum of 14 calendar days prior to the start of work. The Engineer will have 7 calendar days to review the plan for approval or provide comments for plan revisions required to obtain approval. At a minimum, the plan must include the proposed lighting locations for construction equipment, vehicles and pedestrian paths, identification of a person or persons of authority (including contact information) on the project site responsible to execute the plan requirements, and measures that will be taken to ensure compliance with the plan. All costs and any additional time required to obtain an approved "work area lighting plan" will not be cause for delay or impact claims.

Design and operate the lighting system to avoid glare that interferes with traffic, workers, or inspection personnel. Aim flood, spot or stadium type luminaries downward at the work and rotated outward no greater than 30 degrees from nadir (straight down). Position balloon lights at least 12 feet above the roadway.

Design the lighting system to light the work area without spilling over to adjoining property. Modify the lighting system, if directed by the Engineer, by rearranging the lights or adding hardware to shield the lights when the lighting system is disturbing adjoining properties.

Provide a power source that adequately powers the lamps to their full capacity. Provide all lighting equipment in good operating condition and in accordance with applicable safety and design codes.

Provide backup lighting to replace lights and equipment during nighttime operations. Store the backup equipment on the project site and have it available for use at all times during the nighttime operations. The backup systems must meet the same criteria as the primary system.

Drive through and observe the lighted area from all traveled directions, including cross roads after initial lighting set up to determine the adequacy of placement and potential for glare. Adjust lighting alignment if necessary. Ensure that the alignment of the lighting does not interfere with or impede traffic on open roadways.

At any time during the course of the nighttime work, should the lighting not meet the requirements of this special provision, the work must be halted until adequate lighting is provided. This suspension of work will be at no additional cost to the Department and the Contractor cannot receive an extension of time to complete the work.

Use balloon lighting for nighttime traffic regulating operations. Position the balloon lighting for traffic regulators so that the light illuminates the front of the traffic regulator without casting a shadow on the front of the regulator, the light or equipment does not impair the regulator's vision, and the equipment does not impede the regulator's escape path. Position the lighting so that the light does not wash out the lighted arrow at the regulator's station and does not obscure the lighted arrow. Position lighting so that it does not create glare or shine directly in the eyes of oncoming drivers. Illuminate the traffic regulator's station with a minimum illumination intensity of 10 foot-candles (108 lux). Lighting devices used to illuminate nighttime traffic regulator operation that have failed or have been damaged are to be replaced immediately.

Mount the light fixtures on the construction equipment in a mobile operation, in such a way that the view of the equipment operator is not obstructed and a secure connection to the equipment is ensured, with minimum vibration.

Provide each paver with the minimum illumination as specified in this special provision so that the operator and paving crew can clearly see the material going into the hopper, the auger area, and for alignment. Provide a continuous power source to ensure the lighting is in operation at all times during work. The light should be adjustable up and down, and rotatable horizontally. The area behind the paver must be lighted so the work and operations can be seen clearly and inspected properly.

Equip each roller with four headlights, two facing in each direction of travel. Turn headlights off when facing oncoming traffic and only use them when moving equipment from one location to another.

Provide a continuous power source on each roller with a light tower. The light tower must be a minimum of 4 feet higher than the roller.



When light equipment is not in use, it must be removed from the work area.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PRICE ADJUSTMENTS FOR AUTHORIZED EXTENSIONS OF TIME

CFS:MB

1 of 2

APPR:JJG:CRB:02-01-18

FHWA:APPR:02-02-18

Delete section 812.04.U, Price Adjustments for Authorized Extensions of Time, on page 631 and 632 of the Standard Specifications for Construction in its entirety and replace with the following.

**U. Price Adjustments for Authorized Extensions of Time.** The Department will not adjust the unit price for **TS, Temp, Furn** for authorized extensions of time.

The Department will not make price adjustments for temporary traffic control devices, **Minor Traf Devices**, and **Traf Regulator Control** during authorized extensions of time if liquidated damages are assessed in accordance with subsection 108.10. If liquidated damages are not assessed, the Department will adjust unit prices for the following:

1. **TS, Temp, Oper;**
2. **PTS System, Temp, Oper;**
3. Items designated as Furnished, Operated, or Standby, unless otherwise specified;
4. Items paid for as Each or Foot as documented by the Department and maintained on the Department website at:  
[http://www.michigan.gov/mdot/0,4616,7-151-9622\\_11044\\_11367---,00.html](http://www.michigan.gov/mdot/0,4616,7-151-9622_11044_11367---,00.html); and
5. Items measured as lump sum if they are used or required on the worksite during authorized extensions of time except that **Minor Traf Devices** will not be adjusted when conspicuity tape is the only minor traffic control device in service or required during the authorized extension of time.
6. Items not in use reserved by the Engineer as standby.

The Department will use the following formula to calculate the unit price adjustments. The adjustment for **Minor Traf Devices** will be at a daily rate of (A/B) not to exceed \$900.00 per calendar or work day and the adjustment for **Traf Regulator Control** will be at a daily rate of (A/B) not to exceed \$650.00 per calendar or work day. When calculating the adjustment, either calendar or working days will be used for both original contract time and additional days.

$(A/B) \times C = \text{unit price adjustment}$

Formula 812-1

where:

A = Original contract unit price

B = Original contract time

C = Additional days the item was in use or required to be on standby during the authorized extension of time.

The Department will determine the number of additional days the item is on standby or in use in calendar days.

For calendar date projects, the original contract time will be calculated as the number of calendar days from the actual start date to the following order of precedence date as identified within the contract:

- a. The latest Open to Traffic date if removal of all traffic control devices coincides with this date.
- b. The latest interim completion date for each season of work if all contract work must be completed in its entirety except turf establishment and watering and cultivating.
- c. The original contract completion date.

For work day projects if an authorized extension of time extends into the next construction season, including seasonal suspension periods during which a traffic control item is on standby or in use, the original contract time will be the calendar days between the first work day and the expiration of the original contract completion.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**PAYMENT FOR MINOR TRAFFIC DEVICES AND TRAFFIC REGULATOR CONTROL**

OPR:JJG

1 of 1

APPR:BJO:DBP:07-19-11

FHWA:APPR:07-19-11

**Delete Table 812-1 in subsection 812.04.E, on page 625 of the Standard Specifications for Construction, in its entirety and replace with the following.**

**Table 812-1 Partial Payment Schedule for Minor Traf Devices and Traffic Regulator Control**

Percent of Original Contract Amount Earned	Total Percent of Unit Price Paid
First Use	15
25	30
50	55
75	80
90	100

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**SIGN, TYPE B, TEMPORARY, PRISMATIC, SPECIAL**

COS:CRB

1 of 2

APPR:MWB:CGB:04-29-19  
FHWA:APPR:05-07-19

**a. Description.** This work consists of fabricating, placing, maintaining, removing, and/or relocating the Type B, Temporary, Prismatic, Special signs identified in the proposal or on the plans. The signs have non-standard legends and may be project specific.

**b. Materials.** Use prismatic grade reflective sheeting, as described in section 922 of the Standard Specifications for Construction.

Ensure all temporary signs meet the specifications in subsection 812.03.D.1 of the Standard Specifications for Construction and be approved by the Engineer prior to use.

Route markers or overlays used in the fabrication or modification of Type B, Temporary, Prismatic, Special signs must either be directly applied to the Type B, Temporary, Prismatic, Special sign face or be fabricated utilizing Type III or Type IV substrate as defined in section 919 of the Standard Specifications for Construction. Overlays or route markers fabricated with Type II substrates are prohibited.

**c. Construction.** The Type B, Temporary, Prismatic, Special signs must meet the requirements for Sign, Type B, Temp, Prismatic, Furn and Sign, Type B, Temp, Prismatic, Oper as outlined in section 812 of the Standard Specifications for Construction.

Ensure Type B, Temporary, Prismatic, Special signs are not fabricated with vertical seams. Horizontal seams are not to cross through the sign legend.

Temporary Type IV substrate sign overlays may be used to modify the legends of Type B, Temporary, Prismatic, Special signs.

Install Type B, Temporary, Prismatic, Special signs on driven sign supports, in accordance with subsections 812.03, 919.04 and section 912 of the Standard Specifications for Construction, unless otherwise indicated on the plans, in the proposal or approved by the Engineer.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

Pay Item	Pay Unit
Sign, Type B, Temp, Prismatic, Spec, Furn .....	Square Foot
Sign, Type B, Temp, Prismatic, Spec, Oper .....	Square Foot

1. **Sign, Type B, Temp, Prismatic, Spec, Furn** will be paid for the same as described for the pay item Sign, Type \_\_, Temp, Prismatic, Furn in subsection 812.04.C of the Standard

Specifications for Construction. In addition, the pay item includes the fabrication of all initial route markers and overlays for the Type B, Temporary, Prismatic, Special signs.

2. **Sign, Type B, Temp, Prismatic, Spec, Oper** will be paid for the same as described for the pay item Sign, Type \_\_, Temp, Prismatic, Oper in subsections 812.04.D and 812.04.B of the Standard Specifications for Construction.

Payment for operated items also includes the removal of all portable or driven sign supports (including post stubs and ballast) used to install the Type B, Temporary, Prismatic, Special signs.

Payment for operated items will also include the installation and/or removal of all overlays used to modify portions of Type B, Temporary, Prismatic, Special signs as specified on the plans, in the proposal or required by the Engineer and includes all equipment and material necessary to install and/or remove the overlays as required for the life of the contract. When sign overlays, including different route markers, are used to modify portions of Type B, Temporary, Prismatic, Special signs, only the overlay will be paid for as additional square footage of **Sign, Type B, Temp, Prismatic, Spec, Furn.**

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**DELINEATION OF PORTABLE CHANGEABLE MESSAGE SIGN**

OFS:RAL

1 of 1

APPR:CRB:MB:05-01-18  
FHWA:APPR:05-02-18

**Delete subsection 812.03.D.15, on page 614 of the 2012 Standard Specifications for Construction, in its entirety and replace with the following:**

- 15. Portable Changeable Message Signs.** Use portable changeable message signs (PCMS) as required. Delineate the PCMS with three plastic drums or three 42 inch channelizing devices. If the PCMS is in use, rest the tires on the ground with wheel chocks or elevate the trailer, with the bottom of the tires above the ground. If a PCMS is not needed, turn it off and remove it from the clear zone in accordance with subsection 812.03.G.5.

The Department will allow use of PCMS for either advance time notification for future events including closures and planned maintenance work or information including detours or alternative routes during current events; incident management; construction zone backups; or similar conditions.

Do not use generic, non-emergency safety messages. If power to the PCMS is lost, use four corner flash mode (an asterisk in each corner of the board, flashing) as the default setting. Ensure message sequences consist of no greater than two messages with a 2-second display time for each message.

Do not use PCMS for the following:

- a. Replacing MMUTCD required static signing or pavement markings;
- b. Replacing a lighted arrow;
- c. Advance notice of new traffic signals or signs; or
- d. Advertising.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**SUPPORTS FOR TEMPORARY SIGNS**

OPR:CRB

1 of 1

APPR:MWB:DBP:06-26-12

FHWA:APPR:08-18-12

**Delete the last paragraph of subsection 812.03.D.3, on page 604 of the Standard Specifications for Construction in its entirety, and replace with the following.**

Mount construction signs on portable sign support standards only if signs are to remain in place for 14 days or less, or as allowed by the Engineer if fixed supports are not possible.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**SECURITY OF PORTABLE CHANGEABLE MESSAGE SIGNS**

OFS:CRB

1 of 1

APPR:LWB:DBP:10-09-13  
FHWA:APPR:10-09-13

**a. Description.** This work consists of making certain the portable changeable message sign (PCMS) is secure, and complies with the following:

1. Create unique usernames and passwords (not defaults) for access to the PCMS local controls.
2. Remove all literature (manuals, instructions, etc.) from the PCMS controller enclosure.
3. Use a padlock, keyed lock, etc to prevent access to the controller enclosure.
4. Provide the Engineer up to 3 keys, or the lock combination, as well as the usernames and passwords.
5. Provide at minimum, one classroom style training session of 2 hours, on PCMS field equipment, including but not limited to: posting and removal of messages, diagnosing field equipment malfunctions including messaging and communications errors. All training schedules, syllabus and materials are to be supplied by the Contractor and approved by the Engineer prior to delivery of training. Unless otherwise specified by the Engineer, the number of participants at each training session will be limited to a maximum of 20 individuals

MDOT reserves the right to take full messaging control of any PCMS at any time throughout the duration of the project. This includes posting any message determined to be appropriate by MDOT

MDOT may, at any time, inspect PCMS boards that are on site to verify that the security measures in this special provision are being followed.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**MEASUREMENT AND PAYMENT OF TEMPORARY TRAFFIC CONTROL DEVICES**

OFS:CRB

1 of 1

APPR:MWB:JJG:02-27-14

FHWA:APPR:03-04-14

**Delete subsection 812.04.A.4, on page 624 of the Standard Specifications for Construction in its entirety.**

**Delete the second paragraph of subsection 812.04.C, on page 624 of the Standard Specifications for Construction in its entirety, and replace with the following:**

The Engineer will measure **Sign, Type \_\_, Temp, Prismatic, Furn** as the total cumulative area of the maximum number of each sign legend that is in use during the course of the project unless previously paid. The unit price for **Sign, Type \_\_, Temp, Prismatic, Furn** includes the cost of portable or driven sign supports.

**Delete the second paragraph of subsection 812.04.D, on page 624 of the Standard Specifications for Construction in its entirety, and replace with the following:**

The Engineer will measure **Sign, Type \_\_, Temp, Prismatic, Oper** as the total cumulative area of the maximum number of each sign legend that is in use during the course of the project unless previously paid.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
TYPE III BARRICADES

DES:DBP

1 of 1

APPR:MWB:CRB:08-07-15  
FHWA:APPR:08-23-15

**Delete the first sentence for the second paragraph in subsection 812.03.D.8 on page 606 of the Standard Specifications for Construction, and replace with the following:**

Light Type III barricades with two, Type C or Type D warning lights, fastened to the uprights above the top rail, provided these warning lights each weigh 3.3 pounds or less.

**Delete the following pay items from the list in subsection 812.04 on page 622 of the Standard Specifications for Construction.**

Barricade, Type III, High Intensity, Furn.....	Each
Barricade, Type III, High Intensity, Oper .....	Each
Barricade, Type III, High Intensity, Double Sided, Furn .....	Each
Barricade, Type III, High Intensity, Double Sided, Oper .....	Each

**Renumber the existing subsection 812.04.A.5 on page 624 of the Standard Specifications for Construction, as follows:**

4. The manufacturer's invoiced cost for damaged equipment included in a lump sum pay item for maintaining traffic.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**TEMPORARY PAVEMENT MARKING REVISIONS**

COS:CGB

1 of 4

APPR:MWB:MKB:06-14-19

FHWA:APPR:06-26-19

**Delete subsection 812.03.D.11.a, on page 610 of the Standard Specifications for Construction, in its entirety and replace with the following:**

- a. **Temporary Pavement Marking - Wet Reflective Type R.** Use temporary wet reflective pavement marking Type R (removable tape) when temporary pavement markings must be placed on finished pavements and are not in the exact location as future permanent markings or at the discretion of the Engineer when temporary markings must be removed during the life of a project.

Ensure prior to installation the pavement surface is air blown or brushed to remove surface dust and dirt. Remove curing compound from new concrete surfaces before applying Type R Tape.

Place wet reflective Type R tape when it is used as a 4-foot dash or full-length skip line as defined in the contract to temporarily mark finished pavement prior to the placement of permanent markings in accordance with the manufacturer's specifications for existing temperature and pavement condition. Offset the dash or skip lines 1 foot from the permanent marking so that the permanent markings can be placed prior to the removal of the 4-foot dashes or full-length skip lines. Do not use 4-foot dashes or full-length skip lines to temporarily mark a solid edge line. Ensure damaged or missing tape of more than 2 consecutive skip lines is replaced within 24 hours after notification by the Engineer. Failure to replace the tape within the 24-hour time period may result in a contract price adjustment as described in 12SP-812C - Traffic Control Quality and Compliance.

- i. Between April 15 and November 1, place wet reflective Type R tape not used as a skip line in accordance with the manufacturer's specifications for existing temperature and pavement condition. Replace wet reflective Type R tape of more than 50 cumulative feet that fails within 24 hours after notification by the Engineer. Failure to replace the tape within the 24-hour time period may result in a contract price adjustment as described in 12SP-812C - Traffic Control Quality and Compliance.
- ii. From November 2 to December 1 and March 15 to April 14, place wet reflective Type R tape for all temporary shifts and tapers when pavement surfaces are dry and air temperatures are 40 degrees Fahrenheit (F) and rising. Ensure all wet reflective Type R tape placed during these times is placed during approved daytime hours negotiated between the Engineer and the Contractor or daytime hours required in the contract.

Do not place wet reflective Type R tape within 24 hours of predicted precipitation, or 24 hours after any precipitation. The Contractor will be paid to repair locations that fail during these times unless the Engineer determines the failure is due to improper

surface preparation, or failure to follow these requirements. Repairs, if required, will be paid for at a negotiated price between the Engineer and the Contractor for the associated work.

- iii. Use temporary wet reflective pavement marking Type NR paint, for all tapers and shifts when ambient air temperature is less than 40 degrees F. To remove the wet reflective Type NR paint, use the least abrasive technique as directed by the Engineer to minimize scarring. If the approved pavement marking removal pay item is not part of the contract, the cost of the removal of Type NR pavement markings will be negotiated between the Engineer and the Contractor.
- iv. Wet reflective Type R tape is not to be placed between December 2 and March 14.

**Delete subsection 812.03.D.11.b, on page 610 of the Standard Specifications for Construction, in its entirety and replace with the following:**

**b. Temporary Pavement Marking - Wet Reflective Type NR.**

- i. **Wet Reflective Type NR Paint.** Use temporary pavement marking Wet Reflective Type NR paint when temporary pavement markings must be placed on pavement to be removed or replaced during construction. It also must be used when temporary markings line up exactly with the placement of permanent markings and may be grooved out prior to recessing permanent markings. The temporary pavement marking material must be compatible with the material specified for the permanent markings if permanent markings are to be placed on top of temporary markings.

Place Wet Reflective Type NR paint in accordance with section 811. Place the material binder at a thickness of 18 mils while driving at a maximum rate of 8 miles per hour. Drop wet reflective optics and glass beads at a rate as recommended by the manufacturer for an approved wet reflective system. Ensure the proposed wet reflective optic is approved by the Engineer.

Place Wet Reflective Type NR paint, used as a 4-foot dash or full-length skip line as defined in the contract, to temporarily mark finished pavement prior to the placement of permanent markings, in the exact location as the permanent marking such that its removal is not necessary. Only use Wet Reflective Type NR markings compatible with the permanent pavement marking material specified on the project as a 4-foot dash or full-length skip line. Do not use 4-foot dashes or full-length skip lines to temporarily mark a solid edge line.

- ii. **Wet Reflective Type NR Tape.** Use temporary pavement marking Wet Reflective Type NR Tape as a 4-foot dash or full-length skip line as defined in the contract to temporarily mark a white skip line or yellow centerline on base or leveling course pavement. Wet Reflective Type NR tape must not be used to temporarily mark a solid edge line. Wet Reflective Type NR tape is not to be used on the wearing course of asphalt or on existing pavement. Place Wet Reflective Type NR tape in accordance with section 811.

**Delete the following pay items from the list of pay items in subsection 812.04, on page 623**

**of the Standard Specifications for Construction:**

Pavt Mrkg, Type R, 4 inch, (color), Temp .....Foot  
 Pavt Mrkg, Type NR, Tape, 4 inch, (color), Temp.....Foot  
 Pavt Mrkg, Type NR, Paint, 4 inch, (color), Temp.....Foot

**Add the following pay items to the list of pay items in subsection 812.04, on page 623 of the Standard Specifications for Construction:**

Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, (color), Temp .....Foot  
 Pavt Mrkg, Wet Reflective, Type NR, Paint, 4 inch, (color), Temp.....Foot  
 Pavt Mrkg, Wet Reflective, Type NR, Tape, 4 inch, (color), Temp.....Foot  
 Pavt Mrkg, Wet Reflective, Type R, Tape, 8 inch, (color), Temp .....Foot  
 Pavt Mrkg, Wet Reflective, Type NR, Paint, 8 inch, (color), Temp.....Foot  
 Pavt Mrkg, Wet Reflective, Type NR, Tape, 8 inch, (color), Temp.....Foot

**Delete subsection 812.04.N.2, on page 629 of the Standard Specifications for Construction, in its entirety and replace with the following:**

2. **Non-Removable (Type NR) Pavement Markings.** The unit price for the relevant **Pavt Mrkg, Wet Reflective, Type NR, Paint, Temp** and **Pavt Mrkg, Wet Reflective, Type NR, Tape, Temp** pay items include the cost of providing and placing temporary pavement markings.

**Delete subsection 812.04.N.3, on page 629 of the Standard Specifications for Construction, in its entirety and replace with the following:**

3. **Removable (Type R) Pavement Markings.** The unit prices for **Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, (color), Temp** and **Pavt Mrkg Cover, Type R, (color)** include the cost of providing, placing, maintaining, removing and disposing of temporary pavement marking. Payment will be per foot measured along the length of the placed pavement marking.

**Delete subsection 922.06.A.1 on page 937 of the Standard Specifications for Construction in its entirety and replace with the following:**

1. **Pavement Marking, Wet Reflective, Type R.** Provide wet reflective Type R temporary pavement marking as preformed tape. Select wet reflective Type R markings from the Qualified Products List (922.06A). Apply and remove preformed tape in accordance with the manufacturer's instructions. The tape must remain flexible and conform to the texture of the pavement surface during use.

**Delete subsection 922.06.A.2, on page 937 of the Standard Specifications for Construction, in its entirety and replace with the following:**

2. **Pavement Marking, Wet Reflective, Type NR Paint.** Provide Wet Reflective Type NR

temporary pavement markings as paint reflectorized with a wet reflective optic system recommended by the manufacturer and as approved by the Engineer, as required.

- a. **Wet Night Retro Reflective Optics.** Select wet reflective optics from the Qualified Products List (920.02C) or an alternative that exceeds the requirements in Table 922-2 as approved by the Engineer:

<b>Table 922-2</b>		
<b>Temporary Wet Reflective Type NR Pavement Markings</b>		
Average Initial Retro reflectivity at 30-meter geometry in mcd/lux/sq m with flow of placement		
Test Method	Color	
	White	Yellow
Dry (ASTM E 1710)	700	500
Wet Recovery (ASTM E 2177)	250	200

Ship the material to the job site or Contractor's yard in sturdy containers marked in accordance with subsection 920.01.A of the Standard Specifications for Construction.

Select glass beads for corresponding materials in accordance to subsection 920.02 of the Standard Specifications for Construction.

Submit to the Engineer prior to the start of work a general certification from the manufacturer that when applied in accordance with the construction methods herein, the glass beads and wet reflective optics will meet the minimum requirements shown in Table 922-2.

- b. **Binder Material for Temporary Wet Reflective Type NR Pavement Markings.** Select the liquid applied pavement marking from one of the materials from the following Qualified Products Lists to use as a binder for the wet reflective optics or use an alternative as approved by the Engineer:

811.03D1 Waterborne, Liquid Pavement Marking Material

811.03D2 Low Temperature Waterborne, Liquid Pavement Marking Material

811.03D3 Regular Dry Paint, Liquid Pavement Marking Material

3. **Pavement Marking, Wet Reflective, Type NR Tape.** Provide Wet Reflective Type NR temporary pavement markings as preformed tape. The tape must remain flexible and conform to the texture of the pavement surface during use. Select wet reflective Type NR tape from the Qualified Products List (922.06A).

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PAYMENT OF TEMPORARY TRAFFIC CONTROL DEVICES

OFS:CRB

1 of 1

APPR:CGB:MB:08-26-16

FHWA:APPR:09-13-16

**Delete subsection 812.04.A Damage Compensation, on page 623 of the Standard Specifications for Construction, in its entirety and replace with the following:**

**A. Damage Compensation.** Notify the Engineer of damaged temporary traffic control devices. Before replacement and disposal, allow the Engineer to verify the condition of damaged temporary traffic control devices eligible for payment. Damage will be assumed to have occurred from vehicular traffic unless otherwise documented. The Department will pay as follows, for replacing temporary traffic control devices or equipment that are placed appropriately and damaged by vehicular traffic, other than the Contractor's vehicles and equipment. Devices will be assumed to be placed appropriately unless otherwise documented. Replacement will be made up to project completion (excluding water and cultivating), as follows:

1. The **Furnished** unit price for temporary traffic control devices paid for as furnished pay items, excluding Plastic Drums and 42 inch channelizing devices;
2. The unit price for devices not paid for as **Furnished**;

- a. Plastic Drums and 42 inch Channelizing Devices will be paid for at a set rate of \$35 per Plastic Drum and \$18 per damaged 42 inch Channelizer.

- i. Prior to payment the Plastic Drum or 42 inch Channeling Device must be classified as unacceptable, per the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features (ATSSA QG), and spray-painted with an X.
- ii. All Plastic Drums and 42 inch Channelizing Devices that are classified as marginal, per the ATSSA QG, during the project, will have blue survey ribbon tied to the handle. MDOT will be responsible for marking marginal devices. Removal and replacement will take place as defined under the Quality Classifications and Requirements Section of the ATSSA QG and will be at no additional cost to the Department.

- If at any time, any Contactor, is witnessed tampering with the marginal marking method, the Engineer may require all marginal devices on the project to be upgraded to acceptable outside the timeframes detailed in the ATSSA QG.

3. The manufacturer's invoice cost for devices required by the Engineer and not included in the unit price for other relevant pay items;

4. The manufacturer's invoiced cost for damaged equipment included in a lump sum pay item for maintaining traffic.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
INDUSTRIAL BY-PRODUCTS AND BENEFICIAL RE-USE

ENV:HLZ

1 of 1

APPR:JJG:JFS:09-11-14

APPR: FHWA: 09-11-14

**a. Description.** For this project, regardless of the application, the use of industrial by-products, covered in 2014 PA 178, is prohibited unless the use and application of a particular material is covered elsewhere in the contract.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**GRANULAR MATERIALS**

CFS:SAB

1 of 1

APPR:WRE:DBP:10-13-06

FHWA:APPR:06-01-11

**a. Materials.** Bottom ash may be used for granular material for the pay items Subbase, LM; Subbase, CIP; Embankment, LM and Embankment, CIP. Bottom ash may not be used for any other pay items, unless approved by the Engineer.

The only approved source for furnishing bottom ash as granular material for Subbase, LM; Subbase, CIP; Embankment, LM and Embankment, CIP is the DTE power plant at Monroe.

Provide written documentation to the Engineer that the bottom ash came from DTE's Monroe plant before using the material on the project. All specification requirements for granular materials will remain the same.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**CRUSHED CONCRETE NEAR WATER**

CFS:JFS

1 of 1

APPR:KAS:DBP:02-24-12

FHWA:APPR:02-24-12

**Add the following paragraph after the first paragraph of Subsection 902.05 on page 743 of the Standard Specifications for Construction:**

The use of crushed concrete is prohibited on the project within 100 feet of any water course (stream, river, county drain, etc.) and lake, regardless of the application or location of the water course or lake relative to the project limits.

**Add the following paragraph after the first paragraph of Subsection 902.06 on page 743 of the Standard Specifications for Construction:**

The use of crushed concrete is prohibited on the project within 100 feet of any water course (stream, river, county drain, etc.) and lake, regardless of the application or location of the water course or lake relative to the project limits.

**Add the following paragraph after the fourth paragraph of Subsection 902.07 on page 744 of the Standard Specifications for Construction:**

The use of crushed concrete is prohibited on the project within 100 feet of any water course (stream, river, county drain, etc.) and lake, regardless of the application or location of the water course or lake relative to the project limits.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**ALTERNATIVE GRANULAR MATERIALS FOR FILL AND SUBBASE**

CFS:SAB

1 of 1

APPR:JFS:DMG:04-03-12

FHWA:APPR:04-09-12

**Delete subsection 902.07.A, on page 744, of the Standard Specifications for Construction, in its entirety and replace with the following:**

A. Class I, Class IIAA, or Dense-Graded Aggregate 21A, 21AA and 22A material for Class II material;

**Delete subsection 902.07.B, on page 744, of the Standard Specifications for Construction, in its entirety and replace with the following:**

B. Class I, Class II, Class IIA, Class IIAA, Class IIIA or Dense-Graded Aggregate 21A, 21AA and 22A material for Class III material;

**Delete subsection 902.07.C, on page 744, of the Standard Specifications for Construction, in its entirety and replace with the following:**

C. Class I material for Class IIAA material; and

**Add the following subsection to Section 902.07, on page 744, of the Standard Specifications for Construction.**

D. Dense-Graded Aggregate 21A, 21AA and 22A material for Class IIA.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
SUPERPAVE FINAL AGGREGATE BLEND REQUIREMENTS

CFS:KPK

1 of 2

APPR:JFS:CJB:05-31-18

FHWA:APPR:06-06-18

**a. Description.** This special provision establishes the Superpave final aggregate blend gradation requirements and the Superpave final aggregate blend physical requirements.

**b. Materials.** Replace Table 902-5 and Table 902-6 of the Standard Specifications for Construction with the following tables.

Table 902-5 Superpave Final Aggregate Blend Gradation Requirements						
Standard Sieve	Percent Passing Criteria (control points)					
	Mixture Number					
	5	4	3 Leveling Course	3 Base Course	2	LVSP (a)
1½ inch	—	—	—	—	100	—
1 inch	—	—	100	100	90–100	—
¾ inch	—	100	90–100	90–100	≤90	100
½ inch	100	90–100	≤90	≤90	—	75–95
3/8 inch	90–100	≤90	—	—	—	60–90
No. 4	≤90	—	—	—	—	45–80
No. 8	47–67	39–58	35–52	23–52	19–45	30–65
No. 16	—	—	—	—	—	20–50
No. 30	—	—	—	—	—	15–40
No. 50	—	—	—	—	—	10–25
No. 100	—	—	—	—	—	5–15
No. 200	2.0–10.0	2.0–10.0	2.0–8.0	2.0–8.0	1.0–7.0	3–6
a. For LVSP, less than 50 percent of the material passing the No. 4 sieve may pass the No. 30 sieve.						

Table 902-6 Superpave Final Aggregate Blend Physical Requirements													
Est. Traffic (million ESAL)	Mix Type	Percent Crushed Minimum Criteria		Fine Aggregate Angularity Minimum Criteria		% Sand Equivalent Minimum Criteria		Los Angeles Abrasion % Loss Maximum Criteria		% Soft Particles Maximum Criteria (a)		% Flat and Elongated Particles Maximum Criteria (b)	
		Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course
< 0.3	LVSP	55/—	—	—	—	40	40	45	45	10	10	—	—
< 0.3	E03	55/—	—	—	—	40	40	45	45	10	10	—	—
≥ 0.3 - < 1.0	E1	65/—	—	40	—	40	40	40	45	10	10	—	—
≥ 1.0 - < 3	E3	75/—	50/—	43	40	40	40	35	40	5	5	10	10
≥ 3 - < 10	E10	85/80	60/—	45	40	45	45	35	40	5	5	10	10
≥ 10 - < 30	E30	95/90	80/75	45	40	45	45	35	35	3	4.5	10	10
≥ 30 - < 100	E50	100/100	95/90	45	45	50	50	35	35	3	4.5	10	10
(a) Soft particles maximum is the sum of the shale, siltstone, ochre, coal, clay-ironstone and particles that are structurally weak or are non-durable in service.													
(b) Maximum by weight with a 1 to 5 aspect ratio.													
Note: "85/80" denotes that 85 percent of the coarse aggregate has one fractured face and 80 percent has at least two fractured faces.													

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**MISCELLANEOUS METAL PRODUCTS REVISIONS**

STR:MJF

1 of 2

APPR:JSW:POJ:01-04-19  
FHWA:APPR:01-10-19

**Add the following paragraph to subsection 908.05, on page 782 of the Standard Specifications for Construction:**

Ductile iron castings must meet the requirements of *AASHTO M306, Grade 70-50-05* or *Grade 80-55-06* when ductile iron is shown as an acceptable material on the plans. Castings must be certified by independent proof load testing at 50,000 pounds. Coat exposed surfaces with asphaltic paint. Ensure a smooth, tough, and tenacious coating when cold. Ensure the coating does not scale-off, tack, or become brittle.

**Delete subsections 908.09.A and 908.09B, on pages 783 and 784 of the Standard Specifications for Construction in their entirety and replace with the following:**

**A. Base Plates, Angle, and Post Elements.** Base plate, angle, rail splice, and non-tubular post elements must meet the material requirements of ASTM A36 and galvanizing requirements of ASTM A123. Tubular post elements must meet the material requirements of ASTM A500, Grade B and galvanizing requirements of ASTM A123. Silicon content must be less than 0.06 percent or from 0.15 percent to 0.25 percent. Base plate and post elements must meet the Charpy V-Notch impact requirements specified in subsection 906.04.A at a test temperature of 10 degrees Fahrenheit.

**B. Rail Elements.** Rail elements must meet the material requirements of ASTM A500, Grade B and galvanizing requirements of ASTM A123. Silicon content must be less than 0.06 percent or from 0.15 percent to 0.25 percent.

Provide the Engineer with one copy of the Mill Test Report (MTR) verifying chemical and physical requirements for structural steel rail elements. Provide an affidavit stating that the material meets specifications. If the MTR is unavailable, arrange for tests of chemical and physical properties and provide certified copies of the test reports and affidavits to the Engineer at no additional cost to the Department. The Contractor has the option of re-testing a rail sample if it failed elongation and passed all other chemical and physical requirements.

The Contractor must drop weight tear test rail elements from all heats supplied in accordance with ASTM E436 (Standard Test Method for Drop-Weight Tear Tests of Ferric Steels), except as modified herein. Drop weight tear testing is not required on TS 2 by 2 rail elements. Do not heat treat failed heats and do not provide failed heats to the fabricator. The Contractor must conduct the drop weight tear test on each heat at 0 degrees Fahrenheit on 2 inch by 9 inch specimens, supported to achieve a 7 inch span.

The Contractor must test three specimens from each of three sides that do not contain a weld to determine the percent shear area. The Contractor will disregard the shear areas of the three specimens from the side with the lowest average shear area and base the final average on the remaining six specimens. Material with an average percent shear area below 50 must be rejected by the Contractor; however, if the average percent shear area is between 30 and 50, the Department will allow the Contractor to retest the material. Retest sampling frequency is three times that of the first test and all sample test results must be included in calculating the average. The Contractor must reject material not having a minimum average percent shear area of 50 upon retest.

The manufacturer of the tubular railing must identify the product as follows:

1. Place identification before galvanizing;
2. Include heat number or other code traceable to the heat number;
3. Include manufacturer's unique identification code;
4. Place identification on only one section face;
5. Repeat identification at no more than 4-foot intervals;
6. Do not extend identification into the curved surfaces at corners of section; and
7. Do not place identification on side facing traffic or side opposite traffic.



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
PHYSICAL REQUIREMENTS FOR GEOTEXTILES

CFS:RBE

1 of 1

APPR:DMG:RWS:08-06-15

FHWA:APPR:08-11-15

Delete Table 910-1 on page 813 of the Standard Specifications for Construction in its entirety and replace with the following:

**Table 910-1: Physical Requirements for Geotextiles**

Geotextile Category	Property				
	Grab Tensile Strength (minimum) (pounds)	Trapezoid Tear Strength (minimum) (pounds)	CBR Puncture Strength (minimum) (pounds)	Permittivity per second (minimum)	Apparent Opening Size (maximum) (millimeters)
	Test Method				
	<i>ASTM D 4632</i>	<i>ASTM D 4533</i>	<i>ASTM D 6241</i>	<i>ASTM D 4491</i>	<i>ASTM D 4751</i>
Geotextile Blanket (a)	90	45	230	0.5	0.21
Geotextile Liner	200	75	440	0.5	0.21
Heavy Geotextile Liner	270	100	620	0.5	0.21
Woven Geotextile Separator (<50% elongation)	270	100	620	0.05	0.425
Non-Woven Geotextile Separator (>50% elongation)	200	75	440	0.05	0.425
Stabilization Geotextile	270	100	620	0.05	0.50
Silt Fence	100 (b)	45	---	0.1	0.60
Drainage Geocomposites	90	45	230	0.5	0.21
<p>a. For pipe wrap where backfill around the pipe meets granular material Class IIAA requirements; geotextiles, including knitted polyester sock, which meet the following minimum requirements in the applied condition are permitted: Mass/Unit Area: 3.0 oz/yd<sup>2</sup>; Mullen burst strength: 100 psi; maximum apparent opening size must be 0.30 mm for pavement and foundation underdrains, and 0.60 mm in other areas. The fluid displacement rate for the Mullen burst test equipment must be 170 mL/min <math>\pm</math> 5 mL/min. Subtract tare strength from the ultimate burst strength as specified in <i>ASTM D 3786</i>.</p> <p>b. Elongation at the specified grab tensile strength no greater than 40% for silt fence.</p>					

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**ELECTRICAL AND LIGHTING CONDUIT**

UTL:SJU

1 of 1

APPR:MWB:LWB:01-13-15

FHWA:APPR:01-27-15

**Delete the first sentence in subsection 918.01, on page 857 of the Standard Specifications for Construction, and replace with the following:**

Provide conduits listed and appropriately labeled by a Nationally Recognized Testing Laboratory (NRTL), as recognized by the Occupational Safety and Health Administration (OSHA), with ultraviolet protection and manufactured for use at temperatures of at least 194 degrees F unless otherwise required.

**Delete the second sentence in subsection 918.01.A, on page 857 of the Standard Specifications for Construction, and replace with the following:**

Provide galvanized steel conduit manufactured in accordance with UL 6.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**PERMANENT PAVEMENT MARKING MATERIALS**

PMK:MKB

1 of 4

APPR:MWB:CRB:02-05-19  
FHWA:APPR:02-21-19

**Delete the content of section 920, on page 890 of the 2012 Standard Specifications for Construction in its entirety and replace it with the following:**

**920.01. Marking Materials.** Select pavement marking materials from the Qualified Products List unless specified otherwise by special provision in the contract.

When selecting preformed thermoplastic products, ensure preformed thermoplastic materials have a thickness of 90 mils for surface applications and a thickness of 125 mils for recessed applications. For black liquid shadow markings and blue markings used in parking areas, choose a specified binder material and color from the Qualified Products List or select a white specified binder material from the Qualified Products List and tint the product to the appropriate color.

Use liquid applied pavement marking materials manufactured in the previous 12 months or within the shelf-life directed by the manufacturer, whichever is less. Use solid applied materials within the shelf-life directed by the manufacturer. Provide certification that liquid and solid applied pavement marking materials have been stored per the manufacturer's requirements. Materials not in compliance will be rejected and removed at the Contractor's expense.

Pavement marking materials must meet the general packaging and labeling requirements of subsection 920.01.A, and applicable specific material requirements of subsection 920.01.B.

**A. General Packaging and Labeling.** Material containers or packages must be marked on the tops and sides, using a durable, weather-resistant marking. Include the following information:

1. Manufacturer's name and address,
2. Description of the material,
3. Product identification number,
4. Lot or Batch number,
5. Date of manufacture,
6. Volume and
7. Weight.

**B. Packaging and Labeling for Cold Plastic and Thermoplastic Markings.**

1. **Cold Plastic.** Containers or packages of cold plastic material and the core of each roll must be marked with the information specified in subsection 920.01.A.
2. **Thermoplastic.** In addition to the requirements of subsection 920.01.A, thermoplastic material must be packaged in non-stick containers, and labeled with "heat to manufacturer-recommended temperature range," or a Department-approved equal.

**920.02. Glass Beads and Wet Reflective Optics.**

**A. Glass Bead and Wet Reflective Optics Packaging and Labeling.** Glass beads and wet reflective (WR) optics must be packaged in moisture resistant bags and labeled to include the following information:

1. Manufacturer's name and address,
2. Shipping point,
3. Trademark or name,
4. The wording "Glass Beads" or "the appropriate optic type",
5. Specification number,
6. Weight,
7. Lot or Batch number, and
8. Date of manufacture.

Drop-on AASHTO M247 Type I beads, herein referred to as standard glass beads, must meet the general requirements of subsection 920.02.B and the applicable requirements for specific applications of subsection 920.02.D. WR optics must meet the general requirements of subsection 920.02.C and the applicable requirements for specific applications of subsection 920.02.D. Large glass beads must meet federal specification TTB-1325 for a Type 4 glass bead.

All glass beads and WR optics to be used on Federal-aid projects must contain no more than 200 parts per million of arsenic or lead, as determined in accordance with Environmental Protection Agency testing methods 3052, 6010B, or 6010C.

**B. General Requirements for Standard Glass Beads.** Standard glass beads must meet the physical characteristics and gradation requirements specified in Table 920-1, unless otherwise specified in subsection 920.02.D for specific applications.

<b>Table 920-1</b>	
<b>General Requirements for Standard Glass Bead</b>	
<b>Physical characteristics (MTM 711)</b>	
General Appearance	Transparent, clean, smooth, free from milkiness, pits, or excessive air bubbles
Shape	Spherical with ≥75% true spheres

Color	Colorless, very light gray, very light gray tinge, or bright white
Index of Refraction	$\geq 1.50$
Alkalinity	$\leq 2.0$
<b>Gradation Requirements (MTM 711)</b>	
<b>Sieve Size (No.)</b>	<b>Total Percent Passing</b>
20	100
30	75–95
50	15–35
100	0–5

C. **General Requirements for WR Optics.** WR optics must meet the retroreflectivity requirements specified in Table 920-2.

<b>Table 920-2</b> <b>General WR Optics Requirements</b> <b>Average Initial Retroreflectivity at 30 meter geometry in</b> <b>mcd/lux/m<sup>2</sup></b>		
Test Method	Color	
	White	Yellow
Dry (ASTM E 1710)	700	500
Wet Recovery (ASTM E 2177)	250	200
Wet Continuous (ASTM E 2832)	100	75

D. **Glass Bead and WR Optics Requirements for Specific Applications.** For specific applications, glass beads and WR optics must be as follows:

1. For recessed longitudinal markings, use a double drop system of large and standard glass beads, a double drop system of WR optics and standard glass beads, or an Engineer-approved alternate.
2. **Waterborne and Low Temperature Waterborne.** Standard and large glass beads for use with waterborne marking material and low temperature waterborne marking material require a moisture resistant coating and a silane coating. The type, gradation, and application rates for WR optics used with waterborne and low temperature waterborne marking materials must meet the waterborne manufacturer's recommendations.
3. **Regular Dry.** Standard and large glass beads for use with regular dry marking material may have a moisture resistant coating, a silane coating, or both. The type, gradation, and application rates for WR optics used with regular dry marking materials must meet the regular dry manufacturer's recommendations.
4. **Thermoplastic.** Standard and large glass beads for thermoplastic marking material must have a moisture resistant coating. The type, gradation, and application rates for WR optics

used with thermoplastic marking materials must meet the thermoplastic manufacturer's recommendations.

5. **Sprayable Thermoplastic.** The type, gradation, and application rates for standard and large glass beads and WR optics used with sprayable thermoplastic marking material must meet the sprayable thermoplastic manufacturer's recommendation.
6. **Polyurea.** The type, gradation, and application rates for standard and large glass beads and WR optics used with polyurea marking material must meet the polyurea manufacturer's recommendation.
7. **Modified Urethane.** The type, gradation, and application rates for standard and large glass beads and WR optics used with modified urethane marking material must meet the modified urethane manufacturer's recommendation.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

NOTICE TO BIDDERS  
FOR  
**MULTIPLE DAVIS-BACON WAGE DECISIONS**

CSD:JDM

1 of 1

APPR:MAS:11-21-14

This proposal may contain multiple Davis-Bacon Wage Decisions. In order to clarify the work covered by each decision, the following explanations are offered:

General Decision MI\_\_0001 covers all airport construction, bridge construction, highway construction, and sewer and watermain work that are incidental to highway projects. The construction type indicated on this decision is "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)". This wage decision is the most commonly used wage decision in MDOT's federally funded projects.

In accordance with the U.S. Department of Labor's All Agency Memorandums No. 130 and No. 131, multiple wage decisions will be included in those projects in which a second category of work is substantial in relation to project cost – more than approximately 20% or \$1,000,000. Sewer and watermain work is considered to fall under the Heavy Construction work classification by the DOL, therefore when that work type is more than 20% of the engineer's estimate or \$1,000,000, the wage decision with the construction type "HEAVY CONSTRUCTION PROJECTS" will also be included in the proposal and is to be used for the sewer and watermain work in the proposal. All other work performed on the project will be covered by the "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)" wage decision.

Also, when the landscape work is more than 20% of the project cost or \$1,000,000, the "HEAVY CONSTRUCTION PROJECTS" wage decision will be included in the proposal to cover all landscape work. All other work performed on the project will be covered by the "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)" wage decision. If the project is a total landscape project, only the "HEAVY CONSTRUCTION PROJECTS" wage decision will be in the proposal.

Rest area building projects will include the construction type "BUILDING" wage decision when the building portion of the work is more than 20% of the project cost or \$1,000,000. The other work performed on the project will be covered by the "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)" wage decision and/or the "HEAVY CONSTRUCTION PROJECTS" wage decision (landscape and/or sewer and watermain work) if either or both are greater than 20% or \$1,000,000.

Although there is only one wage decision for "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)", work (MI\_\_0001), the "HEAVY CONSTRUCTION PROJECTS" and "BUILDING" wage decisions vary from county to county.

**NOTICE TO BIDDERS**

**BID RIGGING**

To report bid rigging activities call:

**1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.



## **NOTICE TO CONTRACTORS/CONSULTANTS**

### **Fraud and Abuse Hotline**

The Michigan Department of Transportation (MDOT) has established a Fraud and Abuse Hotline for employees, contractors, consultants, and others to report suspected fraud or abuse, such as: prevailing wage non-compliance, theft, kickbacks, wrongful claims, contract fraud, use of materials that do not comply with specifications, unapproved substitution of materials, commodities, or test samples, or failure to follow contract procedures.

Anyone with knowledge of any activity involving the potential for fraud or abuse is requested to call the Hotline at (toll free) **1-866-460-6368** or **517-241-2256**.

**CITY OF FLINT**  
**UTILITY COORDINATION**

SD:AJJ

1 of 2

May 2020

The Contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the Michigan Department of Transportation 2012 Standard Specifications for Construction. In addition, for the protection of underground utilities, the Contractor shall follow the requirements in Section 107.12 of the MDOT 2012 Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 109.05.E of the MDOT 2012 Standard Specifications for Construction.

For protection of underground utilities and in conformance with Public Act 174, 2015, as amended the Contractor shall dial 1-800-482-7171 or 811 a minimum of three (3) full working days, excluding Saturdays, Sundays and Holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the contractor of the responsibility of notifying utility owners who may not be a part of the "Miss Dig" alert system.

**PUBLIC UTILITIES**

The following Public Utilities may have facilities located within the Right-of-Way:

<b><u>NAME AND ADDRESS OF OWNER</u></b>	<b><u>KIND OF UTILITY</u></b>	<b><u>TELEPHONE</u></b>
AT&T 54 North Mill Street, P.O. Box 32, Pontiac, MI 48342 Attn: Jeff Heath	Telephone	313.263.9939
City of Flint Transportation 1101 South Saginaw Street, South Building, Flint, MI 48502 Attn: John Daly	Transportation	810.766.7165
City of Flint Transportation 1101 South Saginaw Street, South Building, Flint, MI 48502 Attn: Rod McGaha	Transportation	810.766.7135
City of Flint Water Service Center 3310 East Court Street, Flint, MI 48506 Attn: Rob Bincsik	Water	810.766.7202
City of Flint Traffic Engineering 702 West 12 <sup>th</sup> Street, Flint, MI 48502 Attn: Wes Muhammad Attn: Rod McGaha	Traffic Signals	810.766.7350
Consumers Energy 3201 East Court Street, Flint, MI 48501 Attn: Matt Cox	Gas	810.760.3486
Consumers Energy 3201 East Court Street, Flint, MI 48501		

## **CITY OF FLINT**

### **UTILITY COORDINATION**

SD:AJJ  
Attn: Tracy Mahar

2 of 2  
Electric

May 2020  
810.760.3506

Comlink  
1515 Turf Lane, East Lansing, MI 48823  
Attn: Zack Bollinger

Telecom

517.742.4020

Mass Transportation Authority (MTA)  
1401 South Dort Highway, Flint, MI 48503  
Attn: Edgar Benning

MTA Bus Routes

810.767.6950

The owners of existing service facilities that are within grading or structure limits will move them to locations designated by the Engineer or will remove them entirely from the road Right-of-Way. Owners of Public utilities will not be required by the City to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor's Operations.

The existing utilities shown on the plans represent the best information available as obtained from survey and existing records. This information does not relieve the Contractor of the responsibility of protecting all existing utilities, in case utilities have been constructed or removed since the survey date, or if utilities are encountered in different locations.

All existing utilities shall be located as to both horizontal and vertical position prior to starting any utility construction or other excavation. Cost shall be included in the new utility or excavation pay items.

The Contractor's attention is directed to the requirements for cooperation with others, as covered in Section 104.08 of the MDOT 2012 Standard Specification for Construction.

### **UTILITY DAMAGE**

The Contractor shall be responsible for the protection of all existing utilities during construction of this project. Any utilities damaged by the Contractor shall be repaired in accordance with the related utilities specifications at the Contractor's expense.

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTAL SPECIFICATION  
FOR  
**ERRATA TO THE 2012 STANDARD SPECIFICATIONS**

1 of 30

03-04-19

<b>Page</b>	<b>Subsection</b>	<b>Errata</b>
N/A	N/A	In the very beginning of the book on the page where we list the MDOT publications included by reference delete the following manual. "Work Zone Safety and Mobility Manual"
N/A*	N/A	In the very beginning of the book on the page where we list the MDOT publications included by reference replace the Field Manual of Soil Engineering (out of Print) with the following manual. "Geotechnical Manual"
3	101.02	Modify the abbreviation reading "AIS" to read "AISI".
4*	101.02	Delete the following abbreviations and the long forms MDELEG MDNRE Add the following abbreviations and the long forms MDNR Michigan Department of Natural Resources MDEGLE Michigan Department of Environmental Great Lakes, and Energy MDLARA Michigan Department of Licensing and Regulatory Affairs NESC National Electrical Safety Code
27	103.02.B.2	Change the last sentence of the first paragraph to read "For decreases below 75 percent, the maximum allowable payment for work performed, including any adjustment, will not exceed an amount equal to 75 percent of the original contract quantity times the contract unit price."
34	104.05	The first sentence of this subsection should read "If the Contractor performs unauthorized work (work performed without the inspections required by the contract, extra work performed without Department approval, work performed contrary to the inspectors direction, or work performed while under suspension by the inspector), the Engineer may reject the unauthorized work."
46	104.12	Add the following to the end of the first paragraph "The use of right-of-way in wetlands and floodplains, or the crossing of water courses by construction equipment is prohibited."
53	105.09	Add the following to the end of the second paragraph "Any specifically produced material not purchased by the Department, will remain the

Page	Subsection	Errata		
		Contractors and must be removed from the project prior to final acceptance."		
56	107.02.B.2	This sentence should read "U.S.Army Corps of Engineers' Section 404, Dredge and Fill; and Section 10, Navigable Waterway."		
56*	107.02.B	Add the subsection reading as follows: "3. U.S. Coast Guard Section 9, Navigable Waterway."  Change "MDNRE" to "MDEGLE" in this subsection.		
64	107.12	Change the first sentence of the first paragraph to read: "For protection of underground utilities and in accordance with 2013 PA 174, the Contractor must notify Miss Dig at least 3 work days, excluding Saturdays, Sundays and holidays, before beginning each excavation in areas where public utilities have not been previously located."		
65*	107.15.A	Change "MDNRE" to "MDEGLE" in four instances in this subsection.		
66	107.15.A.3	Add the following to the end of the paragraph "Note that a burn permit from the MDNR is required for any open burning whenever the ground is not snow covered. Any individuals that allow a fire to escape will be in violation of the Natural Resources and Environmental Protection Act and will be required to reimburse the costs of suppressing the wild fire."		
67*	107.16	The third sentence should read "In State Forests, the Contractor must contact the local Unit Manager, Forest Management Division, MDNR, regarding the work to be performed within or adjacent to the forest land."  Delete the last sentence of the first paragraph of this subsection.		
80	108.08.F	Delete the second paragraph in its entirety.		
80	108.08.G	Add the following new subsection: "G. The Contractor may propose and the Engineer may approve another equitable method, supported by an acceptable rationale to determine time extensions for any of the excusable delays listed in subsection 108.08.		
83	108.10.C	Change the last sentence of the first paragraph to read: "The liquidated damages may contain one or more components of damages added together."		
83	108.10.C.1	In Table 108-1 delete the last row of the table and replace it with the following: <table><tr><td>≥50,000,000</td><td>4,500</td></tr></table>	≥50,000,000	4,500
≥50,000,000	4,500			
102	109.05.E.1	Change the second sentence of the third paragraph to read: "Provide the content specified in subsection 109.05.D.11 for the applicable items in this statement and as follows:"		

Page	Subsection	Errata
107	150.04	Change the following pay item reading "Mobilization, Max ____" to read "Mobilization, Max (dollar)" at nine locations throughout the subsection.
112	201.03.A.3.b	Change "MDNRE" to "MDNR" in three instances in this subsection.
123	204.04	Change the following pay item reading "Structures, Rem" to read "Structures, Rem (Structure No.)"
123	204.04	Change the following pay item reading "Concrete Barrier, Rem" to read "Conc Barrier, Rem"
150*	208.01	Change "MDNRE" to "MDEGLE" in this subsection.
180	308.03.A	Change the first sentence of the second paragraph to read: "Do not operate equipment required to place backfill directly on geotextile products."
185	401.03.A	Change the first sentence of the second paragraph to read: Where unstable soil conditions, or obstructions other than rock, require excavation of the trench below the elevation detailed on the plans; undercut, backfill, and compact the trench as directed by the Engineer.
188	401.03.H	Change the second sentence of the paragraph to read "Jack steel pipes in place in accordance with subsection 401.03.G".
189	401.03.N	Add the following sentence to the end of the first paragraph "Where possible, maintain the stream flow thru a temporary channel or temporary culvert."  The second sentence of the second paragraph should read "Direct water from the dewatering operations through a filter bag before discharging to an existing drainage facility."
189	401.04	Change the fourth pay item from the end of the list to read as follows: "Culv, Reinf Conc Ellip, (shape) CI __, (rise) inch x (span) inch".
190	401.04	Change the fourth pay item from the end of the list to read as follows: "Steel Casing Pipe, __ inch, Tr Det __."
195	402.03.C	Change the third sentence of the first paragraph to read as follows: "Wrap pipe joints, with a diameter greater than 24 inches, using geotextile blanket."
200	402.04	Change the third pay item from the top of the list to read as follows: "Sewer, CI __, __ inch, Jacked in Place"
200	402.04.A	Change the last sentence of the subsection to read as follows: "The unit price for <b>Sewer</b> and <b>Sewer, Reinf Conc, Ellip</b> includes the cost of excavation, backfill, geotextile blanket and mandrel testing."

Page	Subsection	Errata
201*	402.04.H	Change the last sentence of the first paragraph to read "The Department will not make an adjustment in the pay items of <b>Minor Traf Devices</b> or <b>Traf Regulator Control</b> ."
208	403.04.D.3	Change the sentence to read: "Removing and replacing pavement adjacent to the adjusted cover per Standard Plan R-37 Series."
218	406.03.A.2	Change the first sentence of the first paragraph to read: "Design precast box culverts less than 10 feet in span length measured along the centerline of the roadway in accordance with current AASHTO LRFD Bridge Design Specifications and ASTM C 1577."  Add the following sentence to the end of the first paragraph: "Design precast box culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway for HL-93 Modified live load."
219	406.03.B	Change the first sentence of the first paragraph to read: "Submit shop drawings for culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway to the Engineer, for review and approval in accordance with subsection 104.02."
219	406.03.C.1	Change the second sentence of the first paragraph to read: "Before manufacture, perform load ratings on precast three-sided, arch or box culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway, in accordance with the AASHTO Manual of Bridge Evaluation, Section 6, Part A, the Michigan Bridge Analysis Guide current at the time load rating is performed, and the Michigan Structure Inventory and Appraisal Guide."
223	406.03.G	Add the following after the first sentence of the second paragraph: "Where possible, maintain the stream flow thru the existing channel, temporary channel, or temporary culvert."
224	406.03.G	Replace the fifth paragraph of this subsection with the following: "The Contractor may use cast-in-place wing walls, headwalls, and aprons, as alternatives to precast wing walls, headwalls, and aprons. Attach cast-in-place wing walls or headwalls as shown on the shop drawings."
225	406.03.G.2	Change the third sentence of the first paragraph to read: "Before placing the open-graded aggregate 34R, compact the coarse aggregate 6A using at least three passes of a vibrating plate compactor."
226	406.03.G.2	Change the first sentence of the second paragraph of this subsection to read:

Page	Subsection	Errata
		"Fill the space between the box culvert joints during placement of box sections with closed-cell rubber extrusion type gaskets in accordance with ASTM C 990."
226	406.04.A.9	Change the sentence to read: "Providing plan modifications including design, additional plan quantities and pay items to accommodate any changes to the precast units as shown on the plans."
226*	406.04.A	Add the following paragraph after the last paragraph of the subsection: "The substructure design is specific to the three-sided or arch culvert detailed on the plans. The Contractor must use approved MDOT service vendors qualified in Hydraulics, Geotechnical Engineering Services, and Short and Medium Span Bridges to perform the required design and plan modifications, as directed by the Engineer, if the Contractor selects a culvert shape different than shown on the plans."
227	406.04.B	Add the following new item in the list of items in this subsection: 2. Headwalls, wingwalls, aprons, and curtain walls, precast or cast-in-place;  Renumber the exist items 2 through 4 in this list to read 3 through 5.  Delete existing item numbered 5 and replace with the following: 6. Inserts for bars and connection hardware; and  Renumber the existing item 6 in this list to read 7.
227	406.04.B	Delete the first and second paragraphs following the list of items in this subsection and replace with the following: "The Department will pay separately for cast-in-place concrete, other than for culvert segments, wing walls, and headwalls; excavation; protective coating; providing and placing backfill material; by plan quantity in accordance with subsection 109.01.A."
239	501.03.C.6	The first sentence of this subsection should read "Except as specified in subsection 501.03.C.4, removing HMA surface applies to removing HMA overlying a material designated for removal or that is required to remain in place."
247	501.03.O	Change footnote e in Table 501-5 to read: "Flushing severe enough to significantly affect surface friction (Friction Number <35)."
249	501.04.H	The first sentence of this subsection should read "The Engineer will measure, and the Department will pay for removing HMA surface, no greater than 12 inches thick, overlying a material designated for removal or that is required to remain in place, as <b>HMA Surface, Rem.</b> "



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		The second paragraph of this subsection should read "The Engineer will measure, and the Department will pay for removing HMA surface, greater than 12 inches thick, overlying a material designated for removal or that is required to remain in place, as <b>Pavt, Rem</b> in accordance with subsection 204.04."
257	503.03.E	Delete this subsection in its entirety.
265	504.03.E.3	Delete this subsection in its entirety.
269	504.04.A	This subsection should read "The unit prices for <b>Micro-Surface</b> , regardless of the type required, include cleaning existing pavement; applying a bond coat; temporary pavement markings; stationing; corrective action; and traffic control to complete corrective action."
299	601.04	In table 601-2 delete the row for Grade P-NC concrete in its entirety.
300	601.04	In table 601-2, the first sentence of footnote b. should read: "Use coarse aggregate 6A, 6AA or 6AAA for Grades P1, P2 and M."  In table 601-2, footnote c. should read: "The mix design basis for bulk volume (dry, loose) of course aggregate per unit volume of concrete is 72% for Grade P1; 74% for Grade P2."
308	602.03.F	Note c. in Table 602-1 should read "Refer to Section D6 of the Materials Quality Assurance Procedures Manual for inspection procedure."
320	602.04.C.3	The last paragraph in this subsection should read "If the Engineer approves a substitution of a higher concrete grade for a lesser grade (e.g., P1 for P2), the Department will pay for the higher grade of concrete using the original bid and pay items of the lesser grade."
327	603.02	Change the second material in the list to read: "Concrete, Grade P-NC.....603"  Change the third material in the list to read: "Base Course Aggregate, 4G, 21AA, 22A.....902"
334	603.03.B.10	Change the last sentence of the second paragraph to read "Apply the required curing compound in two coats, at a rate of at least 1 gallon per 25 square yards for each coat."
342	603.04.G.3	Change "D1" to "W" in two instances in this subsection.
351	701.04	Replace Tables 701-1A and 701-1B with the Table 701-1 below.
362*	704.03.C	Change the last sentence in the first paragraph of this subsection to read: "The Engineer will consider approval after receiving applicable MDEGLE permits for the alternate method."

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372	705.03.C.1	Add the following sentence after the first paragraph of this subsection: "Do not drive piles within a radius of 25 feet of newly placed concrete until the concrete attains at least 75 percent of its specified minimum strength."
374	705.03.C.2.c	Change the last sentence of the second paragraph to read "Drive test piles to the minimum pile length or practical refusal, whichever is greater".
379	705.04	Change the fifth item down the list to read: "Pile, Galv (Structure No.)"
380	705.04	Change the last item in the list to read: "Pile Driving Equipment, Furn (Structure No.)"
383	706.02	The fourth paragraph following the list of materials should read "Provide AASHTO M 270, Grade 36 steel, meeting the requirements of ASTM A 786, galvanized in accordance with section 707, for expansion joint cover plates. Provide plates at least 3/8 inch thick. Use plates with a slip resistance equal to or greater than those meeting the requirements of ASTM A 786 and must be approved by the Engineer. Provide ASTM F 593 (Type 304) stainless steel, 3/4-inch or 1/2-inch diameter, flathead countersunk screws with 3/4-inch or 1/2-inch diameter inserts for use in expansion joint cover plates."
389	706.03.D.4.b	Change the first sentence of the fourth paragraph to read "Design forms, form supports, and attachments to carry dead loads, and resultant horizontal loads due to forming of cantilever overhangs."
390	706.03.E.4	Change the forth sentence of the first paragraph to read: "Use wire ties to secure all bar intersections for the top mat. Use wire ties to secure all bar intersections for other mats where the product of the length and width of bar intersection spacing exceeds 120 square inches."
391	706.03.E.8	Change the first sentence of the second paragraph of this subsection to read: "Patch sawed or sheared ends and visible defects in accordance with ASTM A 775."
392	706.03.E.8	Change the last sentence of the third paragraph of this subsection to read: "Coat mechanical splices after splice installation in accordance with ASTM A 775 for patching damaged epoxy coating."
394	706.03.H.1	Delete the last paragraph on page 394 and replace it with the following: "Do not cast sidewalk, curb, or barrier pours until the deck concrete attains at least the minimum specified 7-day flexural or compressive strength, and after completion of the 7-day continuous wet cure. The

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		forming of succeeding portions may occur, provided the wet cure is maintained."
406*	706.03.N.1.b	Add the following to the end of the last paragraph of the subsection: "Do not discontinue wet cure nor cast succeeding portions onto the bridge deck prior to completion of the 7-day two-phase continuous wet cure. Ensure excess or ponding cure water is removed prior to casting of succeeding structure portions."
416	707.03.C.1	Change the title of the subsection from "Shop Plans to read "Shop Drawings".  Change the second sentence of this subsection to read: "Do not use design drawings in lieu of shop drawings."
426	707.03.C.17	Change the second sentence in the first paragraph of this subsection to read: "Tap oversized galvanized nuts in accordance with ASTM A 563 or AASHTO M 292 and meet Supplementary Requirement S1 of ASTM A 563 or AASHTO M 292."
430	707.03.D.7.b	Delete the first sentence of the last paragraph of this subsection.
430*	707.03.D.7.b	Change the title of the Table 707-4 to read: "Minimum Bolt Tension for ASTM F 3125 Grade A 325"
430	707.03.D.7.b	Change "104,000" to "103,000" in the last row under the column titled Minimum Bolt Tension.
431	707.03.D.7.c	Add the following sentence to the end of the first paragraph of this subsection: "If using impact wrenches, provide wrenches sufficient to tighten each bolt in approximately 10 seconds."
431*	707.03.D.7.c	Change the first sentence of the second paragraph to read: "Do not reuse ASTM F 3125 Grade A 325 bolts and nuts."
434	707.04.A	Change the first sentence of the first paragraph of this subsection to read: "The Engineer will measure structural steel by the calculated weight of metal in the finished structure, excluding filler metal in welding, as shown on the shop drawings or working drawings."
438	708.03.A.2	Change the title of the subsection from "Shop Plans to read "Shop Drawings".  Change the first sentence to read: "Submit shop drawings in accordance with subsection 104.02."  Change the fourth sentence to read:

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		"Do not start production until the Engineer approves the shop drawings."
441*	708.03.A.11	Change the last sentence of the first paragraph to read "Cure concrete at temperatures from 70 °F to 150 °F until concrete attains the release strength shown on the shop drawings".
441	708.03.A.11	Change the fourth sentence of the fourth paragraph to read "Do not exceed a maximum concrete temperature of 150 °F during the curing cycle."
458	711.03.A	Change the first sentence in the first paragraph to read: "Shop drawings for structural steel and pipe railings are not required."
460	711.04.A	Change the second sentence of the first paragraph to read: "The unit price for <b>Bridge Barrier Railing</b> includes the cost of placing steel reinforcement, providing and placing concrete, constructing joints, and forming, finishing, curing and protecting the concrete."
461	711.04.F	The title of this subsection should read " <b>Reflective Marker, Permanent Barrier.</b> "
467	712.03.C	Add the following to the end of the third paragraph of the subsection: "Notify the Engineer of any saw cuts in the top flange. Saw cuts equal to or less than 1/32 inch deep in steel beams must be repaired by grinding, to a surface roughness no greater than 125 micro-inches per inch rms, and tapering to the original surface using a 1:10 slope. Saw cuts in excess of 1/32 inch deep in steel beams require a welded repair to be submitted to the Engineer for approval. Weld in accordance with subsection 707.03.D.8 and provide adequate notice to allow the Engineer to witness the repair work. Inspect and test all saw cut repairs (including grinding repairs) using ultrasonic testing in accordance with 707.03.D.8.c at no additional cost to the Department."
471	712.03.J	Add the following to the end of the second paragraph of the subsection: "Select adhesive anchor systems from the Qualified Products List."
471	712.03.J.1	Delete the first paragraph in this subsection and replace it with the following: "Propose complete details of drilling, cleaning, and bonding systems for anchoring reinforcement and submit for the Engineer's approval before use. The minimum embedment depth must be nine times the anchor diameter for threaded rod or bolt and twelve times the anchor diameter for reinforcing bar. Propose a drilling method that does not cut or damage existing reinforcing steel. Prepare at least three proof tests per anchor diameter and type in the same orientation in which they will be installed on the existing structure, on a separate concrete block, in the presence of the Engineer. The Engineer will proof test the proposed systems. The Engineer will base approval of the anchoring system on the following criteria:"
471	712.03.J.2	Change the third sentence of the first paragraph to read:

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		"Use a tension testing device for unconfined testing, in accordance with ASTM E 488."
473	712.03.L.2	Change the first sentence in the second paragraph of this subsection to read: "If using epoxy coated steel reinforcement, epoxy coat mechanical reinforcement splices in accordance with ASTM A 775."
473	712.03.L.3	Delete the existing first sentence in the first paragraph.
473	712.03.L.3	Change the third sentence of the first paragraph to read "Provide two test splices on the largest bar size."
473*	712.03.L.3	Change the sentence beginning "Demonstrate to the.... to read: "Demonstrate to the Engineer that splices have a tensile strength of 125 percent of the bar yield strength and high strength splices have a tensile strength of 150 percent of the bar yield strength."
488	713.02	Add the following as subsection 713.02.C: "C. <b>Structural Steel for Retrofitting and Welded Repairs.</b> Structural steel material used for retrofitting and welded repairs of primary members as defined in subsection 707.01.B must meet longitudinal Charpy V-Notch impact test requirements."
501	715.02	Add the following material reference above the two existing items: "Sealant for Perimeter of Beam Plates.....713"
508	715.03.D.1	Add the following sentence after the second paragraph of the subsection: "Apply sealant for perimeter of beam plates in accordance with subsection 713.03.F."
515	716.03.A	Delete the second paragraph of this subsection in its entirety.  Change the last sentence of the last paragraph of this subsection to read: "Provide a primer dry film thickness for the top flange between 4 mils and 10 mils."
519	716.04	Change the second sentence of the first paragraph of this subsection to read: "The unit price for <b>Field Repair of Damaged Coating (Structure No.)</b> includes the costs of making field repairs to the shop applied coating system; prime coat surfaces and exposed surfaces of bolts, nuts, and washers; and repairing stenciling."
521	717.04.B	This subsection should read "The unit price for <b>Drain Casting Assembly</b> includes the cost of providing and installing the downspout and, if necessary, the lower bracket to the drain casting."

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522	718.02	Change the section number "906" in the third material in the list to read "919."
533	718.04	Delete the following pay item from the list: Temp Casing.....Foot
533	718.04.B.2	Delete this subsection in its entirety.
533	718.04.B.3	Renumber this subsection as follows: <b>"2. Permanent Casing."</b>
540	802.04	Change "Non reinf" in the last pay item of the list with "Nonreinf".
545*	803.04.E	Change the second sentence of the second paragraph to read: "The unit price for <b>Railing for Steps</b> includes the cost of providing, fabricating, installing, and grouting the railing."
560	807.04	Delete the following pay item from the list: Guardrail Buffered End .....Each
560	807.04.B	Change the fifth paragraph of this subsection to read: "The Engineer will measure <b>Guardrail Salv</b> and <b>Guardrail, Mult, Salv</b> along the face of the rail (one face for multiple beams), including terminals and end shoes."
567	808.04.C	Change the first paragraph of this subsection to read: "The Department will not pay separately for protective fence required in accordance with subsection 104.07."
569	809.04.A	Change the first sentence to read: "The unit price for <b>Field Office, CI</b> __ includes the cost of setup, providing access, grading, maintaining, plowing snow, and utility hook-up charges."
570	809.04.B	Delete the existing second and third sentences in the first paragraph and replace them with the following: "The unit price for <b>Field Office, Utility Fees</b> includes the cost of monthly usage fees for electricity, gas, telephone service and charges, fuel for the stove, monthly water and sanitary service."
570	809.04.B	Change the existing fourth sentence in the first paragraph to read: "The Department will reimburse the Contractor for monthly usage fees for electricity, gas, telephone, water and sanitary charges incurred by the Department."
575	810.03.K	Change the subsection to read <b>"K. Drilled Piles for Cantilever and Truss Foundations.</b> Construct drilled piles for cantilever and truss foundations in accordance with section 718."

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578	810.03.N.2	Add the following sentence after the first sentence of the second paragraph on this page: "Mark each nut and bolt to reference the required rotation."
584	810.04	Delete the last pay item in the list: Truss Fdn Anchor Bolts, Replace.....Each
585	810.04.B.1	Change the second paragraph to read: "The unit prices for <b>Fdn, Truss Sign Structure Type</b> __, __ inch Dia, <b>Cased</b> and <b>Fdn, Cantilever Sign Structure Type</b> __, __ inch Dia, <b>Cased</b> include the cost of concrete, slurry, steel reinforcement, permanent casings, anchor bolts, excavation, and disposal of excavated material."
585	810.04.B.2	Change the second sentence of the first paragraph to read: "The unit prices for <b>Fdn, Truss Sign Structure Type</b> __, __ inch Dia, <b>Uncased</b> and <b>Fdn, Cantilever Sign Structure Type</b> __, __ inch Dia, <b>Uncased</b> include the cost of concrete, slurry, steel reinforcement, temporary casings, anchor bolts, excavation, and disposal of excavated material."
596	811.03.G	Delete this subsection in its entirety.
597*	811.03.H	Rename this subsection as follows: "G. <b>Raised Pavement Marker (RPM) Removal.</b> "
597*	811.04	Change "Crosshatching" in the last pay item of the list on this page to "Cross Hatching".
598*	811.04	Delete the following pay items from the list: Pavt Mrkg, (material), 4 inch, SRSM, (color).....Foot Pavt Mrkg, (material), 4 inch, SRSM, 2 <sup>nd</sup> Application, (color).....Foot  Add the following pay items to the list: "Pavt Mrkg, Polyurea, (legend).....Each Pavt Mrkg, Polyurea, (symbol).....Each"  Change the sixth item down the list to read: "Pavt Mrkg, Polyurea, __ inch, Cross Hatching, (color)"  Change the eleventh item down the list to read: "Rem Curing Compound, for Longit Mrkg, __ inch.....Foot"
599	811.04.B	Delete this subsection in its entirety.
599	811.04	Rename the following subsections as follows: "B. <b>Call Back.</b> C. <b>Pavement Marking Removal.</b> D. <b>Material Deficiency.</b> "

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602	812.03.D	Change the first sentence to read "Provide and maintain traffic control devices meeting the requirements in the ATSSA Quality Guidelines for Work Zone Traffic Control Devices and Features."
603	812.03.D.1	The last sentence on this page should read "Lay the sign behind the guardrail, with the uprights pointing downstream from the traffic, and place the support stands and ballasts close to the guardrail."
604	812.03.D.2	The first sentence of the fourth paragraph should read "Do not use burlap or similar material to cover Department or Local Government owned signs."
604	812.03.D.5	The fifth sentence of the first paragraph should read "Do not mix drums and cones within a traffic channeling sequence."
605	812.03.D.6.b	Change the first sentence of the first paragraph to read: "The Department will allow the nighttime use of 42-inch channelizing devices, in the tangent area only, on CPM and pavement marking of any duration where the use of plastic drums restricts proposed lane widths to less than 11 feet, including shy distance."
605	812.03.D.7	Add the following sentence after the first sentence of the first paragraph: "Place a shoulder closure taper in advance of the lighted arrows placed on the shoulders."
607	812.03.D.9	Delete the second paragraph of this subsection and replace with the following: "Link sections together to fully engage the connection between sections. Maintain the barrier with end-attachments engaged and within 2 inches of the alignment shown on the plans."
608	812.03.D.10.b	Delete the second sentence of the second paragraph of this subsection beginning with "Install sand module attenuators..."
608	812.03.D.10.b	Add the following sentence after the second paragraph of this subsection: "Install impact attenuation devices as shown on the plans, as directed by the Engineer, or both."
609	812.03.D.10.e	Delete the second paragraph of this subsection.
612	812.03.D.13	Delete the third paragraph of this subsection and replace it with the following: "Perform work on signals in accordance with the contract and to the requirements of NEMA TS-5 standard for those items not identified in the contract."
613*	812.03.D.14.a.iii	Change the sentence in this subsection to read "Place a terminal end shoe, in accordance with Standard Plan R-66-Series, and of appropriate type based on existing guardrail, on both blunt guardrail ends."



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615	812.03.F	The second sentence of the second paragraph of this subsection should read: "The Contractor may use a Type R temporary pavement marking cover, per subsection 812.03.D.12 when authorized by the Engineer."
616	812.03.F.2	The last sentence of the first paragraph should read: "If the removal equipment cannot collect all removal debris, operate a self-propelled sweeper capable of continuously vacuuming up the removal debris immediately behind the removal equipment."
617	812.03.G.3	The first sentence of the second paragraph should read: "Sweep the shoulder and remove debris prior to placing traffic on the shoulder and throughout the time the shoulder is used to maintain traffic."
617	812.03.G.4.a	Delete "48 inch by 48 inch" from the first sentence of this subsection.
618*	812.03.G.7	The first sentence of the first paragraph should read: "Clean barrier reflectors, plastic drums, 42 inch channelizing devices, tubular markers, signs, barricades, and attached lights in operation on the project to ensure they meet required luminosity."
619	812.03.G.8	The second sentence of the third paragraph from the end of the subsection should read: "Illuminate traffic regulator stations at night per subsection 812.03.H."
621	812.03.I.6	Delete "48 inch by 48 inch" from the second sentence of this subsection.
622*	812.03.J	The second paragraph should read "Apply one 2-inch wide horizontal stripe of red and white conspicuity tape along at least 50 percent of each side of, and across the full width of the rear of the vehicle or equipment."
622	812.04	Change the second item down the list to read: "Traf Regulator Control"
		Change the sixth item down the list to read: "Sign Cover, Type I"
626	812.04.I	Change the reference "812.04.E" in the first sentence to "812.04.D".
628	812.04.M.4	Add the following as the first sentence of this subsection: "The Engineer will not measure a temporary barrier ending move as <b>Conc Barrier Ending, Temp, Relocated</b> if it involves work defined in subsection 812.04.M.3."
629	812.04.N.1	Change the reference "811.04.D" in the second paragraph of this subsection to read "811.04.C".
630	812.04.S	Change the first sentence to read: "The Department will not make additional payments for traffic regulating, signing, arrow boards, and lighting systems for traffic regulator stations operated at night due to a temporary PTS system failure."

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634	813.03.C.3	Change the reference "903.07.A" in the paragraph of this subsection to read "907.07.B".
638	814.03.D	Change the second sentence to read: "Place the HMA mixture on the prepared base to a thickness of at least 2 inches, and to at least 220 pounds per square yard."
646	815.04	Change the first, third and fourth pay items in the list to read: "Site Preparation, Max (dollar) ..... Lump Sum Watering and Cultivating, First Season, Min (dollar)..... Lump Sum Watering and Cultivating, Second Season, Min (dollar) ..... Lump Sum"
646	815.04.C.1	Change the following pay item reading: "Watering and Cultivating, First Season, Min. (dollar)" to read "Watering and Cultivating, First Season, Min (dollar)" at two locations throughout the subsection.
646	815.04.C.1.b	Delete this subsection in its entirety.
646	815.04.C.1.c	Rename this subsection to read: "b. Removal and disposal of unacceptable plants."
646	815.04.C.2	Change the following pay item reading: "Watering and Cultivating, Second Season, Min. (dollar)" to read "Watering and Cultivating, Second Season, Min (dollar)" at three locations throughout the subsection.
647	815.04.C.2	Change the last paragraph of this subsection to read: "For each unacceptable plant identified, the Engineer will calculate a 50 percent reduction in the unit price for the relevant <b>(Botanical Name)</b> pay item, and will process a negative assessment for each unacceptable plant for that amount."
650	816.03.B	Delete the first paragraph of this subsection and replace with the following: "Conduct soil tests when called for in the contract or when directed by the Engineer. Provide soils tests results to the Engineer when testing is required. Provide and place fertilizer as indicated below and as indicated in the soils tests, if required."
650	816.03.B.1	Change the sentence to read: "For Class A fertilizer, evenly apply 176 pounds of chemical fertilizer nutrient per acre on a prepared seed bed."
650	816.03.B.2	Change the sentence to read: "For Class B fertilizer, evenly apply 120 pounds of chemical fertilizer nutrient per acre on a prepared seed bed."
650*	816.03.B.3	Change the sentence to read: "For Class C fertilizer, evenly apply 80 pounds of chemical fertilizer nutrient per acre on established turf."

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663*	819.01	<p>Delete the first paragraph in the subsection and replace it with the following:            "This work consists of providing operating electrical and lighting units; removing, salvaging, or disposing of existing electrical and lighting components; excavating, backfilling, restoring the site in accordance with section 816; and disposing of waste excavated materials. Complete this work in accordance with this section, section 820, and the contract and to the requirements of the NEC, the National Electrical Safety Code, and the MDLARA for those items not identified in the contract."</p> <p>Change the third sentence of the second paragraph in this subsection to read:            "Contact the MDLARA for electrical service inspection and pay the applicable fees."</p>
671	819.03.F.1	<p>Change the paragraph to read:            "Install light standard foundations as shown on the plans and the standard plans, as applicable."</p>
673	819.03.G.4.b	<p>Change the last sentence of the first paragraph to read:            "Tighten the anchor bolts to a snug tight condition as described in the third paragraph of subsection 810.03.N.2 ensuring the lock washer is completely compressed."</p>
673	819.03.G.4.b	<p>Delete the first two sentences of the second paragraph and replace with the following:            "Tighten bolts connecting the pole to the frangible base to a snug tight condition. Snug tight is the tightness attained by a few impacts of an impact wrench, or the full effort of a person using an ordinary spud wrench. The lock washers must be fully compressed."</p>
678	819.04	<p>Change the ninth pay item in the list to read:            "DB Cable, 600V, 1/C# (size)..... Foot"</p>
678*	819.04	<p>Delete the last item in the list on this page reading:            "DB Cable, in Conduit, 600 Volt, (number) 1/C# (size)..... Foot"</p>
679	819.04	<p>Change the first pay item in the list to read:            "DB Cable, in Conduit, 600V, 1/C# (size)..... Foot"</p>
679	819.04	<p>Change the sixth pay item in the list to read:            "Cable, P.J., 600V, 1, (size) ..... Foot"</p>
679	819.04	<p>Change the second pay item from the bottom of the list to read:            "Conc Pole, Fit Up, (type) ..... Each"</p>
680	819.04	<p>Change the first paragraph to read:            "Unless otherwise required, the unit prices for the pay items listed in this subsection include the cost of excavation, granular material, backfill,</p>

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		and disposal of waste excavated material. If the contract does not include pay items for restoring the site in kind in accordance with section 816, the Department will consider the cost of restoration included in the pay items listed in this subsection."
680	819.04.A	Add the following paragraph after the first paragraph of the subsection. "The unit prices for <b>Conduit, Rem</b> include the cost of removing the type, number, and size of conduit shown on the plans."  Change the third paragraph of the subsection to read: "The unit prices for <b>Conduit, (type), __ inch</b> and <b>Conduit, DB, (number), __ inch</b> include the cost of installing the type, number, and size of conduit shown on the plans, and installing marking tape."
681	819.04.B	Change the last paragraph of the subsection to read: "The unit price for <b>DB Cable, in Conduit, Rem</b> includes the cost of removing all cables from the existing conduit measured per lineal foot of conduit."
681	819.04.C	Change the first paragraph of the subsection to read: "The unit prices for <b>Cable, Rem</b> and <b>Cable, (type), Rem</b> include the cost of dead ending, circuit cutting, installing guying, work required to leave circuits operable, and disposing of the removed cables, wire, hardware, and other appurtenances."
681	819.04.D	Change the first paragraph of the subsection to read: "The unit price for <b>Cable, Pole, (type), Dismant</b> includes the cost of dismantling and off-site disposal of the following:"
685	820.01.D	Change the sentence to read: "Excavate, backfill, restore the site in kind in accordance with section 816, and dispose of excess or unsuitable material;"
688	820.03.C	Change the seventh paragraph of this subsection to read: "Tighten top anchor bolt nuts, snug, in accordance with the first four paragraphs of subsection 810.03.N.2, except beeswax will not be required."
696	820.04	Add the following pay items to the list: "Pedestal, Pushbutton, Alum.....Each Pedestal, Pushbutton, Rem.....Each"
697	820.04.A.2	Change the sentence to read: "If the contract does not include pay items for restoring the site in kind in accordance with section 816, the Department will consider the cost of restoration included in the pay items listed in this subsection."
698	820.04.B	Delete the second paragraph of this subsection found on this page.
698	820.04.C	Change " <b>Fdns</b> " to read " <b>Fdn</b> " in four instances in this subsection.

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701	820.04.J.3	Change the sentence to read: "Installing wires in the saw slots and to the handholes;"
701.	820.04.J	Add the following as a new subsection: "7. A 3/4 inch minimum flexible conduit (non-metallic and rated for underground use) from the pavement to the handhole."
706	821.01.B	Change the website address listed after the second paragraph on this page to read: <u>"<a href="http://www.ngs.noaa.gov/heightmod/GuidelinesPublications.shtml">http://www.ngs.noaa.gov/heightmod/GuidelinesPublications.shtml</a>"</u>
711	822.03.B	Change the second paragraph to read: "If corrugations are required on concrete shoulders and the method of installation is not shown on the plans or directed by the Engineer, construct corrugations by grinding, or cutting."
718*	823.03.U	Change "MDNRE" to "MDEGLE" in four instances in this subsection.
720	823.04	Change the pay item seventh from the bottom of the list to read: "Water Shutoff, Adj, Temp, Case ____"
730	824.03.Q	Change the third sentence of the fourth paragraph to read: "Ensure placement of monumentation in accordance with section 821."
730	824.03.Q	Change the first sentence of the last paragraph to read: "The Department will not pay for work dependent on lost or destroyed stakes until the Contractor replaces the stakes."
732	824.04	Change the first sentence of the first paragraph following the list of pay items to read: "If the Engineer determines the Contractor will perform staking as extra work, the Department will pay for staking in accordance with section 103."
733	824.04	Change the left column header in Table 824-2 to read: <b>"Percent of Original Contract Amount Earned"</b>
739	902.02	Change the last aggregate testing description to read: "Determining Specific Gravity and Absorption of Fine Aggregates.....MTM 321"
742	902.03.C.1.a	Change the sentence to read: "Coarse aggregate includes all aggregate particles greater than or retained on the 3/4-inch sieve."
742	902.03.C.2.a	Change the sentence to read: "Intermediate aggregate includes all aggregate particles passing the 3/4-inch sieve through those retained on the No. 4 sieve."

<b>Page</b>	<b>Subsection</b>	<b>Errata</b>
742	902.03.C.2.b.iii	Change the sentence to read as follows: "Maximum Loss by Washing per MTM 108 of 3.0 percent".
744	902.07	Delete the fourth paragraph of the subsection and replace it with the following: "The Engineer will only allow the use of granular material produced from crushed portland cement concrete for embankment and as trench backfill for non-metallic culvert and sewer pipes without associated underdrains. However, granular material produced from crushed portland cement concrete is not permitted as swamp backfill, nor within the top 3 feet below subgrade regardless of the application.
746*	902.11	Change the Item of Work by Section Number column in Table 902-1 for the 6AA row to read: "406, 601, 602, 706, 708, 806".  Change the Item of Work by Section Number column in Table 902-1 for the 6A row to read: "206, 401, 402, 406, 601, 602, 603, 706, 806".  Change the Item of Work by Section Number column in Table 902-1 for the 34R row to read: "401, 404, 406".
751*	902.11	Replace Table 902-6 with the Table 902-6 below.
751	Table 902-7	Under the Material column in the fourth row change the "FA2" to read "2FA".
751	Table 902-7	Under the Material column in the fifth row change the "FA3" to read "3FA".
752	Table 902-8	Under the Material column in the fourth row change the "FA2" to read "2FA".
752	Table 902-8	Under the Material column in the fifth row change the "FA3" to read "3FA".
761	Table 904-2	Delete the footnote f and any other reference to footnote f from the table.
767	905.03	Change the first sentence of the first paragraph to read: "Deformed bars, must meet the requirements of ASTM A 706, ASTM A 615, or ASTM A 996 (Type R or Type A only) for Grade 60 steel bars, unless otherwise required".
767*	905.03	Change the first sentence of the second paragraph to read: "Unless otherwise specified, spiral reinforcement must meet the requirements of plain or deformed Grade 40 steel bars of ASTM A 615, ASTM A 996 (Type A), or the requirements of cold-drawn wire of ASTM A 1064".
767	905.03	Change the first sentence of the third paragraph to read: "Bar reinforcement for prestressed concrete beams must meet the requirements of ASTM A 996 (Type R) for Grade 60 steel bars, except

Page	Subsection	Errata
		the Engineer will allow bar reinforcement that meets the requirements of ASTM A 615 or ASTM A 996 (Type A) for Grade 40 steel bars for stirrups in prestressed concrete beams".
768	905.03.C	Change the first sentence in the subsection to read: "Epoxy coated steel reinforcement, if required, must be coated in accordance with ASTM A 775, with the following exceptions and additions."
768	905.03.C.3	Change the first sentence of this subsection to read: "Include written certification that the coated reinforcing bars were cleaned, coated, and tested in accordance with ASTM A 775 with the coating applicator."
768	905.05	Change the first sentence of the first paragraph to read: "Deformed steel bars must meet the requirements of ASTM A 706 or the requirements for Grade 40, Grade 50, or Grade 60 of ASTM A 615 or ASTM A 996 (Type R or Type A only)".
768	905.06	Delete this subsection in its entirety and replace it with the following: "Deformed wire fabric for prestressed concrete and fabric for concrete pavement reinforcement must meet the requirements of ASTM A 1064 and fabricated as required."
772*	906.07	Change the first paragraph to read: "High-strength bolt fasteners for structural joints must meet the requirements of ASTM F 3125 Grade A 325 Type 1 bolts. High-strength nuts for structural joints must meet the requirements of ASTM A 563 Grade DH or AASHTO M 292 Grade 2H. High-strength washers for structural joints must meet the requirements of ASTM F 436 Type 1 for circular, beveled, clipped circular, and clipped beveled washers."  Change the second sentence of the second paragraph of this subsection to read: "Galvanized nuts must be tapped oversize in accordance with ASTM A 563 and meet Supplementary Requirements S1, Lubricant and Rotational Capacity Test for Coated Nuts and S2, Lubricant Dye."
777*	907.03.D.2.a	Change the first sentence of the second paragraph to read: "Angle sections must be nominal 2½ inch by 2½ inch by ¼ inch."
777*	907.03.D.2.b	Change the first sentence of the first paragraph to read: "Angle section braces must be nominal 1¾ inch by 1¾ inch by ¼ inch or nominal 2 inch by 2 inch 3/16 inch."
782	908.04	Change the first sentence of the first paragraph of this subsection to read: "Steel castings for steel construction must meet the requirements of ASTM A 148 for Grade 60/90 carbon steel castings, as shown on the plans, unless the Engineer approves an alternate in writing."

Page	Subsection	Errata
784*	908.09.C	<p>Change this subsection to read:</p> <p>"C. <b>Hardware.</b> Railing anchor studs must meet the requirements of ASTM A 449 Type 1. Heavy hex nuts must meet the requirements of ASTM A 563. Bolts, used as rail fasteners, must meet the requirements of ASTM F 3125 Grade A 325, Type 1. Where called for, round head bolts must meet the requirements of ASTM A 449 Type 1. The material for the railing hand hole screws must meet the requirements of ASTM A 276, Type 304. All nuts must meet the requirements of ASTM A 563 Grade DH or AASHTO M 292 Grade 2H. All flat washers must meet the requirements of ASTM F 436. Lock washers must be steel, regular, helical spring washers meeting the requirements of ANSI B18.21.1 - 1972. Bolts, nuts, washers and other hardware must be hot-dip galvanized in accordance with AASHTO M 232. Galvanized nuts must be tapped oversize in accordance with ASTM A 563, and meet Supplementary Requirements S1, Lubricant and Rotational Capacity Test for Coated Nuts, and S2, Lubricant Dye."</p>
784	908.11.A	<p>Change the first sentence of the first paragraph to read:</p> <p>"Steel beam sections, backup elements, terminal end shoes, and special end shoes must meet the requirements of AASHTO M 180, for Class A guardrail."</p>
785*	908.11.B	<p>Change the second paragraph to read:</p> <p>"Bolts, nuts, and round washers for guardrail, other than at bridge barrier railings, must meet the requirements of ASTM A 307 (Grade A), ASTM A 563 (Grade A with Supplementary Requirements S1 of ASTM A 563), and ASTM F 436, respectively."</p> <p>Change the third paragraph to read:</p> <p>"Washers, other than round washers, for guardrail must meet the requirements for circular washers in ASTM F 436 except that the dimensions must be as shown on the plans."</p> <p>Change the fifth paragraph to read:</p> <p>"Bolts, nuts, and washers for connections at bridge barrier railings must conform to ASTM F 3125 Grade A 325 Type 1 galvanized high-strength structural bolts with suitable nuts and hardened washers."</p>
787	908.14.B	<p>Add the following sentence to the end of the third paragraph of this subsection:</p> <p>"Exposed threaded ends of anchor bolts must be galvanized a minimum of 20 inches."</p> <p>Change the sixth paragraph in this subsection to read:</p> <p>"Provide washers meeting the requirements of ASTM F 436 for circular washers."</p>
787	908.14.B	<p>Change the second sentence of the fourth paragraph to read "After coating, the maximum limit of pitch and major diameter for bolts with a</p>



Page	Subsection	Errata
		diameter no greater than 1 inch may exceed the Class 2A limit by no greater than 0.021 inch, and by no greater than 0.031 inch for bolts greater than 1 inch in diameter".
787*	908.14.C	Change the first paragraph to read "Provide either four or six high strength anchor bolts per the contract plans, meeting the mechanical requirements of ASTM F 1554, for Grade 105, with each standard. Anchor bolts for traffic signal strain poles must meet the requirements of subsection 908.14.B with the following exceptions and additions:"
789	909.03	Change the second sentence of the second paragraph to read: "As an alternative to the AASHTO M 36 requirements for metal pipe, the Contractor may use gasket material meeting the low temperature flexibility and elevated temperature flow test requirements of ASTM C 990, excluding the requirements for softening point, flashpoint and fire point."
793	909.06	Change the first sentence of the second paragraph of this subsection to read: "Provide Corrugated Polyvinyl Chloride Pipe (CPV) and required fittings meeting the requirements of AASHTO M 304."
793*	909.05.D	Change the second sentence of the paragraph to read "Provide a continuous welded joint to create a watertight casing that is capable of withstanding handling and installation stresses. Perform field welding by the SMAW process using E7018 electrodes."
794*	909.08.A	Change the first sentence to read: "Provide bridge deck downspouts of PE pipe meeting the requirements of ASTM F 714, PE 4710, DR 26."
804	Table 909-9	In the note area at the bottom of the table change the designation of the second note from "c." to "b."
811	910.04	Add the following sentence to the end of this subsection: "Fabricate silt fence according to subsection 916.02."
814	Table 911-1	In the 4 <sup>th</sup> row of the 5 rows in the table change the Property listed as "Total Organic Content (TOC)" to read "Total Organic Carbon (TOC)".
829*	912.08.K	Replace Table 912-10 with the Table 912-10 below.
833*	913.03.B	Change the first sentence of the first paragraph to read: "Clay brick, to construct manholes, catch basins, and similar structures, must meet the requirements of ASTM C 32, for Grade MS."
837*	914.04	Add the following as subsection 914.04.C: " <b>C. Lubricant-Adhesive for Neoprene Joint Seals.</b> The lubricant-adhesive must be a single-component moisture-curing polyurethane and aromatic hydrocarbon solvent mixture meeting ASTM D 2835, Type

Page	Subsection	Errata
		I. Ship in containers plainly marked with the lot or batch number of the material and date of manufacture. Store at temperatures between 58 and 80°F. Do not exceed 12 months shelf-life prior to use."
840	914.08	Change the first sentence of the second paragraph to read: "Straight tie bars for end-of-pour joints must consist of bars of the diameter and length shown on the plans meeting the requirements of ASTM A 615, ASTM A 706, or ASTM A 996 (Type R or Type A only)".
840*	914.09.A	Change the first sentence of the first paragraph to read: "Straight tie bars for longitudinal pavement joints must consist of bars of the diameter and length shown on the plans meeting the requirements of ASTM A 615, ASTM A 706, or ASTM A 996 (Type R or Type A only)".
840	914.09.B	Change the first sentence of the first paragraph to read: "Bent tie bars for bulkhead joints must consist of bars of the diameter and length shown on the plans."
841*	914.13	In the first sentence of this subsection change "ASTM D 1248, for Type III, Class B" to read "ASTM D 4976, Group 2, Class 4, Grade 4".
844	916.01.A	Change the first sentence to read: "Cobblestone must consist of rounded or semi-rounded rock fragments with an average dimension from 3 inches to 10 inches."
845	916.01.D.1	Change the second sentence to read: "Checkdams for ditch grades 2 percent or greater must be constructed using cobblestone or broken concrete ranging from 3 inches to 10 inches in size."
851*	917.10.B.1	Delete the paragraph and replace it with the following: "1. <b>Class A.</b> Provide and apply Class A chemical nutrient fertilizer either according to MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass, except the maximum single application rate of nutrient will be 48 pounds per acre, when soil tests are required or as indicated in subsections 917.10.B.1.a and 917.10.B.1.b."
851	917.10.B.1	Add the MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass, found below, after the first paragraph of this subsection.
853	917.15.B.1	Change the second sentence of the subsection to read: "The net must meet the requirements of subsection 917.15.D and be capable of reinforcing the blanket to prevent damage during shipping, handling, and installation."
857	918.01	Add the following two paragraphs following the first paragraph of this subsection: "Wall thickness and outside diameter dimensions must conform to ASTM D 1785 for smooth-wall schedule 40 and 80 PVC conduit

Page	Subsection	Errata
		material. The Department will allow no more than 3 percent deviation from the minimum wall thickness specified.
		Wall thickness range must be within 12 percent in accordance with ASTM D 3035 for smooth-wall coilable schedule 40 and 80 PE conduit."
858	918.01.E	Delete the first three sentences of the second paragraph shown on page 858.
863	918.06.F.1	Delete the third paragraph in this subsection in its entirety and replace it with the following: "Provide smooth or deformed welded wire fabric in accordance with ASTM A 1064."
864	918.07.C	Change the first sentence of the first paragraph to read: "Provide anchor bolts, nuts, and washers meeting the requirements of subsection 908.14.A and subsection 908.14.B."
864	918.07.C	Delete the second sentence of the second paragraph.
864	918.07.C	Change the third sentence to read: "Provide anchor bolts threaded 4 inches beyond the anchor bolt projection shown on the plans."
867	918.08.C	Change the last sentence of the first paragraph on this page to read: "Galvanize bolts, nuts, washers, and lock washers as specified in subsection 908.14.B."
867	918.08.C	Change the last sentence of the subsection to read: "Provide each frangible base with manufacturer access covers as shown on the plans."
867*	918.08.D	Delete this subsection in its entirety and replace with the following: "Provide galvanized anchor bolts, studs, nuts, couplings, and washers in accordance with subsection 908.14."
879	918.10.J	Change the third sentence of the second paragraph of this subsection to read: "Provide anchor bolts and associated nuts, washers, and hardware meeting the requirements of subsection 908.14."
887	919.06	Change the second paragraph to read: "Shims must be fabricated from brass shim stock or brass strip meeting the requirements of ASTM B 36, for copper alloy UNS No. C26000, half-hard rolled temper, or fabricated from galvanized sheeting meeting the requirements of ASTM A 653, for Coating Designation G 90."
887	919.07.C	Change the sentence to read:

Page	Subsection	Errata
		"Galvanized high-strength steel bolts, nuts, and washers for connecting arm connection flanges must meet the requirements of subsection 906.07."
903	921.03.D	Delete the last three sentences of the first paragraph of this subsection.
914	921.05.D	Change the first sentence of this subsection to read: "Provide anchor bolts meeting the requirements of subsection 908.14.C, including elongation and reduction of area requirements."
916	921.07	Change the first sentence of the first paragraph to read: "Provide LED case signs internally illuminated by LEDs and changeable message case signs internally illuminated with LED light sources."
936	922.04.B	In the first sentence of the first paragraph change the "R-52" to "R-126".
936	922.04.B	Add the following to the end of the first paragraph: "Hardware used to connect the end section to the barrier must meet the requirements of NCHRP 350 or MASH (Test Level 3 or higher)."
936	922.04.B	In the first sentence of the second paragraph delete "R-52".
936	922.04.B	Change the fourth paragraph of this subsection to read as follows: For all endings requiring impact attenuators provide a NCHRP-350 Test Level 3 or MASH Test Level 3 approved impact attenuation system, unless otherwise approved by the Engineer.
952	Pay Item Index	Change the following pay items to read: "Conc Barrier, Rem .....123 204" "Conc Pole, Fit Up, (type) .....679 819"
953*	Pay Item Index	Delete the following pay item reading: "DB Cable, in Conduit, 600 Volt, (number) 1/C# (size) .....678 819"
957	Pay Item Index	Delete the following pay item from the list: Guardrail Buffered End .....560 807
960	Pay Item Index	Change the following pay item to read: "Mobilization, Max (dollar) .....107 150"
961	Pay item Index	Delete the following pay items from the list: Pavt Mrkg, (material), 4 inch, SRSM, (color) .....598 .....811 Pavt Mrkg, (material), 4 inch, SRSM, 2 <sup>nd</sup> Application, (color) .....598 .....811
961	Pay Item Index	Change the following pay items in the list to read: Pavt Mrkg, Ovly Cold Plastic, 12 inch, Cross Hatching, (color) Pavt Mrkg, Polyurea, __ inch, Cross Hatching, (color)  Add the following pay items to the list:

Page	Subsection	Errata		
		"Pavt Mrkg, Polyurea, (legend).....	598.....	811
		Pavt Mrkg, Polyurea, (symbol).....	598.....	811
		Pedestal, Pushbutton, Alum.....	696.....	820
		Pedestal, Pushbutton, Rem.....	696.....	820"
962	Pay Item Index	Change the following pay items in the list to read: "Pile Driving Equipment, Furn (Structure No.) Pile, Galv (Structure No.)"		
963	Pay Item Index	Change the following pay item to read: "Rem Curing Compound, for Longit Mrkg, ___ inch .....	598	811"
964	Pay Item Index	Change the following pay item to read: "Sewer, Cl __, __ inch, Jacked in Place .....	200	402"
		"Sign Cover, Type I .....	622	812"
965*	Pay Item Index	Change the following pay item in the list to read: "Steel Casing Pipe, ___ inch, Tr Det ___ Site Preparation, Max (dollar) .....	646	815"
966	Pay Item Index	Change the following pay item to read: "Structures, Rem (Structure No.).....	123	204"
966	Pay Item Index	Delete the following pay item form the list; Temp Casing.....	533.....	718
967*	Pay Item Index	Delete the following pay item from the list; Truss Fdn Anchor Bolts, Replace.....	584.....	810
967	Pay Item Index	Change the following pay item in the list to read: "Traf Regulator Control"		
968*	Pay item Index	Change the following pay item in the list to read: "Water Shutoff, Adj, Temp, Case ___ Watering and Cultivating, First Season, Min (dollar).....	646	815
		Watering and Cultivating, Second Season, Min (dollar) .....	646	815"
993	General Index	Change "Shop Plans (see Plans and Working Drawings)" to read "Shop Drawings (see Plans and Working Drawings)".		

Table 701-1 Concrete Structure Mixtures													
Concrete Grade (e,h)	Section Number Reference (i)	Cement Content per cyd (b,c)		Type A, D or no Admixture	Type MR, F, or G Admixtures (g)			Minimum Strength of Concrete (f)					
		lb	sack		Before Admixture	After Admixture (Type MR)	After Admixture (Type F or G)	Flexural (psi)		Compressive (psi)			
								7 Day	14 Day		28 Day (Class Design Strength)	7 Day	14 Day
D (a)	706, 711, 712	658 (d)	7.0	0 - 3	0 - 3	0 - 6	0 - 7	625	700	725	3,200	4,000	4,500
S1	705	611	6.5	3 - 5	0 - 3	3 - 6	3 - 7	600	650	700	3,000	3,500	4,000
T	705, 706	611	6.5	3 - 7	0 - 4	3 - 7	3 - 8	550	600	650	2,600	3,000	3,500
S2 (a)	401, 705, 706, 712, 713, 801, 802, 803, 810	564	6.0	0 - 3	0 - 3	0 - 6	0 - 7	550	600	650	2,600	3,000	3,500
S3	402, 403, 803, 804, 806	526 (d)	5.6	0 - 3	0 - 3	0 - 6	0 - 7	500	550	600	2,200	2,600	3,000
		517	5.5					500	550	600	2,200	2,600	3,000
		489 (d)	5.2										
a. Unless otherwise required, use Coarse Aggregate 6AA or 17A for exposed structural concrete in bridges, retaining walls, and pump stations.													
b. Do not place concrete mixtures containing supplemental cementitious materials unless the local average minimum temperature for the next 10 consecutive days is forecast to be above 40 °F. Adjustments to the time required for opening to construction or vehicular traffic may be necessary. Cold weather protection may be required, as described in the quality control plan. The restriction does not apply to Grade S1 concrete in foundation piling below ground level or Grade T concrete in tremie construction.													
c. Type III cement is not permitted													
d. Use admixture quantities specified by the Qualified Products Lists to reduce mixing water. Admixture use is required for Grade D, Grade S2, and Grade S3, concrete with a reduced cement content. Use a water-reducing retarding admixture at the required dosage for Grade D concrete to provide the setting retardation required. When the maximum air temperature is not forecast to exceed 60 °F for the day, the Contractor may use a water-reducing admixture or a water-reducing retarding admixture. Ensure Grade D concrete in concrete diaphragms contains a water-reducing admixture, or a water-reducing retarding admixture. For night casting, the Contractor may use a water-reducing admixture in lieu of water-reducing retarding admixture, provided that the concrete can be placed and finished prior to initial set.													
e. The mix design basis for bulk volume (dry, loose) of coarse aggregate per unit volume of concrete is 68% for Grade S1, and 70% for Grade D, Grade S2, Grade T, and Grade S3.													
f. The Contractor may use flexural strength to determine form removal. Use compressive strength for acceptance in other situations.													
g. MR = Mid-range.													
h. The Engineer will allow the use of an optimized aggregate gradation as specified in section 604.													
i. Section Number Reference:													
401	Culverts	711	Bridge Railings	803	Concrete Sidewalk, Sidewalk Ramps, and Steps								
402	Storm Sewers	712	Bridge Rehabilitation-Concrete	804	Concrete Barriers and Glare Screens								
403	Drainage Structures	713	Bridge Rehabilitation-Steel	806	Bicycle Paths								
705	Foundation Piling	801	Concrete Driveways	810	Permanent Traffic Signs and Supports								
706	Structural Concrete Construction	802	Concrete Curb, Gutter and Dividers										

Table 902-6 Superpave Final Aggregate Blend Physical Requirements													
Est. Traffic (million ESAL)	Mix Type	Percent Crushed Minimum Criteria		Fine Aggregate Angularity Minimum Criteria		% Sand Equivalent Minimum Criteria		Los Angeles Abrasion % Loss Maximum Criteria		% Soft Particles Maximum Criteria (b)		% Flat and Elongated Particles Maximum Criteria (c)	
		Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course
< 0.3	LVSP	55/—	—	—	—	40	40	45	45	10	10	—	—
< 0.3	E03	55/—	—	—	—	40	40	45	45	10	10	—	—
≥0.3 <1.0	E1	65/—	—	40	—	40	40	40	45	10	10	—	—
≥1.0 - < 3	E3	75/—	50/—	40(a)	40(a)	40	40	35	40	5	5	10	10
≥3 - <10	E10	85/80	60/—	45	40	45	45	35	40	5	5	10	10
≥10 - <30	E30	95/90	80/75	45	40	45	45	35	35	3	4.5	10	10
≥30 - <100	E50	100/10 0	95/90	45	45	50	50	35	35	3	4.5	10	10

(a) For an E3 mixture type that enters the restricted zone as defined in Table 902-5, the minimum is 43. If these criteria are satisfied, acceptance criteria and associated incentive/disincentive or pay adjustment tied to this gradation restricted zone requirement included in contract, do not apply. Otherwise, final gradation blend must be outside of the restricted zone.

(b) Soft particles maximum is the sum of the shale, siltstone, ochre, coal, clay-ironstone and particles that are structurally weak or are non-durable in service.

(c) Maximum by weight with a 1 to 5 aspect ratio.

Note: "85/80" denotes that 85 percent of the coarse aggregate has one fractured face and 80 percent has at least two fractured faces.

<b>Table 912-10</b>				
<b>Minimum Retention Requirements</b>				
<b>Preservative</b>	<b>Minimum Retention, (pcf)</b>			<b>AWPA Standard</b>
	<b>Guardrail Posts</b>	<b>Sign Posts</b>	<b>Blocks</b>	
Pentachlorophenol	0.60	0.50	0.40	A6
CCA, ACZA	0.60	0.50	0.40	A11
ACQ (a)	0.60	Not Allowed	0.40	A11
CA-B (a)	0.31	Not Allowed	0.21	A11
CA-A (a)	0.31	Not Allowed	0.15	A11
Other Waterborne preservatives	AWPA Commodity Specification A, Table 3.0, Use Category 4B	Not Allowed	AWPA Commodity Specification A, Table 3.0, Use Category 4A	A11
a. Non-Metallic washers or spacers are required for timber and lumber treated with ACQ or CA placed in direct contact with aluminum. Do not use with sign posts.				



**MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass**  
**3/8/2012**

		Sand based rootzone establishment	Golf greens and tees est. or mature; Kentucky bluegrass or perennial ryegrass athletic fields est. or mature; sand based rootzone mature	Lawns, golf course fairways; establishment or mature	Establishment without soil test
Bray P1, Mehlich 3 Soil Test Value (ppm): pH<7.4	Olsen Soil Test Value (ppm) pH>7.4	Recommendation (lbs. P <sub>2</sub> O <sub>5</sub> /1000 ft. <sup>2</sup> )	Recommendation (lbs. P <sub>2</sub> O <sub>5</sub> /1000 ft. <sup>2</sup> )	Recommendation (lbs. P <sub>2</sub> O <sub>5</sub> /1000 ft. <sup>2</sup> )	Recommendation (lbs. P <sub>2</sub> O <sub>5</sub> /1000 ft. <sup>2</sup> )
0	0	4.4	3.4	2.5	2.5 lbs. year (Maximum single application of 1.5 lbs.)
2	1.3	4.1	3.1	2.2	
4	2.7	3.9	2.7	1.9	
6	4	3.6	2.4	1.6	
8	5.3	3.4	2.0	1.3	
10	6.7	3.1	1.7	1.0	
12	8	2.8	1.4	0.7	
14	9.3	2.6	1.0	0.4	
16	10.7	2.3	0.7	0.1	
18	12	2.1	0.3	0.0	
20	13.3	1.8	0.0		
22	14.7	1.5			
24	16	1.3			
26	17.3	1.0			
28	18.7	0.8			
30	20	0.5			109 lbs/acre year (maximum single application of 65 lbs/acre)
32	21.3	0.2			
34	22.7	0.0			

Web resources: [www.turf.msu.edu](http://www.turf.msu.edu) or [www.bephosphorusmart.msu.edu](http://www.bephosphorusmart.msu.edu)

CITY OF FLINT  
SPECIAL  
PROVISION FOR  
WATER MAIN CONSTRUCTION

COF:SDA

1 of 21

May 2020

**a. Description.** Water main work includes all labor, equipment, and materials necessary to complete the water main, water services, hydrants, and other related construction.

**b. Materials.** All materials shall be of United States manufacture. The Contractor shall direct all requests for any variances to the Engineer in writing. The manufacturer shall supply a sworn statement (certification) that all pipe, hydrant valves, fittings, gaskets, and all appropriate appurtenances furnished comply with the standards referenced in these specifications. Catalog cuts for all materials to be installed shall be provided to the Engineer for review at the Pre-construction Meeting. No materials shall be installed prior to the approval of the catalog cuts by the Engineer.

1. Ductile Iron Pipe. Ductile iron pipe shall meet or exceed the requirements of ANSI/AWWA C150/A21.50-81 for zinc-coated Thickness Class 52 or 54 and ANSI/NSF Standard 61. Ductile iron pipe shall be cement-mortar lined in accordance with ANSI/AWWA C104/A21.4. Gaskets for ductile iron pipe shall be push-on type and shall meet ANSI/AWWA C111/A21.11. One gasket per length of pipe shall be furnished. Gaskets shall be compatible with the pipe joint furnished. Gasket lubrication meeting the requirements of ANSI/AWWA C111/A21.11 shall be furnished for each gasket. ALL hydrant leads shall be Ductile iron pipe.

2. The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m<sup>2</sup> of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The coating system shall conform in every respect to ISO 8179-1 "Ductile iron pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer. Second edition 2004-06-01.

3. Polyethylene Encasement. Ductile iron water main, fittings, and appurtenances and non-copper service connections shall be encased with polyethylene in accordance with ANSI/AWWA C105/A21.5. Encasement material shall be linear low-density polyethylene film with a minimum thickness of 8 millimeters (mil).

4. Polyvinyl Chloride (PVC) Pipe. PVC pipe shall meet the requirements of ANSI/AWWA C900 for Pressure Class 305, DR14 pipe and ANSI/NSF Standards 14 and 61. All PVC pipe shall be stamped "NSF-pw" on the exterior pipe wall. PVC pipe is not allowed where it may be exposed to significant concentrations of pollutants comprised of low molecular weight petroleum products or organic solvents or their vapors. Joints shall be gasket, push-on type. Joints and gaskets shall meet the requirements of ASTM D3139 and ASTM F477. One gasket per length of pipe shall be furnished. Gaskets shall be compatible with the pipe joint furnished. Gasket lubrication shall be furnished for each gasket.

5. High Density Polyethylene (HDPE) – Directional Drilling Only: Pipe shall be manufactured from a PE 3608 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material will meet the specifications of ASTM D 3350 with a cell classification of 34564C. Pipe shall have a manufacturing standard of ASTM F 714. Pipe shall be a minimum

of DR 11 (200psi WPR) or Engineer approved replacement.

The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material.

6. Fittings. All fittings shall be ANSI/AWWA C110/A21.10 or C153/A21.53, mechanical joint type, and be cement-mortar lined in accordance with ANSI/AWWA C104/A21.4.

7. Mechanical Joint Bolts. Mechanical joint bolts (T-bolts) shall be high-strength, low-alloy steel meeting ANSI/AWWA C111/A21.11 requirements.

8. Mechanical Joint Restraints. Mechanical Joint Restraint shall be MJ FIELD LOK® Gasket or devices that consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11. All nuts, bolts, and lugs shall be 304 stainless steel or epoxy coated. The gripping wedges shall have individually actuated wedges with torque limiting twist off nuts. Gland body, wedges, and wedge actuating components shall be ductile iron conforming to ASTM A536.

9. Ductile iron pipe mechanical joint restraints shall have a working pressure rating of 350 psi and be EBAA Iron Megalug Series 1100, Uni-Flange Series UFR 1400, or Engineer approved equal. All nuts, bolts, and lugs shall be 304 stainless steel or epoxycoated.

10. PVC Pipe mechanical joint restraints shall meet the requirements of ASTM F1674 and have a working pressure rating of 200 psi. All nuts, bolts, and lugs shall be 304 stainless steel or epoxy coated. PVC joint restraints shall be EBBA Iron Series 2000PV, Uni-Flange Series UFR 1500-C, or Engineer approved equal.

11. MJ FIELD LOK® Gasket. The restraint system shall be completely integral to the gasket, requiring only standard mechanical joint assembly techniques. All nuts, bolts, and lugs shall be 304 stainless steel or epoxy coated. The restraining system for ductile iron shall be pressure rated to 350 psi. The restraining system for PVC shall be rated at a 2:1 safety factor for the pipe on which it is installed. The restraining system shall be rated in accordance with the performance requirements of ANSI/AWWA C111/A21.11 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

12. Pipe Bell Restraints. Ductile iron pipe bell restraint shall be locking gasket or devices that consist of a restraint ring on the spigot joined to a ring behind the bell. The restraint rings shall have individually actuated wedges with torque limiting twist off nuts. Bell restraint rings and wedging components shall be made of ductile iron conforming to ASTM A536. Connecting tie rods shall be made of low alloy steel that conforms to ANSI/AWWA C111/A21.11. The assembly shall have a rated pressure of 350 psi. Ductile iron bell restraint shall be the EBAA Iron Series 1700 Megalug restraint harness, Uni-Flange Series UFR 1450, or Engineer approved equal.

Locking Gasket. Locking gaskets for ductile iron pipe shall be a boltless, integral restraining system and shall be rated for 350 psi in accordance with the performance requirements of ANSI/AWWA C111/S21.1. Gaskets for TYTON® joints shall be Field Lok 350 manufactured by

U.S. Pipe. Gaskets for American, pipe shall be Fast-Grip® manufactured by American Cast Iron Pipe Co.

PVC pipe bell restraint devices shall meet the requirements of ASTM F1674 and consist of split serrated rings to grip behind the pipe bell and on the connecting pipe. The restraint shall be manufactured of ductile iron conforming to ASTM A536. Connecting tie rods shall be made of low alloy steel that conforms to ANSI/AWWA C111/A21.11.

The assembly shall have a minimum working pressure rating of 200 psi. The restraint shall be the EBAA Iron Series 1500, Uni-Flange Series UFR 1390-C, or Engineer approved equal.

13. HDPE Fittings. Butt Fusion Fittings: Fittings shall be PE3608 HDPE, minimum cell classification of 345464C as determined by ASTM D 3350. Molded fittings shall have the same pressure rating as the pipe unless otherwise specified on the plans. Fabricated fittings are to be manufactured using a Data Logger. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records.

14. Electrofusion Fittings: Fittings shall be PE3608 HDPE, minimum cell classification of 345464C as determined by ASTM D 3350. Electrofusion fittings shall have a manufacturing standard of ASTM F 1055. Fittings shall have the same pressure rating as the pipe unless otherwise specified on the plans.

15. Hydrants. Hydrants shall conform to ANSI/AWWA C502. Hydrants shall be East Jordan BR-250, Mueller Super Centurion or Engineer approved equal with the following:

- 5'-6" bury
- Open Valve Clockwise
- 5-1/4" valve opening
- Mechanical joint inlets with accessories
- 7/8" square operating nut (top nut)
- Nozzle caps shall have 7/8" square nuts
- One 4-1/2" pumper nozzle (facing curb or pavement)
- Two 2-1/2" hose nozzles
- Hose nozzles shall be national standard fire hose coupling thread
- Drains shall be open before installation
- O-ring seals
- \*Hydrants shall be painted YELLOW above the ground line
- \*Hydrant caps shall be color coded per Standard Detail Fire Hydrant Detail
- \* Hydrant Painting shall be two-part industrial coating system. First coat shall be epoxy primer followed by second coat of poly-urethane, following manufactures suggested application. Primers and paints shall be Sherwin Williams, Pittsburgh Paints, or approved equal.

16. Gate valves. Gate valves shall be resilient wedge valves, mechanical joint on both ends, 2-inch square operating nut, O-ring seals, and open right. Valves shall conform to ANSI/AWWA C509 or C515 and be supplied with accessories, nuts, bolts, and lugs shall be 304 stainless steel or epoxy coated. Valves shall be East Jordan Iron Works Flowmaster or Mueller 2361 series. American AVK Series 65 may be used for hydrant leads. Parts shall be approved by Engineer prior to ordering.

17. Tapping Valves. Tapping valves shall be resilient seated gate valves with mechanical joint on one end and flange with alignment ring on the other end. Tapping valves shall accommodate a full-size shell cutter. Valves shall have 2-inch square operation nut,

O-ring seals, and open right. Valves shall conform to ANSI/AWWA C509 or C515 and be supplied with accessories, nuts, bolts, and lugs shall be 304 stainless steel or epoxy coated. Valves shall be East Jordan Iron Works Flowmaster, Mueller 2361 series, CLOW R/W, Kennedy Kenseal R/W, US Pipe Metroseal 250 R/W, or American Flow Control Series 2500.

18. Tapping Sleeves. Tapping sleeves, nuts, bolts, and lugs shall be 304 stainless steel or epoxy coated. Lugs shall be of extra-heavy gauge construction, welds must be fully passivated to insure maximum corrosion protection, sleeves shall have full circle virgin SBR or neoprene gasket in accordance with ASTM D2000 with 360 degrees of sealing surface, and flanges shall be recessed for tapping valve alignment. Sleeves shall be Ford FTSS, Powerseal 3490, Smith- Blair 665, , Romac SST III, or JCM 432.

19. Valve Boxes. Valve boxes shall be 5-1/4-inch shaft, screw-type with #6 base. Sleeves shall be Tyler 6860 series, Item D or Bibby 45 to 66 inches extension, or Bingham & Taylor (B&T) Figure No. 4906, size D. Lids shall be marked "WATER."

20. In Line Stops. Temporary line stop type valves: plugging mechanisms used for isolating sections of existing water line. Line is stopped/plugged: when 95 percent or more of pipe's existing water flow has been stopped. Backfill to grade above pipe left in place. Place and compact backfill in compliance with the Special Provision. Valve materials meeting AWWA Standards C-509 or C515. Valves shall be Hydra-Stop Insta-Valve 250 Patriot, Hydra-Stop IVP250, or approved equal.

21. Service Lines. Water service connections shall be ASTM-B88 Type-K soft temper copper.

22. Corporation Stops. Corporation stops for copper service pipes shall conform to ANSI/AWWA C800 with AWWA corporation stop inlet threads and outlet external threads for use with flared copper pipe (no compression types). Corporation stops shall be Ford Meter Box (F-600-4-NL), or Mueller Company (H-15000). Parts shall be approved by Engineer prior to ordering.

23. Service Saddles. Service saddles for 2 inches and smaller service connections to PVC water pipe shall conform to ANSI/AWWA C800. Saddles shall be cast brass construction with internal threads compatible with AWWA corporation stop inlet threads. O-ring gasket shall be EPDM rubber conforming to ASTM D2000. The saddle shall provide full support around the circumference of the pipe. Service Saddles shall be Ford Meter Box (S90) or Mueller Company (BR2B).

24. Curb Stops (Service Stops). Curb stops for copper service pipe shall conform to ANSI/AWWA C800 with threading for use with flared copper pipe (no compression types). Curb stops shall be Ford Meter Box (Z22-444-NL) or Mueller (B-25204). Parts shall be approved by Engineer prior to ordering.

25. Service Boxes (Curb Stop Boxes). Curb boxes shall be screw-type 2-1/2-inch shaft, extension 41 to 64 inches, Tyler 6500 series, Item 95E, or Bibby 95E. Lids shall be marked "WATER." Parts shall be approved by Engineer prior to ordering.

26. Cast Couplings. Cast coupling shall be Romac Alpha, Smith-Blair Rockwell 441, Power Seal System 3500 series, Dresser Style 253, or Dresser Hymax.

**c. Installation.** Ductile iron water main pipe shall be installed in accordance with ANSI/AWWA C600, "Installation of Ductile Iron Water Mains and Their Appurtenances." PVC water main pipe shall be installed in accordance with ANSI/AWWA C605, "Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water". Additional requirements are as indicated on the construction drawings and standard details, and as specified herein.

1. During installation process the City of Flint will require a City of Flint Water Services Staff employee to visually observe all water main installation.

2. Laying Pipe. Pipe shall be laid to line and grade and shall have bearing over its entire length except at joints where joint holes shall be of such size as to give adequate room for working. Depth of excavation shall be such as to give between five feet and six feet of cover over the pipe. The bottom of the trench shall be excavated to the required grade so that the pipe shall have a full four inches of bedding. Where pipe is being laid in future streets, the depth of excavation shall be sufficient to provide a minimum of 5-1/2 feet of cover below established grades as indicated on the drawings.

A. Water main trenches shall follow MDOT Standard Plans Details R-83-C, Utility Trenches. Exceptions will be concrete encased pipe Trenches, see note 10 below.

3. Temporary Plugs. Plugs with watertight seals shall be installed to keep water, sand, mud, animals, etc. out of newly installed water pipe. A plug shall be placed into the open end of each pipe section as well as Tees and Bends as they are installed into the trench and shall remain in place until immediately before the next section of pipe is connected to it. Non-pressure plugs with rubber gaskets shall be as manufactured by Plug-It Products, Taylor Made Plastics, or other plug acceptable to the Engineer.

4. Isolation. The new water main shall be kept isolated from the active distribution system using a physical separation (see standard detail drawing) until satisfactory bacteriological testing has been completed and the disinfectant water flushed out. Water required to fill the new main for hydrostatic pressure testing, disinfection, and flushing shall be supplied through a temporary connection between the distribution system and the new main. The temporary connection shall include an appropriate cross-connection control device consistent with the degree of hazard and shall be disconnected (physically separated) from the new main during the hydrostatic pressure test. It will be necessary to re-establish the temporary connection after the completion of the hydrostatic pressure test to flush out the disinfectant water before final connection of the new main to the distribution system.

5. Insulation. Where water and sewer are approximately the same elevation, the water shall pass over the sewer where possible. If in going over sewers, the minimum required cover cannot be maintained, 2-inch x 4-foot x 8-foot Styrofoam insulation shall be used. The inspector will provide needed instructions. Cost of insulation and installation shall be included in cost of water main installation.

6. Separation of water mains and storm and sanitary sewers shall meet Michigan Department of Public Health recommendations as outlined in the Recommended Standards for Water Works.

A. **Parallel Installation.** Water main shall be laid at least 10 feet horizontally from any existing or proposed sewer. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10-foot separation, the reviewing authority may allow deviation on a case-by-case basis, if supported by data from the design engineer.

Such deviation may allow installation of the water main closer to a sewer, provided that the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer.

B. **Crossings.** Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required.

C. **Exception.** The reviewing authority must specifically approve any variance from the above requirements when it is impossible to obtain the specified separation distances. Where sewers are being installed and these requirements cannot be met, the sewer materials shall be water pipe or equivalent and shall be pressure tested to insure water tightness.

D. **Force Mains.** There shall be at least a 10-foot horizontal separation between water mains and sanitary sewer force mains. There shall be an 18-inch vertical separation of crossings as required above.

E. **Sewer Manholes.** No water pipe shall pass through or come in contact with any part of a sewer manhole.

F. **Joints.** Push-on joints shall be used and installed in strict accordance with the manufacturer's specifications.

G. **Mechanical Restraints for 12-inch and Smaller Pipe.** All tees, bends, dead ends, reducers, valves and hydrant watch valves, and hydrants for water main 12 inches and smaller are to be restrained by mechanical joint retainer glands, bell restraint harnesses, or locking gaskets. Restrained lengths shall be a minimum of 2 pipe lengths on either end of all appurtenances including connection to HDPE directional drill piping. Other methods of restraint shall be only as authorized by the Engineer and may include the following:

- 1) Thrust blocks (poured against undisturbed earth with concrete. No precast blocks).

- 2) Tie rod joint restraints using Duc-lugs or 3/4-inch Corten Steel Anchor Eyebolts. Two restraints per joint are required for 4-inch through 8-inch pipe. Four restraints per joint are required for 10- and 12-inch pipe.

7. **Thrust Blocks for Pipe Larger than 12 inches.** All tees, bends, and dead ends for water main larger than 12 inches are to be restrained by thrust blocks. Thrust blocks shall be concrete (no precast) having a compressive strength of 3,000 psi at 28 days, placed between the pipe and undisturbed earth of the trench wall. Exposed bolts and/or flanges shall

not be covered with concrete. Concrete shall extend from the bottom of the trench to the top of the pipe within the limits of laying length of the fitting. Thrust block dimensions shall be as specified on the Standard Water drawings.

8. Concrete Encasement of pipe. Where called for on plans encasement shall be concrete (no precast) having a compressive strength of 3,000 psi at 28 days, placed 6 inches thick around the proposed pipe and extend 3 feet beyond the edges of the existing pipe being crossed.

9. Polyethylene Encasement of Ductile Iron Pipe. The polyethylene encasement shall prevent contact between the pipe and the surrounding backfill and bedding material, but is not intended to be a completely airtight or watertight enclosure. All lumps of clay, mud, cinders, etc., on the pipe surface shall be removed before installation of the polyethylene encasement. During installation, care shall be exercised to prevent soil or embedment material from becoming trapped between the pipe and the polyethylene. The polyethylene film shall be fitted to the contour of the pipe to affect a snug, but not tight, encasement with minimum space between the polyethylene and the pipe. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaced, bolted joints or fittings, to prevent damage to the polyethylene due to backfilling operations. Overlaps and ends shall be secured with adhesive tape, string, or any other material capable of holding the polyethylene encasement in place until backfilling operations are complete.

For installations below the water table, both ends of the polyethylene tube shall be sealed as thoroughly as possible with adhesive tape at the joint overlap.

Installation of polyethylene encasement shall be in accordance with ANSI/AWWA C105, Method A, and as described below unless otherwise authorized by the Engineer.

A. Cut polyethylene tube to a length approximately two feet longer than the pipe section. Slip the tube around the pipe, centering it to provide a one-foot overlap on each adjacent pipe section, and bunching it accordion fashion lengthwise until it clears the pipe ends.

Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe. A shallow bell hole must be made at joints to facilitate installation of the polyethylene tube.

After assembling the pipe joint, make the overlap of the polyethylene tube. Pull the bunched polyethylene from the preceding length of pipe, slip it over the end of the new length of pipe and secure it in place. Then slip the end of the polyethylene from the new pipe section over the end of the first wrap until it overlaps the joint at the end of the preceding length of pipe. Secure the overlap in place. Take up the slack width at the top of the pipe to make a snug, but not tight, fit along the barrel of the pipe, securing the fold at the quarter points.

Any cuts, tears, punctures, or other damage to the polyethylene shall be repaired as described herein. Proceed with installation of the next section of pipe in the same manner.

B. Pipe-shaped Appurtenances. Cover bends, reducers, offsets, and other pipe-



shaped appurtenances with polyethylene in the same manner as the pipe.

C. Odd-shaped Appurtenances. When it is not practical to wrap valves, tees, crosses, and other odd-shaped pieces in a tube, wrap with a flat sheet of split length of polyethylene tube by passing the sheet under the appurtenance and bringing it up around the body.

Make seams by bringing the edges together, folding over twice and taping down. Handle width and overlaps at joints as described above. Tape polyethylene securely in place at valve stem and other penetrations.

D. Repairs. Repair any cuts, tears, punctures, or damage to the polyethylene with adhesive tape or with a short length of polyethylene sheet or a tube cut open, wrapped around the pipe to cover the damaged area and secured in place.

E. Openings in Encasement. Provide openings for branches, service taps, blowoffs, air valves, and similar appurtenances by making an x-shaped cut in the polyethylene and temporarily folding back the film. After the appurtenance is installed, tape the slack securely to the appurtenance and repair the cut, as well as any other damaged areas in the polyethylene with tape. Service taps may also be made directly through the polyethylene with any resulting damaged areas being repaired as described above.

F. Junctions Between Wrapped and Unwrapped Pipe. Where polyethylene wrapped pipe joins an adjacent pipe that is not wrapped, extend the polyethylene wrap to cover the adjacent pipe for a distance of at least three feet. Secure the end with circumferential turns of tape.

G. Service lines of dissimilar metals shall be wrapped with polyethylene or a suitable dielectric tape for a minimum clear distance of three feet away from the ductile iron pipe.

H. Exercise care to prevent damage to the polyethylene wrapping when placing backfill. Backfill material shall be free from cinders, refuse, boulders, rocks, stones, or other material that could damage polyethylene.

10. Fire Hydrants. All hydrants shall stand plumb and shall have their nozzles parallel with or at right angles to the curb, with the pumper nozzle facing the curb, except that the hydrants having two-hose nozzles 90 degrees shall be set with each nozzle facing the curb at an angle of 45 degrees.

A. Set to Grade. Hydrants shall be set to the established grade, with the center of the lowest nozzle at least 18 inches above the ground. The lowest nozzle shall be installed away from the curb line at a sufficient distance to avoid damage from or to vehicles. Traffic model hydrants shall be installed so that the breakaway flange is not less than two inches nor more than six inches above the established grade. Any fittings used to set the hydrant to grade shall be included in the unit price bid for hydrant installation.

B. Hydrant Valve. Each hydrant shall be connected to the main with a six-inch diameter branch controlled by an independent valve, unless otherwise specified. The valve shall be restrained to allow shutoff when the hydrant is to be removed.

C. Drainage. When a hydrant is set, drainage shall be provided at the base of the

hydrant by placing coarse gravel or crushed stone mixed with coarse sand from the bottom of the trench to at least six inches above the drain port opening in the hydrant and to a distance of one foot around the elbow. Where ground water rises above the drain port or when the hydrant is located in contaminated soils or when the hydrant is located within ten feet of a sanitary or storm sewer main, the drain port shall be plugged.

D. Backfill. All backfill within the influence of the road shall be Michigan Department of Transportation (MDOT) Class II, compacted to 95% maximum density in accordance with Standard Detail SD-7W.

#### 11. Valve and Fitting Installation.

A. Prior to installation, valves shall be inspected for direction of opening, number of turns to open, freedom of operation, tightness of pressure containing bolting and test plugs, cleanness of valve ports, and especially seating surfaces, handling damage, and cracks. Defective valves shall be marked and held for disposition as required. All bolts and nuts, with the exception of seat adjusting bolts or screws in butterfly valves, shall be checked for proper tightness. Seat adjusting bolts in butterfly valves shall be adjusted only on the recommendation from the manufacturer.

B. Placement. Valves, fittings, plugs, and caps shall be set and joined at the pipe according to ANSI/AWWA C600 or ANSI/AWWA C605, as applicable. Valves connecting to PVC pipe and all valves 12 inches or larger shall be provided with special support, such as crushed stone, concrete pads, or a sufficiently tamped trench bottom so that the pipe will not be required to support the weight of the valve. Valves shall be installed in the closed position.

C. Drainage Branches and Blowoffs. Mains shall be drained through drainage branches or blowoffs. Drainage branches, blowoffs, and appurtenances shall be provided with control valves and shall be located and installed as indicated on the drawings. Drainage branches or blowoffs shall not be directly connected to any storm or sanitary sewer, submerged in any stream, or be installed in any manner that will permit a back siphonage into the distribution system.

D. Vents. Air-release or vacuum vents shall be provided at high points in the line and in areas of potential negative pressure. The air release or vacuum vents shall not be connected to any storm or sanitary sewer and they shall be protected from freezing.

E. Valve Box. A valve box shall be provided for every valve that has no gearing or operating mechanism, or in which the gearing or operating mechanism is fully protected with a gear case. The valve box shall not transmit shock or stress to the valve. The valve box shall be centered over the operating nut of the valve with the box cover flush with the surface of the finished area or another level as specified.

F. Curb Stop Box. Brick will be placed under curb stop box. 1 ½ " PVC pipe will be used to hold curb box in place while being backfilled.

G. Valve Vault. A vault designed to prevent settling on the pipe shall be provided for every valve that has exposed gearing or operating mechanisms. The operating nut shall be readily accessible for operation through the opening in the valve vault. The opening shall be set flush with the surface of the finished pavement or another level as

specified. Vaults shall be constructed to permit minor valve repairs and to protect the valve and pipe from impact where they pass through the vault walls.

H. Plugs and Caps. All dead ends on new mains shall be closed with plugs or caps that are suitably restrained to prevent blowing off under test pressure. If a blowoff valve precedes the plug or cap, it too shall be restrained against blowing off. All dead ends shall be equipped with suitable blowoff or venting devices.

12. Backfilling. After the water line has been properly positioned for grade and horizontal alignment, the trench shall be backfilled in accordance with the following described methods.

A. Pipe Bedding and Initial Backfill. Pipe bedding and initial backfill shall be performed to properly set the pipe. Bedding shall conform to details indicated on the drawings and as specified herein. Pipe laid in sandy soils will be bedded with hauled-in Class IIIA granular material or approved on-site material. Pipe laid in a rocky, dry trench will be bedded with Class IIIA granular material. Use coarse aggregate 6A as directed by the Engineer for bedding pipe in unstable soil conditions. The Engineer reserves the right to use alternate pipe bedding.

Initial backfill to twelve inches above the pipe shall be with Class IIIA granular material or approved onsite material. The Contractor shall take all necessary actions and precautions to insure that initial backfill is properly placed around the pipe, especially from the spring line of the pipe to the bottom of the trench. This shall be accomplished to the satisfaction of the Engineer. Initial backfill shall be compacted to a minimum of 90% of the maximum unit weight.

B. Final Backfilling. After proper pipe bedding and initial backfill, the Contractor shall begin final backfill operations. Backfill shall be accomplished by placing layers, 12 inches maximum, of the appropriate backfill material in the excavation and compacting.

Trenches under road surfaces, pavement, curb, driveway, sidewalk, and within their zone of influence shall be backfilled with Class II granular material. Compaction shall be by the controlled-density method or other effective means and shall be a minimum of 95% of the maximum unit weight. Other trenches may be backfilled with suitable onsite material and compacted to a minimum of 90% of its unit weight.

Wherever utilities cross the trench, the backfill material shall be thoroughly compacted for the full depth beneath such pipe and a stone-free sand cushion tamped under and around the pipe a minimum of 12 inches measured in any direction.

Stones exceeding six inches in diameter, logs, stumps, and other debris shall not be allowed in the backfill material in the roadway or within six inches of the pipe. Muck or other unstable organic soils which may be encountered in excavation shall be hauled and disposed of and the Contractor shall furnish sufficient approved material to complete the backfill as required.

C. Granular Material. Granular material which is encountered in the excavated material may be used for the required MDOT Class II granular material if approved by the Engineer. The use of such material shall not be allowed without prior approval of the Engineer.

13. **Damaged Materials.** Any pipe, manholes, valves boxes, stop boxes, or structures which are damaged during construction shall be replaced by the Contractor at no expense to the Owner.

14. **Salvaged Materials.** Old fire hydrants and selected large valves shall be removed as part of the work that will not be reused and shall remain City property and be set aside for pickup by the City of Flint Water Department. The Contractor shall exercise caution during removal to avoid damage to the valves or hydrant and remove the head, barrel, and foot piece intact in one piece.

15. **Connecting to Existing Water Lines.** The Contractor shall make connections to existing water lines as indicated on construction drawings. All new water system mains shall be constructed, backfilled, pressure tested, chlorinated, and approved by the Engineer, and water tests shall be taken and approved for potable use by the Michigan Department of Environment, Great Lakes, and Energy or the City of Flint Water Department prior to connecting the new system mains to existing water distribution mains. Temporary connections for filling, chlorinating, and testing new mains shall be as specified herein and shown on the drawings.

16. **Notification Prior to Shutting Off Water.** Where water main construction under this contract requires shutting off water supply in existing mains supplying residents, the Contractor shall provide advance notice to the Owner and to all residents who will be affected. Residents and businesses shall be notified at least 24 hours prior to shutting off the water supply. Facilities with critical water needs may require more advance notice. Water supply shall not be shut off until approved by the Engineer. If faulty valves or other unforeseen conditions require expanding the area of shut off, the shut off shall be delayed until proper notification is provided. Delays will not be cause for extra compensation to the Contractor. Water supply shut off shall be limited to a period of not longer than four hours between 8 a.m. and 6 p.m. and this period shall be selected for the time of day which will least affect the residents and businesses. Other restrictions may be specified elsewhere in the contract documents. The Contractor shall be required to maintain an adequate water supply at all times (except as described above for brief periods) to all residents adjacent to the project, and change over to new mains or services shall be coordinated to eliminate any long periods for residents without water.

17. **Filling New Water Main.** Provision shall be made to fill the main at a proper rate of approximately one foot per second. Air shall be bled off the water main prior to testing. Unless approved otherwise, this will require one-inch corporations and bypass at main line valves. Tap and materials required to install one-inch corporations shall be included in the cost of construction.

A. The Contractor shall pay the City of Flint for all water used during construction, including water main breaks and water necessary for testing, cleaning, and chlorinating water mains. The actual volume of water used shall be determined by the City. The rate of pay for all water used shall be at the current rate per 100 gallons.

B. The water necessary to fill the volume of the water main at the completion of the project shall be paid by the city.

18. **Service Connections.** Minimum size shall be one inch. Water service connections shall be constructed with a minimum of five feet cover, at right angles to water main between main and curb stop, and as close as possible to the existing service that is being replaced.

Where obstructions (e.g., trees) make open cut installation impractical or when directed by the Engineer, the service shall be installed by boring.

A. **Service Taps.** Service taps should be located at ten o'clock or two o'clock on the circumference of the pipe. Service taps on ductile iron pipe may be screwed directly into the tapped and threaded main without any additional appurtenances.

B. All service taps on PVC pipe shall utilize a tapping saddle (NO DIRECT TAPS). The equipment and procedures specified in ANSI/AWWA C605 for saddle tapping shall be followed.

C. **Service Taps in Polyethylene Encasement.** Service taps may be accomplished by making an x-shaped cut in the polyethylene encasement and temporarily folding back the film. After the tap has been completed, cuts in the polyethylene and any other areas of damage to the film shall be repaired with tape as described in ANSI/AWWA C105/A21.5.

Direct service taps may also be made through the polyethylene, with any resulting damaged areas being repaired as described previously. The preferred method of making direct service taps consists of applying two or three wraps of polyethylene adhesive tape completely around the pipe to cover the area where the tapping machine and chain will be mounted. After the direct tap is completed, the entire circumferential area should be closely inspected for damage and repaired if needed.

D. **Disinfecting Service.** Prior to connecting customer's service line to curb stop, the service in the street right-of-way shall be flushed and filled with a 200 milligrams/liter (mg/L) (200 parts per million (ppm)) minimum chlorine solution. Solution shall stand for a minimum of one hour after which time the service shall be flushed free of chlorine solution. A sample will then be taken by the Water Department after which the curb stop shall be installed, if not already in place, and the customer's service shall be reinstated.

E. **Backfill.** The service shall be bedded with Class IIIA granular material and backfilled with Class II granular material or approved onsite material. Backfill under road surfaces, curb, driveways, or sidewalk or within their zone of influence shall be compacted to 95% of the maximum unit weight. Other trenches shall be backfilled with suitable onsite material and compacted to a minimum of 90% of its maximum unit weight.

#### **d. Directional Drilling.**

1. Prior to beginning work, the Contractor must submit to the Engineer a work plan and, engineer sealed, design detailing the procedure and schedule to be used to execute the Project. The design shall include all design considerations, calculations, details including thrust restraints and/or thrust collar for longitudinal expansion and contraction, mainline water main connection details and any other information necessary to complete the work. The work plan shall include a description of all equipment to be used, down-hole tools, a list of personnel and their qualifications and experience list of subcontractors, a schedule of work activity, a safety plan traffic control plan (if applicable), an environmental protection plan and contingency plans for possible problems. Work plan shall be comprehensive, realistic and based on actual working conditions for the Project. Plan shall document the thoughtful planning required to successfully complete the Project. All drilling fluids and loose cuttings shall be contained. No fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, all excess drilling fluid, drilling

spoils and other material shall be removed by the Contractor.

2. Contractor shall submit Specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the Project. Equipment shall include but not be limited to drilling rig, mud system, mudmotors (if applicable), down-hole tools, guidance system and rig safety systems. Calibration records for guidance equipment shall be included. Specifications for any drilling fluid additives that Contractor intends to use or might use will be submitted.

3. Specifications on material to be used shall be submitted to Engineer and material shall include the pipe, fittings, drilling mud, drilling additives and any other item which is to be an installed component of the Project or used during construction.

4. Work site as indicated on drawings, within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas.

5. Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on Drawings. If Contractor is using a magnetic guidance system, drill path will be surveyed for any surface geo- magnetic variations or anomalies.

6. Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents or state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within two hundred (200) feet of any water-body or wetland.

7. Pipe shall be welded/fused together in one length. Pipe will be placed on pipe rollers before pulling into bore hole with rollers spaced close enough to prevent excessive sagging of pipe.

8. Pilot hole shall be drilled on bore path with no deviations greater than five percent of depth over a length of one hundred (100) feet. In the event that pilot does deviate from bore path more than five percent of depth in one hundred (100) feet, Contractor shall notify A/E, and A/E may require Contractor to pull-back and re-drill from the location along bore path before the deviation.

9. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, Contractor shall cease operations and shall discuss corrective options with the Engineer, work shall then proceed accordingly.

10. Upon approval of the pilot hole location by the Engineer, the hole enlarging or back reaming phase of the installation shall begin. The borehole diameter shall be increased to accommodate the pullback operation of the required size of PE pipe. The type of back reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. The reamer type shall be at the Contractor's discretion with the final hole diameter being a maximum of twenty (20) percent larger than the outside diameter of the product pipe being installed in the borehole.

11. The open borehole may be stabilized by means of bentonite drilling slurry pumped through the inside diameter of the drill pipe and through openings in the reamer. The slurry will also serve as an agent to carry the loose cuttings to the surface through the annulus of the borehole. These cuttings and bentonite slurry are to be contained at the exit hole or entry side of the directional bore in pits or holding tanks. The slurry may be recycled at this time for reuse in the hole opening operation or it shall be hauled by the Contractor to an approved dump site and properly disposed. A complete list of all drilling fluid additives and mixtures to be used in the directional operation will be submitted to the A/E along with their respective material safety data sheets.

12. Excess pipe shall be removed and the bore hole associated with this excess pipe shall be filled with flowable fill or grout, unless the area of the excess pipe is excavated and backfilled as part of the tie-in operations.

**e. Hydrostatic Testing.** Hydrostatic testing shall be performed in accordance with ANSI/AWWA C600 (Ductile Iron pipe) or ANSI/AWWA C605 (PVC pipe), and as specified herein.

1. **Test Restrictions.** Test pressure shall not be less than 150 psi at the highest point along the test section. Test pressure shall not exceed pipe or thrust-restraint design pressures. The hydrostatic test shall be of at least a two-hour duration. Test pressure shall not vary by more than  $\pm 5$  psi for the duration of the test. Valves shall not be operated in either direction at a differential pressure exceeding the rated valve working pressure. The test setup should include a provision, independent of the valve, to reduce the line pressure to the rated valve pressure on completion of the test. The valve can then be opened enough to equalize the trapped pressure with the line pressure, or the valve can be fully opened if desired. The test pressure shall not exceed the rated pressure of the valves when the pressure boundary of the test section includes closed, resilient-seated gate valves, or butterfly valves.

2. **Pressurization.** After the pipe has been laid, all newly-laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure of at least 150 psi at the point of testing for a minimum of 4 hours. Each valve section of pipe shall be slowly filled with water, and the specified test pressure shall be applied using a pump connected to the pipe. Valves shall not be operated in either the opened or the closed direction at differential pressures above the rated pressure. The system should be allowed to stabilize at the test pressure before conducting the hydrostatic test.

3. **Air Removal.** Before applying the specified test pressure, air shall be expelled completely from the section of piping under test. If permanent air vents are not located at all high points, corporation cocks shall be installed at these points to expel air as the line is filled with water. After the air has been expelled, the corporation cocks shall be closed and test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and the pipe plugged or left in place as required.

4. **Examination.** Any exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damage or defective pipe, fittings, valves, hydrants, or joints that are discovered following the pressure test shall be repaired or replaced with reliable material, and the test shall be repeated until satisfactory results are obtained.

5. **Testing Allowance Defined.** Testing allowance shall be defined as the quantity of



makeup water that must be supplied into the newly-laid pipe or any valved section thereof to maintain pressure within five psi of the specified test pressure after the pipe has been filled with water and the air has been expelled. Testing pressure shall not be measured by a drop in pressure in a test section over a period of time.

6. **Testing Allowance.** No pipe installation will be accepted if the amount of makeup water is greater than that determined by the following formula:

$$L = \frac{SD\sqrt{P}}{148,000}$$

Where:

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

S=length of pipe section tested, in feet

D=nominal diameter of the pipe, in inches

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

7. **Hydrants in Test Section.** When hydrants are in the test section, the test shall be made against the main valve in the hydrant.

8. **Acceptance.** Acceptance shall be determined on the basis of testing allowance. If any test of laid pipe discloses a testing allowance greater than that specified, repairs or replacements shall be accomplished. After this work has been done, the tests shall be repeated. Final acceptance of the lines will not be made until satisfactory tests are obtained.

**f. Disinfection and Testing of Water Main.** Water mains shall be disinfected and pass bacteriological test prior to hydrostatic testing. All pressure testing and disinfection of water mains shall be in accordance with these specifications, and shall be included in the cost of construction. It shall be the contractor's responsibility to determine all procedures and costs for coordination with all city departments for water main disinfection and include all costs and time in their bid and progress schedule.

The effectiveness of disinfection depends, in large measure, on maintaining clean pipes and avoiding major contamination during construction. Therefore, it is strongly recommended that sanitary practices be used for handling and installing pipe, valves, fittings, and accessories.

The interiors of pipes, fittings, and valves shall be protected from contamination. Pipe delivered for construction shall be strung to minimize the entrance of foreign material. All openings in the pipeline shall be closed with watertight plugs when pipe laying is stopped at the close of the day's work or for other reasons, such as rest breaks or meal periods. Rodent proof plugs may be used when watertight plugs are not practicable and when thorough cleaning will be performed by flushing or other means.

1. The Flint Water Department will disinfect the water main and appurtenances using the continuous feed method outlined in ANSI/AWWA C651. Either calcium hypochlorite (HTH) containing 65% available chlorine by weight or liquid sodium hypochlorite containing approximately 10% available chlorine, conforming with ANSI/AWWA B300, will be used for disinfection.

2. The Contractor shall provide all hoses and personnel needed to flush the mains in a manner that is safe and will not damage adjacent property. The Contractor shall not operate any existing valve. Water Department personnel will control water flow with assistance from



the Contractor. It shall be the contractor's responsibility to determine all procedures and costs for coordination with all city departments for water main disinfection and flushing and include all costs and time in their bid and progress schedule.

3. Disinfectant Procedures.

A. Place four ounces minimum (1/2 cup) of HTH granules in each length of pipe as it is installed (optional).

B. Fill the main and appurtenances, including hydrants, with water from the distribution system through corporations at a rate of approximately one foot per second as follows:

<u>Nominal Pipe Size</u> <u>Size (inches)</u>	<u>Rate (gallons per minute)</u>
6	80
8	160
12	360
16	640

Note: The existing distribution system shall be protected from backflow caused by hydrostatic pressure tests and disinfection procedures. The Contractor shall commence filling the main before 9 a.m.

C. Allow a minimum of two hours contact time with the HTH in the new main (if Step A is used).

D. With assistance from the Water Department, flush the main at a minimum velocity of 3.0 feet per second.

E. Chlorinate the main and appurtenances, including hydrants, using the "continuous feed method" as follows:

Water from the existing distribution system or other approved source shall be made to flow at a constant metered rate into the new main at a point not more than 10 feet downstream from the beginning of the new main.

Water entering the main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 50 mg/L (50 ppm) free chlorine. Chlorine concentration will be measured by the Water Department at regular intervals using appropriate chlorine test kits or other approved method to ensure even distribution throughout the main.

1) The chlorinated water shall be retained in the main for at least 24 hours during which time valves and hydrants shall be operated to ensure disinfection at the end of this 24-hour period.

2) The treated water in all portions of the main after the 24-hour period shall have a residual of not less than 10 mg/L (10ppm) free chlorine.

4. Bacteriological Samples. After the satisfactory chlorination of the mains has been completed as described above, the chlorinated water flushed out and the mains filled with potable water, the Water Department will take for analysis two consecutive bacteriological

samples of the water in the mains per the options presented in ANSI/AWWA C651.

- Option A samples are 16 hours apart
- Option B samples are 15 minutes apart after a 16 hour rest period.

5. If the analysis of the samples shows the water to be non-potable as a result of unsatisfactory disinfection of the mains, the mains shall be re-chlorinated at the Contractor's expense until satisfactory samples are obtained.

**g. Final Connections to Existing Mains.** Water mains and appurtenances must be completely installed, flushed, disinfected, and have satisfactory bacteriological sample results received before permanent connections are made to the active distribution system. Sanitary construction practices shall be followed during installation of the final connection so that there is no contamination of the new or existing water main with foreign material or groundwater.

1. **Disinfection of Fittings and Pipe Used for Connection.** The new pipe, fittings, and valves required for the connections may be spray-disinfected or swabbed with a minimum of 1% to 5% solution of chlorine just prior to being installed if the total length of the connection from the end of a new main to the existing main is equal to or less than 18 feet. If the length is greater than 18 feet, the pipe required for the connection must be set up above ground, disinfected and bacteriological samples taken as described in the disinfection section above. After satisfactory bacteriological sample results have been received for the "pre-disinfected" pipe, the pipe can be used in connecting the new main to the active distribution system. Between the time the satisfactory bacteriological sample results are received and the time that the connection piping is installed, the ends of the piping must be sealed with plastic wrap, watertight plugs, or caps.

2. **Flushing.** To assure complete removal of foreign materials that might have entered the main during the course of the installation, the new water main shall be thoroughly flushed following connection to the existing system or any other procedure that exposes new components to external sources of contamination. This is in addition to flushing required under "Disinfection and Testing of Water Main." With assistance from the Water Department, flushing shall be done following connection to the existing water system, but before any service connections are made. The new water main shall be flushed again after all final tie-ins are completed. The Contractor shall coordinate flushing operations by submitting a support request to the Water Department at least one working day in advance. If no fire hydrants or other convenient outlets for flushing are available, the Contractor shall install temporary hydrants for flushing at no additional cost.

Whenever practical, initial connection to the existing system shall be to a larger main so that desired flushing velocity can be achieved. All valves and hydrants shall be fully opened and closed under water pressure to ensure proper operations during flushing and to dislodge foreign material.

Flush new mains, hydrant leads, and service connections to fire system risers thoroughly before connection is made to system piping. Flushing shall be of sufficient magnitude and duration to flush all foreign material out of the lines, valves, and hydrants. The flushing velocity shall be a minimum of 2.5 feet per second (5 feet per second preferred) for non-fire protection lines. Where the main supplies a fire protection system, the velocity shall meet the NFPA 24 requirement of 10 feet per second. The flow required to produce a velocity of 10 feet per second in various pipe sizes is as follows:

<u>Nominal Pipe Size Inches (in)</u>	<u>Gallons per Minute (gpm)</u>
6	880
8	1560
10	2240
12	3520

Direct flushing water away from traffic, pedestrians, and private property. Prevent erosion damage to streets, lawns, and yards by the use of tarpaulins and lead-off discharge devices.

**h. Disinfection When Cutting into or Repairing Existing Mains.** The following procedures apply primarily when existing mains are wholly or partially dewatered. After the appropriate procedures have been completed, the existing main may be returned to service prior to the completion of bacteriological testing in order to minimize the time customers are without water.

Leaks or breaks that are repaired with clamping devices while the mains remain full of pressurized water may present little danger of contamination and, therefore, may not require disinfection.

1. **Trench Treatment.** When an existing main is opened, either by accident or by design, the excavation will likely be wet and may be badly contaminated from nearby sewers. Liberal quantities of hypochlorite applied to open trench areas will lessen the danger from this pollution. Tablets have the advantage in this situation because they dissolve slowly and continue to release hypochlorite as water is pumped from the excavation.

2. **Swabbing with Hypochlorite Solution.** The interior of all pipes and fittings (particularly couplings and sleeves) used in making the repair shall be swabbed or sprayed with a 1%, NSF AWWA C651 approved, hypochlorite solution before they are installed.

3. **Flushing.** Thorough flushing is the most practical means of removing contamination introduced during repairs. If the valve and hydrant locations permit, flushing toward the work location from both directions is recommended until discolored water is eliminated. Highly concentrated chlorine water shall be discharged to the sanitary sewer.

4. **Bacteriological Samples.** Bacteriological samples shall be taken after repairs are completed to provide a record for determining the effectiveness of the procedure. If the direction of flow is unknown, then samples shall be taken on each side of the main break. If positive bacteriological samples are recorded, the situation shall be evaluated by the Water Department to determine corrective action. Daily sampling shall be continued until two consecutive negative samples are recorded.

**i. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price for the following pay items:

<u>Pay Item</u>	<u>Pay</u>
<u>Unit</u>	

Water Main, _____ inch, Open Cut .....	Foot
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Water Main, _____ inch, Directional Drill .....	Foot
Water Main Bedding and Backfill, SD-7W .....	Foot
Gate Valve and Box, _____ inch, Modified .....	Each
Live Tap, _____ inch by _____ inch .....	Each
In Line Stop, _____ inch .....	Each
Hydrant Assembly, SD-1W .....	Each
Hydrant Extension.....	Foot
Water Main, _____ inch, Cut and Plug, Modified .....	Each
Water Main, Connect New _____ inch to Existing _____ inch .....	Each
Water Serv, _____ inch .....	Each
Water Serv, Long, _____ inch .....	Each
Water Serv, Retire .....	Each
Water Main, Rem .....	Foot
Hydrant, Rem, Modified .....	Each
Water Structure, Abandon .....	Each

**Water Main, Open Cut** of the size, class, and trench detail specified, will be measured in place by length in feet, from center to center of crosses, tees, and bends, including fittings. Payment includes providing and installing the specified pipe, bedding, and initial backfill material to one foot above the pipe.

Payment also includes polyethylene encasement (for Ductile Iron), concrete encasement, gaskets, restraints, and other materials required for proper installation. When required, payment includes providing and installing Styrofoam insulation. Payment also includes excavation, trenching, coffer dams, de-watering, placing and removing temporary sheeting and bracing, support and protection for existing utilities, backfilling with approved onsite granular material, compaction, disposal of surplus earth removal, tree root protection, abandoning old water main, removal of gate wells as required on the drawings, temporary road or trench surface as directed by the Engineer, removal of temporary surfaces, all work and materials required for the necessary disinfection and testing, and all other work required for a complete job.

All additional work necessary for the completion of this work but not specifically listed as a pay item will be deemed included in one or more of the contract items listed in the proposal.

**Water Main, Directional Drill**, of the type, diameter and class specified, directional drilled, will be paid for at the Contract Unit Price per Linear Foot. Price paid shall be payment in full for labor, material, and equipment necessary for designing, furnishing and installing directional bored water main and shall include, but is not limited to, specials and fittings, excavation, sheeting and bracing, shoring, draining, dewatering, excavating utility crossings, potholing, boring water main, jointing, grouting, testing, disinfecting, backfilling boring pits (including backfill with special materials where specified), excavating and installing fittings, disposal of excess excavated material, temporary blow- offs, thrust blocks, thrust restrainers, encasement, barricading, restoration, final cleanup, connections to existing mains and all other items necessary to complete the job, whether specifically mentioned or implied.

Measurement for water main directional drill will be in linear feet along the centerline of the pipe taken from end-to-end with no reduction for fittings, boring pits, and valves except for special structures, sections or connections for which either lump sum or unit prices have been taken will be deducted from the total length of water main and will be paid for at the prices bid therefore.

**Water Main Bedding and Backfill, SD-7W** will be measured by length in feet along the

water main. Payment for Water Main Bedding and Backfill, SD-7W includes disposal of unsuitable material and furnishing Class II granular material for backfill from one foot above the pipe to the pavement base or finished grade. Where onsite backfill material is used in backfilling the water main, the payment will be reduced in proportion to the amount of onsite backfill material actually used.

**Gate Valve and Box, Modified** of the size specified includes providing and installing the valve, retaining glands if needed, cast iron valve box with lid marked "WATER", excavation and backfill with Class II sand or approved onsite material and any other materials needed to properly install specified items. Where required by paving operations, payment shall include temporary lowering. (Note: Payment for Gate Box, Adjust, Case 1 will be made for gate boxes lowered for paving.)

**Live Tap** shall include both:

Tapping Valve and Box of the size specified includes providing and installing the valve, retaining glands if needed, cast iron valve box with lid marked "WATER", excavation and backfill with Class II sand or approved onsite material and any other materials needed to properly install specified items. Where required by paving operations, payment shall include temporary lowering. (Note: Payment for Gate Box, Adjust, Case 1 will be made for gate boxes lowered for paving.)

Tapping Sleeve of the size specified includes providing and installing stainless steel tapping sleeve, excavation, and backfill with Class II sand or approved onsite material and any other materials needed to properly install specified items. The Water Department will make the tap after the Contractor has installed the tapping sleeve and valve.

**In Line Stop** includes providing and installing of the size and type specified a line stop type valve. This item will be measured by each temporary line stop valve of the size and type specified and installed regardless if temporary or permanent. This price is full compensation for dewatering, trenching, excavation and backfill, preparation of existing pipe and valve box for permanent installations, and will include all materials, labor, equipment, tools and incidentals necessary to complete the work.

**Hydrant Assembly, SD-1W** includes providing and installing fire hydrant, 6-inch ductile iron hydrant lead, polyethylene encasement, 6-inch valve, cast iron valve box, retainer glands, coarse gravel or crushed stone mixed with coarse sand for drainage, excavation, and backfill with Class II sand or approved onsite material.

**Hydrant Extension** will be for the actual length of extension installed in feet and includes providing and installing the hydrant extension necessary to raise hydrant to height specified, including all materials necessary for proper installation.

**Water Main, Cut and Plug, Modified** includes providing and installing plug or cap, polyethylene encasement, retainer glands, and any other materials needed to properly install specified items. Payment includes the removal of any valves, valve boxes, or valve manholes rendered unnecessary, bulkheading abandoned pipe with concrete and excavation and backfill with Class II sand or approved onsite material.

**Water Main, Connect new\_ inch to existing\_ inch** includes providing and installing bends, couplings, retainer glands, and any other materials needed to properly make the connection. Pay item includes coordination deemed necessary by the Engineer with the City and adjacent property owners. Payment includes the removal of any valves, valve boxes, or valve manholes rendered unnecessary by the new connection, bulkheading abandoned pipes with concrete

and excavation and backfill with Class II sand or approved onsite material. Water main will be paid separately as measured between the connection point to the existing main and the center of the new main. Water valves will also be paid separately.

**Water Serv** of the size specified includes providing and installing copper pipe, corporation stop and tap saddle, curb stop, stop box, excavation, and backfill with Class II sand or approved onsite material, and any other fittings required to connect new service to existing pipe in parkway. This pay item will include connecting the new service to main and to the existing service line to building and disconnecting old service from main. A Water Service shall be defined as any service 30 feet or less in length. A Water Service, Long is any service greater than 30 feet in length.

**Water Serv, Retire** includes exposing the service at main, closing the existing corporation stop, and disconnecting the service from the main. It also includes removal of stop box and excavation and backfill with Class II sand or approved onsite materials. This applies only to services to vacant lots or services that are no longer in use on existing water mains that will not be retired.

**Hydrant, Rem, Modified** includes removing the existing hydrant lead, valve, and hydrant assembly as indicated on drawings and setting the hydrant aside (undamaged and in one piece) for retrieval by the Water Department. The work includes bulkhead of the existing lead and backfill with specified material.

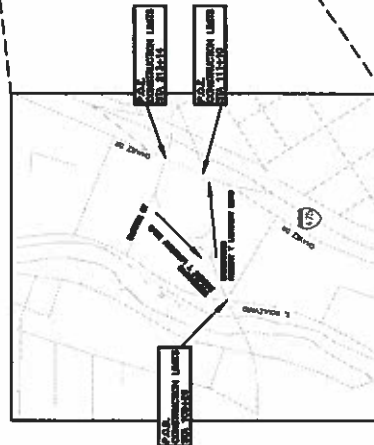
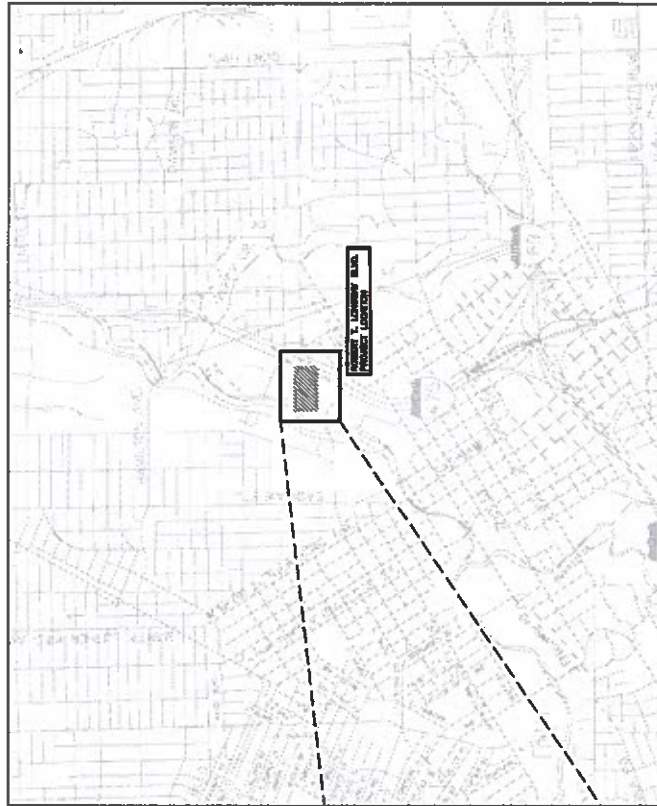
**Water Structure, Abandon** includes removing the top three feet of the existing structure and casting from the site as well as filling the remainder of the structure with Class II sand including compaction. This item includes all sawcutting and demolition necessary to remove the top three feet of the structure.

**Water Main, Rem** includes the removal and disposal of old water mains, any valves, valve boxes, or valve manholes rendered unnecessary and as required on the drawings. Payment also includes saw cutting, excavation to the depth required, de-watering, support and protection for existing utilities, tree root protection, disposal of unsuitable material, furnishing Class II granular material for backfill to the pavement base or finished grade, and compaction. Where onsite backfill material is used in backfilling the water main, removal will be reduced in proportion to the amount of onsite backfill material actually used.

**ROBERT T. LONGWAY BOULEVARD**  
**E. BOULEVARD DRIVE AND CHAVEZ DRIVE**

**JOB NUMBER: 207637**

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**LOCATION MAP**  
12/1/11

## UTILITIES & MUNICIPALITIES

[illegible]

**ROBERT T. LONGWAY BLVD**

TRAFFIC DATA		ROBERT T. LONGWAY
POSTED SPEED		30 MPH
DESIGN SPEED (2070)		30 MPH
AVERAGE DAILY TRAFFIC (2060)		1,3787
% COMMERCIAL VEHICLES (2060)		10
GROWTH FACTOR (2040)		0.5
AVERAGE DAILY TRAFFIC (2040)		1,3868
% COMMERCIAL VEHICLES (2040)		10

[illegible]

600 MILES OF CONCRETE AND MMA COULD BE LUNG WITH A MMA CHEMICAL  
REPLACEMENT, INCLUDING CONCRETE REPAIR, MMA REPAIR, MMA REPAIR,  
REPAIR REPLACEMENT, REPAIR REPLACEMENT, REPAIR REPLACEMENT, REPAIR REPLACEMENT

ON BOT 207837

**SPALDING  
DEDECKER**  
Engineering and Surveying  
Existence Since 1954

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PREPARED UNDER THE SUPERVISION OF

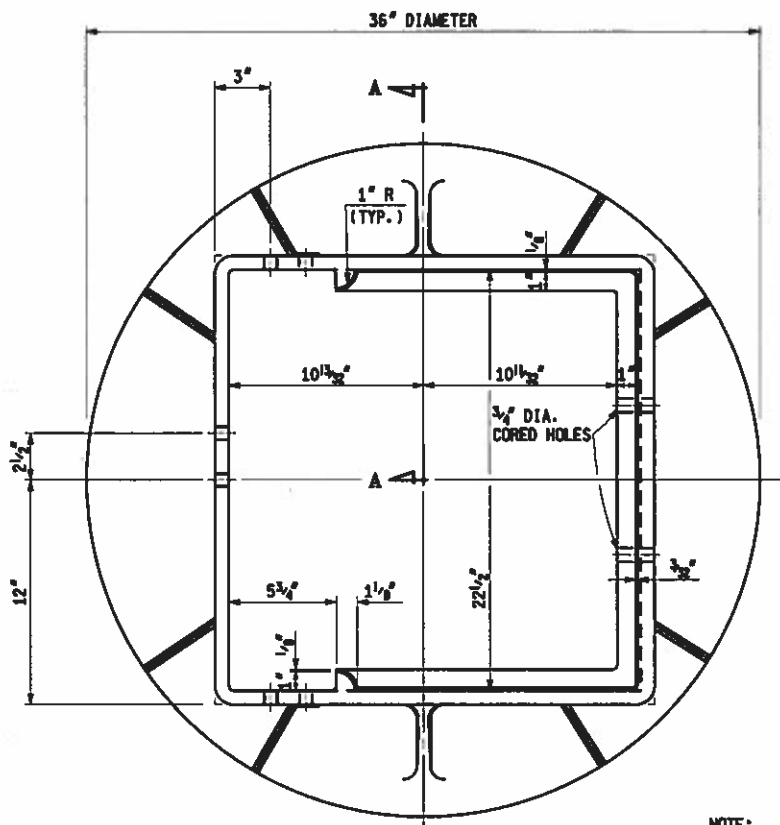


**AFRANA JO SILVA, P. L. NÃO HÁ CONSENTIMENTO**

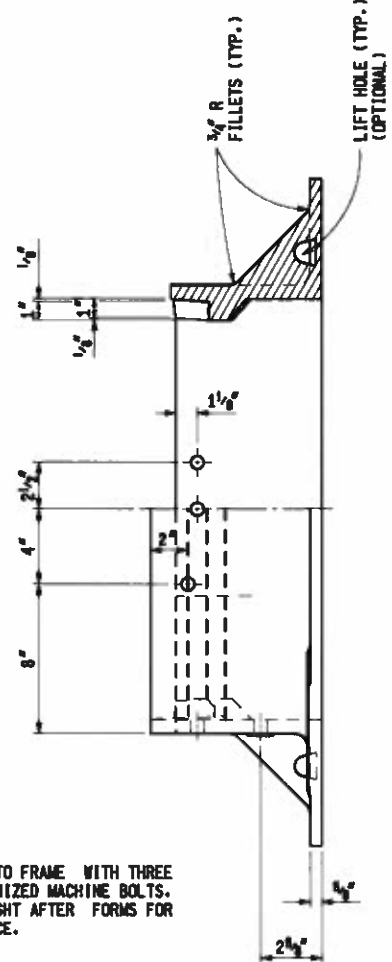


**1 WEEKEND DAY  
BEFORE YOU DIE  
CALL MISS DUE,  
1-800-422-7171**  
THE 100 NAMES OF AMERICA 2000



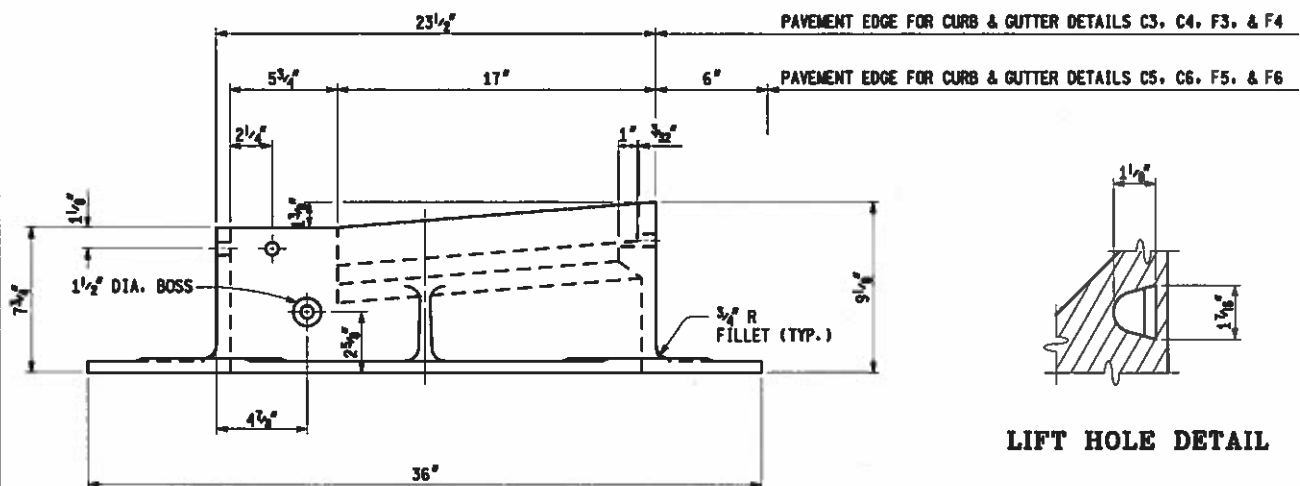


PLAN VIEW OF FRAME

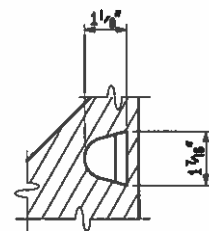


SECTION A - A  
OF FRAME  
HALF FRONT ELEVATION  
OF FRAME

NOTE:  
BOLT CURB BOX TO FRAME WITH THREE  
5/8" x 2 1/2" GALVANIZED MACHINE BOLTS.  
ADJUST FOR HEIGHT AFTER FORMS FOR  
CURB ARE IN PLACE.



SIDE ELEVATION OF FRAME



LIFT HOLE DETAIL



PREPARED  
BY  
DESIGN DIVISION  
DRAWN BY: B.L.T.  
CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR  
Paul C. Ajegba

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF DEVELOPMENT 247

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**COVER K**  
FOR USE WITH CONCRETE CURB & GUTTER  
DETAILS C, E & F

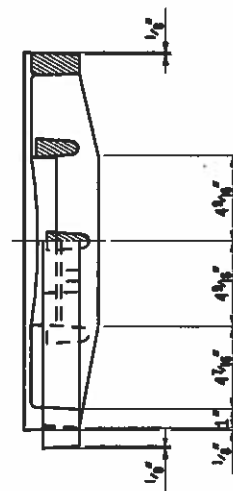
F.H.W.A. APPROVAL

7-26-2019  
PLAN DATE

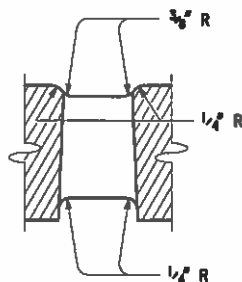
R-15-G

SHEET  
1 OF 3



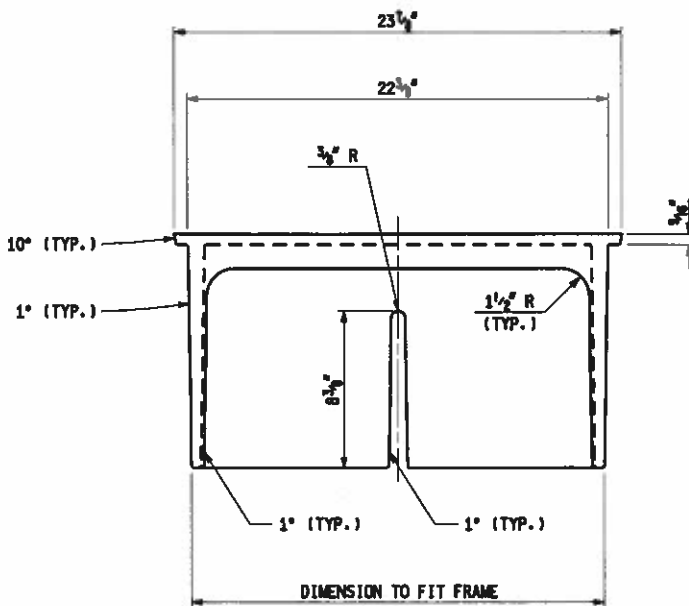


**HALF FRONT  
ELEVATION  
OF GRATE**

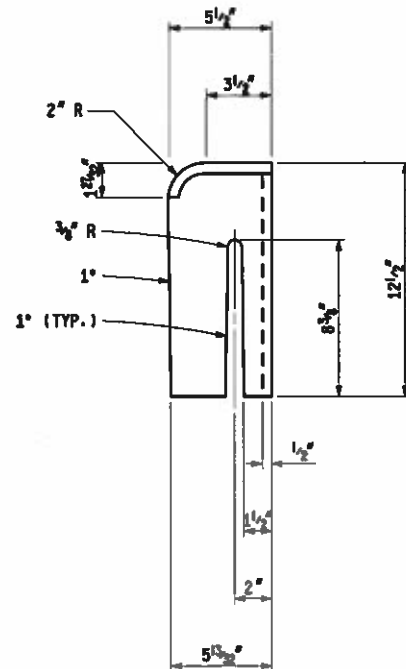


**SECTION Y - Y**

**SHEET**  
**2 OF 3**



FRONT VIEW OF CURB BOX



SIDE VIEW

NOTES:

THE CASTINGS SHALL MEET THE REQUIREMENTS OF THE CURRENT STANDARD SPECIFICATION FOR GRAY IRON OR DUCTILE IRON CASTINGS.

ALL CASTINGS SHALL BE CLEANED BY CURRENT APPROVED BLASTING METHODS.

THE SEATING FACE OF THE GRATE AND THE SEAT FOR THE SAME ON THE FRAME SHALL BE GROUND OR MACHINED SO THAT THE GRATE WILL HAVE AN EVEN BEARING ON ITS SEAT TO PREVENT ROCKING OR TILTING.

THE CASTINGS SHALL BE FREE OF POURING FAULTS, BLOW HOLES, CRACKS AND OTHER IMPERFECTIONS. THEY SHALL BE SOUND, TRUE TO FORM AND THICKNESS, CLEAN AND NEATLY FINISHED, AND SHALL BE COATED WITH COAL TAR PITCH VARNISH.

THE CURB BOX AND FRAME SHALL BE SHIPPED ASSEMBLED.

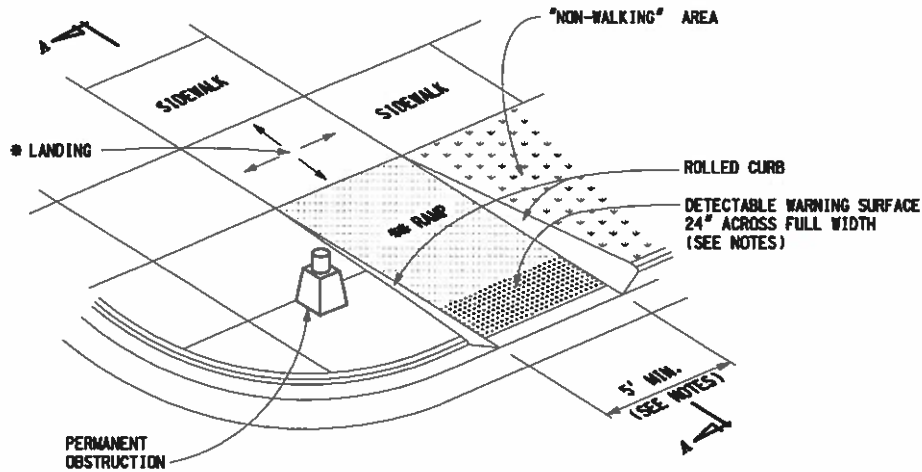
THIS COVER IS DESIGNED TO FIT ON ANY INLET, CATCH BASIN OR ON ANY EXISTING SIMILAR STRUCTURE WHEN SO DESIGNATED ON THE PLANS.

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

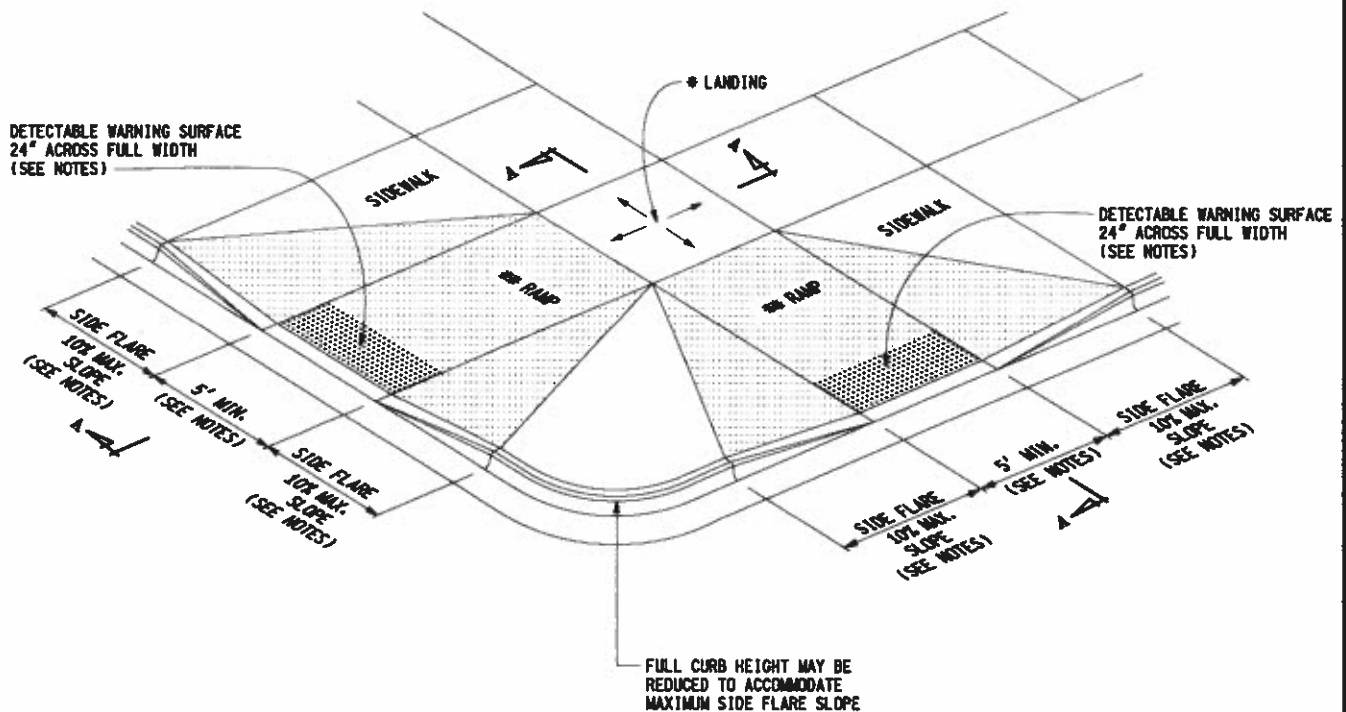
**COVER K**  
FOR USE WITH CONCRETE CURB & GUTTER  
DETAILS C, E & F

\* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

\* MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



**SIDEWALK RAMP TYPE R**  
(ROLLED SIDES)



**SIDEWALK RAMP TYPE F**  
(FLARED SIDES, TWO RAMPS SHOWN)



PREPARED  
BY  
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR  
Paul C. Ajegba

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF DEVELOPMENT 250

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

## SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL

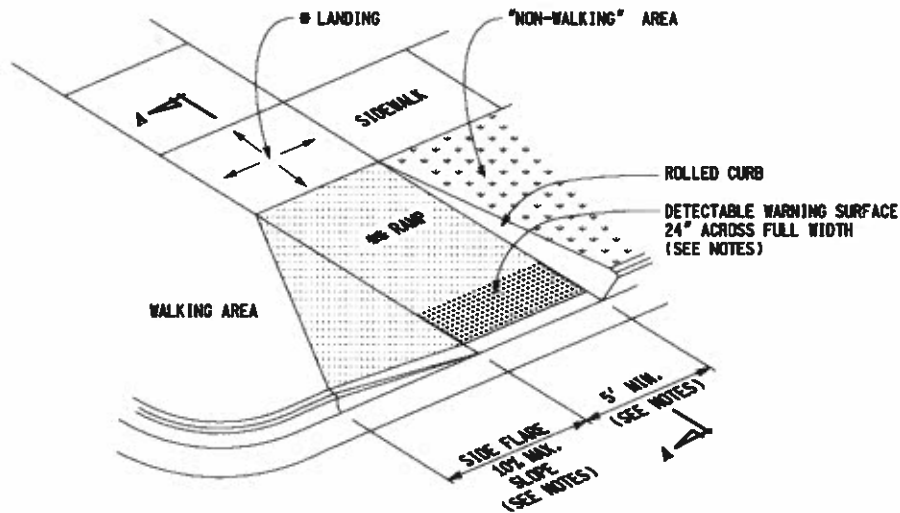
7-26-2019  
PLAN DATE

**R-28-J**

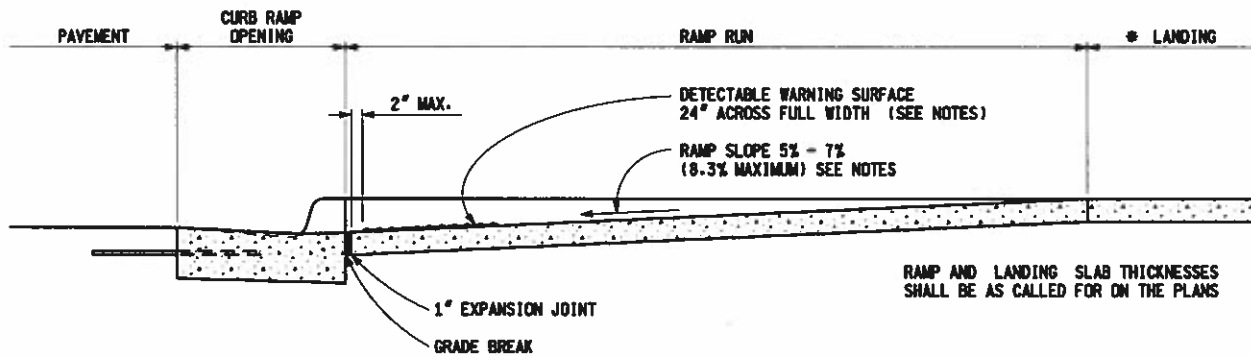
SHEET  
1 OF 1

\* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

\*\* MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



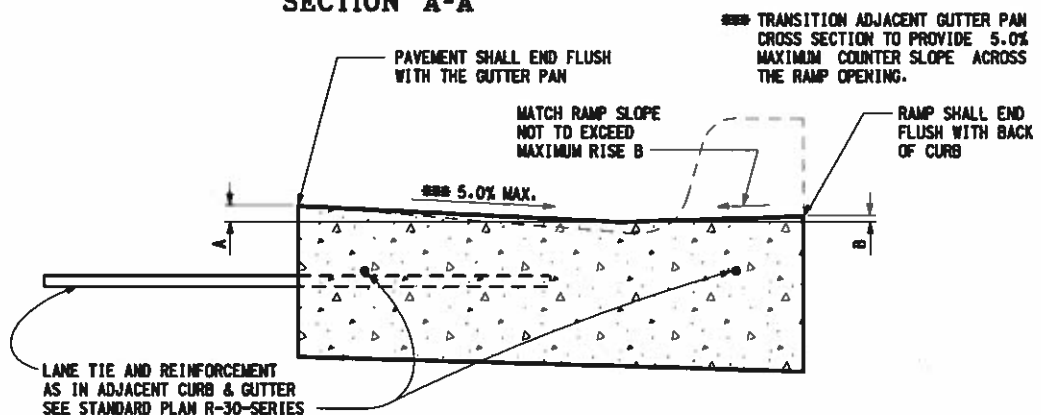
### SIDEWALK RAMP TYPE RF (ROLLED / FLARED SIDES)



### SECTION A-A

CURB TYPE	MAXIMUM RISE (INCHES)	
	A	B
B1	3/4	1
B2	3/4	1
B3	3/4	1
D1	3/4	1
D2	3/4	1
D3	3/4	1
C1	1/2	1/2
C2	1/2	1/2
C3	3/4	1/2
C4	3/4	1/2
C5	1	1/2
C6	1	1/2
F1	1/2	1/2
F2	1/2	1/2
F3	3/4	1/2
F4	3/4	1/2
F5	1	1/2
F6	1	1/2

FOR CURB TYPES SEE  
STANDARD PLAN R-30-SERIES

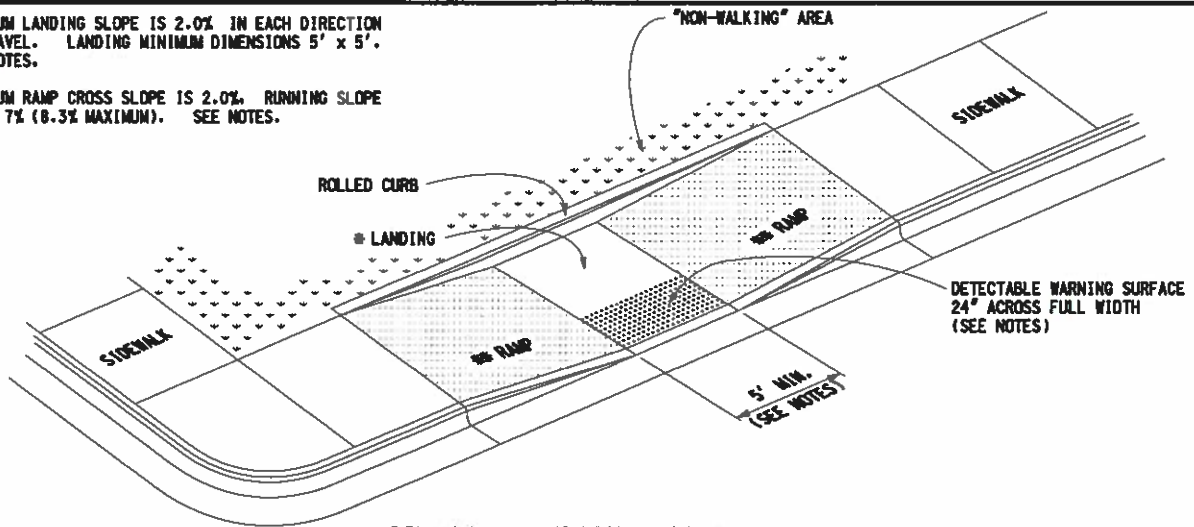


### SECTION THROUGH CURB RAMP OPENING (TYPICAL ALL RAMP TYPES)

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR  
**SIDEWALK RAMP AND  
DETECTABLE WARNING DETAILS**

\* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

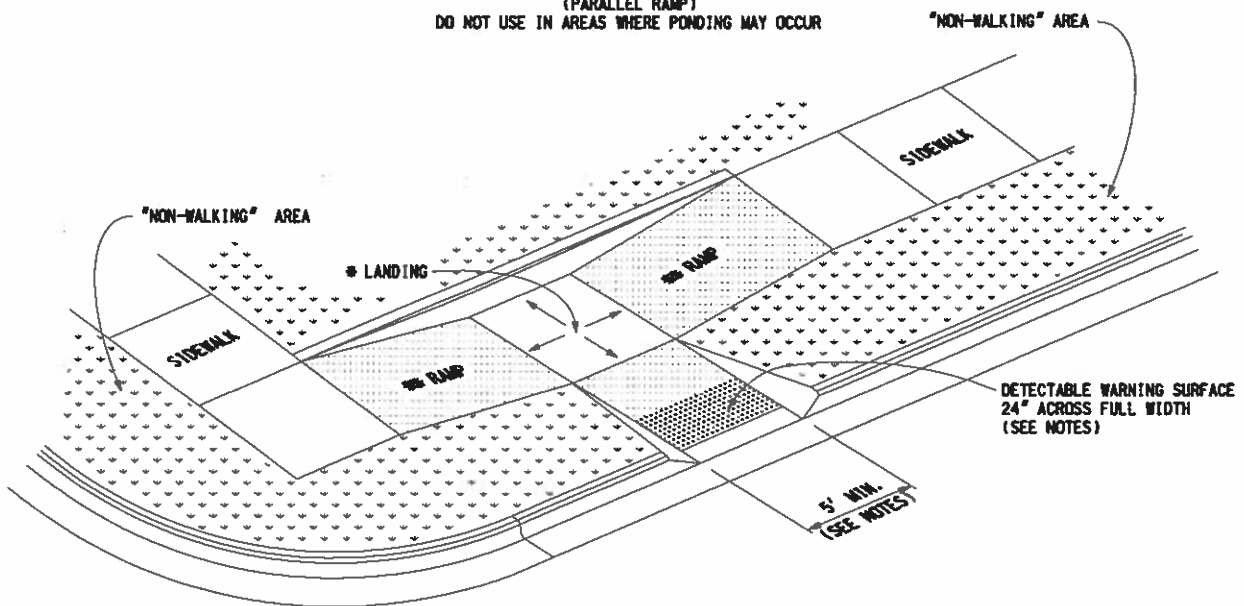
\* MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (0.3% MAXIMUM). SEE NOTES.



### SIDEWALK RAMP TYPE P

(PARALLEL RAMP)

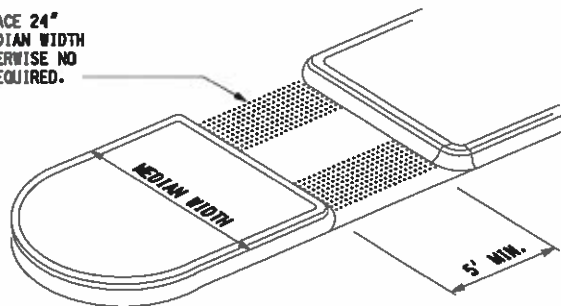
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



### SIDEWALK RAMP TYPE C

(COMBINATION RAMP)

DETECTABLE WARNING SURFACE 24" ACROSS FULL WIDTH IF MEDIAN WIDTH IS AT LEAST 6'-0". OTHERWISE NO DETECTABLE WARNING IS REQUIRED.



### SIDEWALK RAMP TYPE M

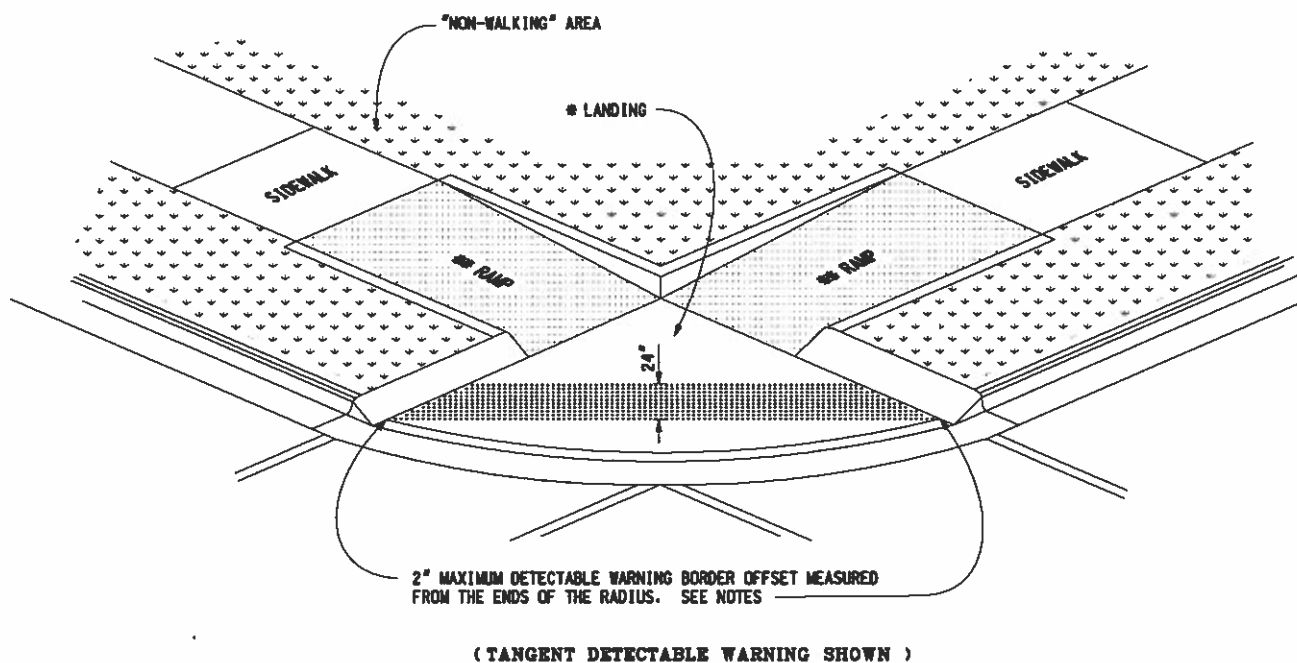
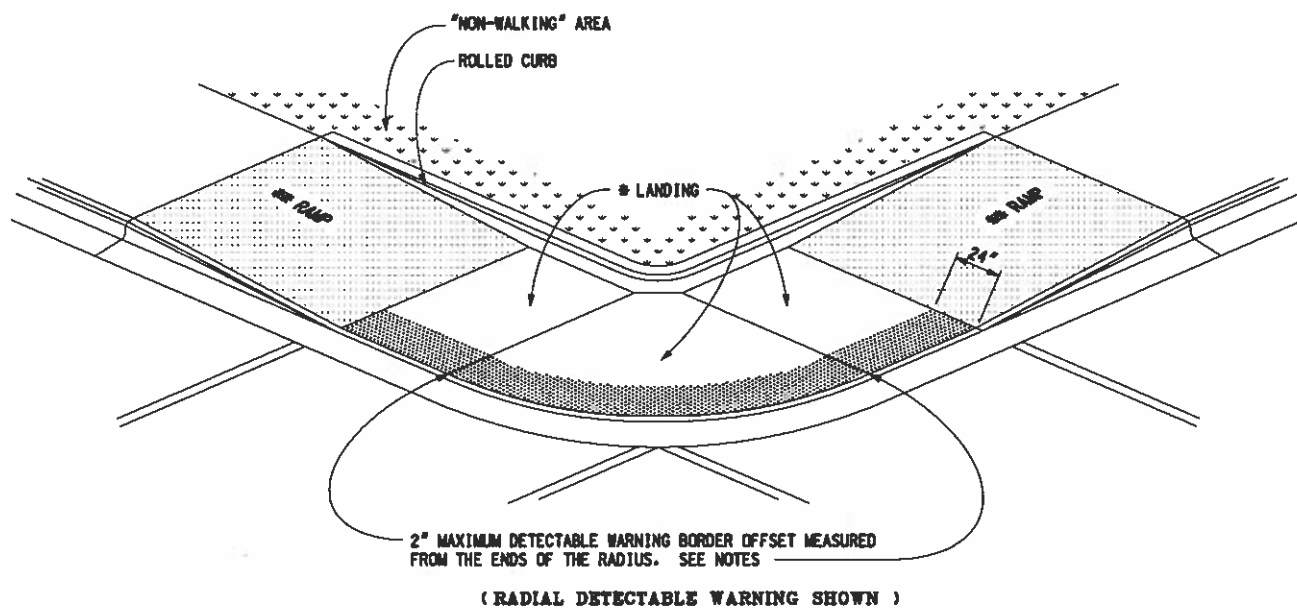
(MEDIAN ISLAND)

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

## SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

\* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

\*\* MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



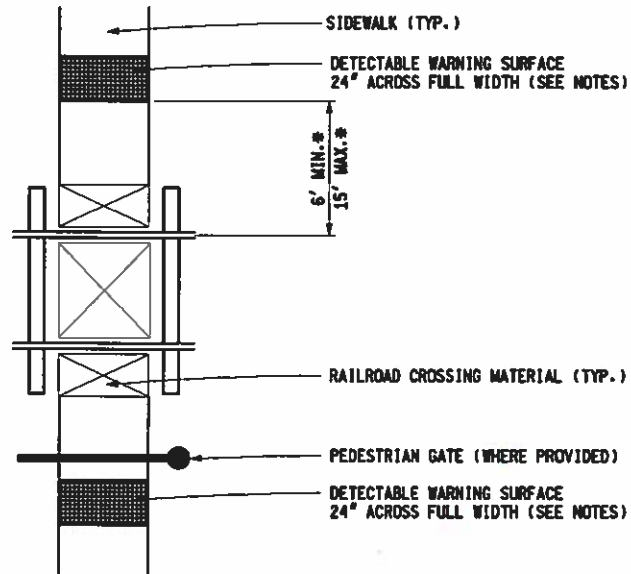
### SIDEWALK RAMP TYPE D (DEPRESSED CORNER)

USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

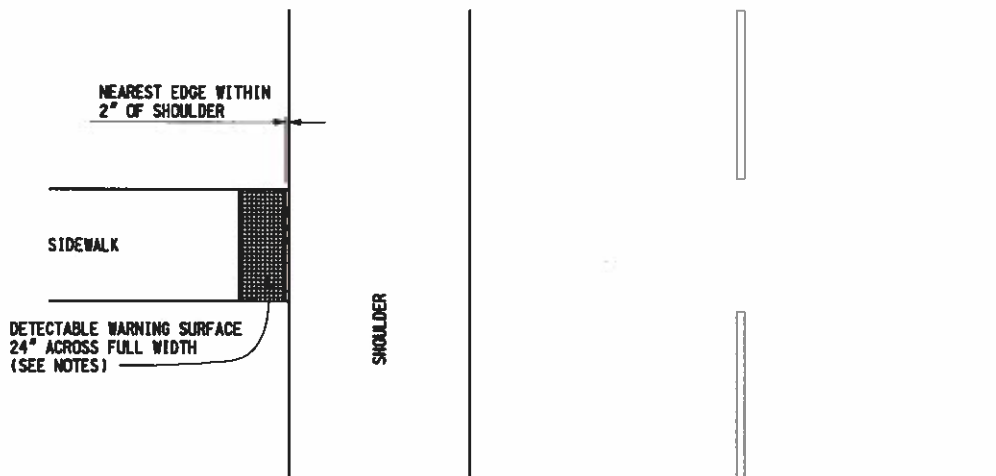
MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

## SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

\* THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



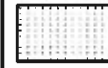
**DETECTABLE WARNING AT RAILROAD CROSSING**



**DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY**

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR			
<b>SIDEWALK RAMP AND DETECTABLE WARNING DETAILS</b>			
F.H.W.A. APPROVAL	7-26-2019	R-28-J	SHEET 5 OF 7
	PLAN DATE		

# LEGEND



SLOPED SURFACE



DETECTABLE WARNING



"NON-WALKING" AREA



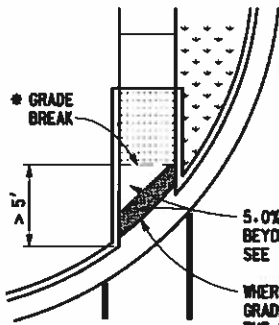
CROSSWALK MARKING



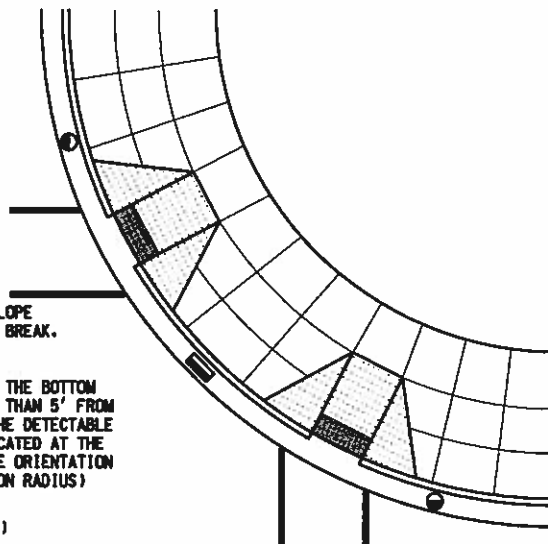
PREFERRED LOCATION OF DRAINAGE INLET (TYP.)



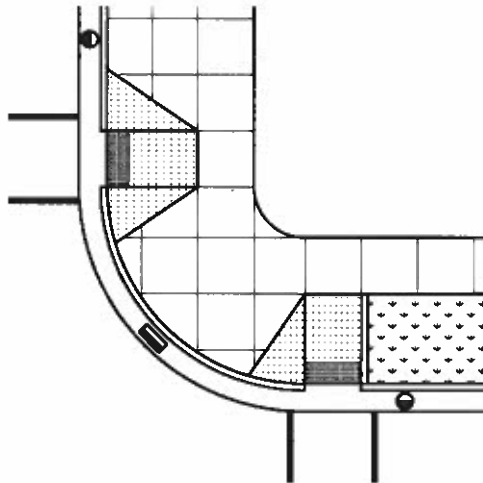
ALTERNATE LOCATION OF DRAINAGE INLET (TYP.)



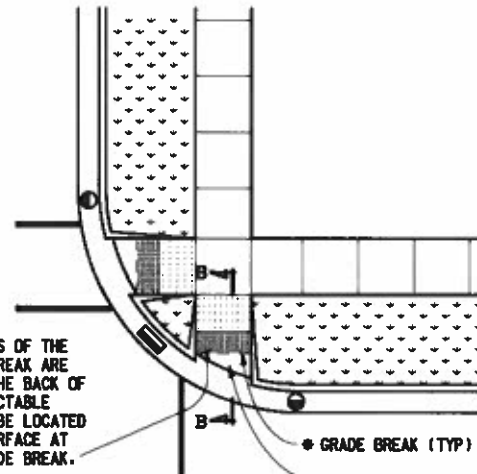
SIDEWALK RAMP LOCATED IN RADIUS (TYPE R SHOWN)  
(GRADE BREAK OFFSET GREATER THAN 5')



SIDEWALK RAMP PERPENDICULAR TO RADIAL CURB (TYPE F SHOWN)  
(USE WITH RADIAL CURB WHEN THE CROSSWALK AND SIDEWALK RAMP ARE NOT ALIGNED)



SIDEWALK RAMP PERPENDICULAR TO TANGENT CURB  
(TYPE F AND TYPE RF SHOWN)

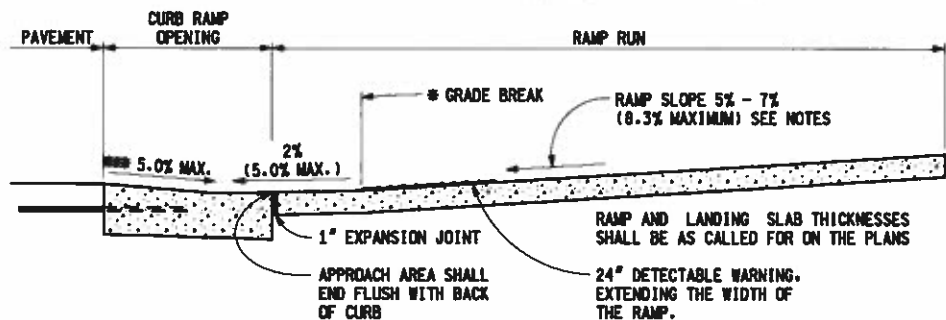


SIDEWALK RAMP LOCATED IN RADIUS (TYPE R SHOWN)  
(GRADE BREAK OFFSET LESS THAN 5')

\* GRADE BREAKS AT THE TOP AND BOTTOM OF CURB RAMPS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.

TRANSITION ADJACENT GUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.

SEE SHEET 2 FOR CURB RAMP OPENING DETAILS.



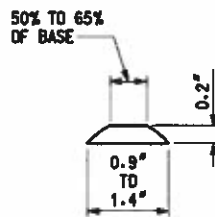
## SECTION B-B

### SIDEWALK RAMP ORIENTATION

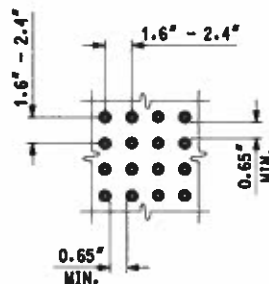
MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

## SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

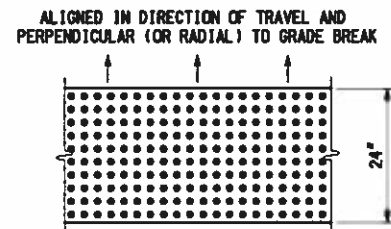




**DOME SECTION**



**DOME SPACING**



**DOME ALIGNMENT**

## DETECTABLE WARNING DETAILS

### NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

CURB RAMPS WITH A RUNNING SLOPE  $\leq 5\%$  DO NOT REQUIRE A TOP LANDING. HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN  $\frac{1}{2}$ ". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

## SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

## NOTICE TO BIDDERS – INQUIRY

All inquiries concerning the plans and proposal for this project are to be directed to:

Brent Schriener

Name

Urban Staff Engineer

Title

schrinerb@michigan.gov

E-mail Address

517-241-2911

Phone

**All inquiries must be made by E-mail through the electronic proposal system at MDOT's e-Proposal website – [www.michigan.gov/mdot-eprop](http://www.michigan.gov/mdot-eprop).** Telephone inquiries will not be answered. To be able to process and distribute an addendum, if required, all inquiries shall be made at least seven (7) calendar days before the letting. Inquiries made after this date will be considered by MDOT, but will not require a response.

Inquiries made by E-mail must include the following information:

Proposal Item Number

Contract ID

Name of Inquiring Person

Company Name

Phone # and E-mail address

Detailed question(s) with reference to proposal page and plan sheet number

Other employees of MDOT have been instructed to direct all inquiries to the person mentioned above.

2/11/2009

Job(s): 207637A

"General Decision Number: MI20200001 07/24/2020

Superseded General Decision Number: MI20190001

State: Michigan

Construction Types: Highway (Highway, Airport & Bridge xxxxx  
and Sewer/Incid. to Hwy.)

Counties: Michigan Statewide.

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 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 \$10.80 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 2020. 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	01/03/2020
1	01/24/2020
2	02/07/2020
3	05/08/2020
4	05/29/2020
5	06/12/2020
6	06/26/2020
7	07/03/2020
8	07/10/2020
9	07/24/2020

CARP0004-004 06/01/2019

REMAINDER OF STATE

	Rates	Fringes
CARPENTER ( Piledriver).....	\$ 27.62	20.59

-----  
CARP0004-005 06/01/2018

LIVINGSTON (Townships of Brighton, Deerfield, Genoa, Hartland,  
Oceola & Tyrone), MACOMB, MONROE, OAKLAND, SANILAC, ST. CLAIR  
AND WAYNE COUNTIES

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 30.50	27.28

-----  
ELEC0017-005 06/01/2020

#### STATEWIDE

	Rates	Fringes
Line Construction		
Groundman/Driver.....	\$ 28.84	16.03
Journeyman Signal Tech, Communications Tech, Tower Tech & Fiber Optic Splicers.	\$ 41.44	20.00
Journeyman Specialist.....	\$ 47.66	21.96
Operator A.....	\$ 35.02	17.99
Operator B.....	\$ 32.69	17.25

#### Classifications

Journeyman Specialist: Refers to a crew of only one person working alone.

Operator A: Shall be proficient in operating all power equipment including: Backhoe,

Excavator, Directional Bore and Boom/Digger truck.

Operator B: Shall be proficient in operating any 2 of the above mentioned pieces of equipment listed under Operator A.

-----  
ENGI0324-003 06/01/2020

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LENAWEE, LIVINGSTON, MACOMB, MIDLAND, MONROE, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLAIR, SANILAC, SHIAWASSEE, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
GROUP 1.....	\$ 47.02	24.85
GROUP 2.....	\$ 48.02	24.85
GROUP 3.....	\$ 45.52	24.85
GROUP 4.....	\$ 46.52	24.85
GROUP 5.....	\$ 44.02	24.85
GROUP 6.....	\$ 45.02	24.85
GROUP 7.....	\$ 43.75	24.85
GROUP 8.....	\$ 44.75	24.85
GROUP 9.....	\$ 43.30	24.85
GROUP 10.....	\$ 44.30	24.85
GROUP 11.....	\$ 42.57	24.85
GROUP 12.....	\$ 43.57	24.85
GROUP 13.....	\$ 42.21	24.85
GROUP 14.....	\$ 43.21	24.85
GROUP 15.....	\$ 41.57	24.85
GROUP 16.....	\$ 38.62	24.85
GROUP 17.....	\$ 24.14	12.00
GROUP 18.....	\$ 27.63	12.00

FOOTNOTE:

Paid Holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Engineer when operating combination of boom and jib 400' or longer

GROUP 2: Engineer when operating combination of boom and jib 400' or longer on a crane that requires an oiler

GROUP 3: Engineer when operating combination of boom and jib 300' or longer

GROUP 4: Engineer when operating combination of boom and jib 300' or longer on a crane that requires an oiler

GROUP 5: Engineer when operating combination of boom and jib 220' or longer

GROUP 6: Engineer when operating combination of boom and jib 220' or longer on a crane that requires an oiler

GROUP 7: Engineer when operating combination of boom and jib 140' or longer

GROUP 8: Engineer when operating combination of boom and jib 140' or longer on a crane that requires an oiler

GROUP 9: Tower crane & derrick operator (where operator's work station is 50 ft. or more above first sub-level)

GROUP 10: Tower crane & derrick operator (where operator's work station is 50 ft. or more above first sub-level) on a crane that requires an oiler

GROUP 11: Engineer when operating combination of boom and jib 120' or longer

GROUP 12: Engineer when operating combination of boom and jib 120' or longer on a crane that requires an oiler

GROUP 13: Crane operator; job mechanic and 3 drum hoist and excavator

GROUP 14: Crane operator on a crane that requires an oiler

GROUP 15: Hoisting operator; 2 drum hoist and rubber tired backhoe

GROUP 16: Forklift and 1 drum hoist

GROUP 17: Compressor or welder operator

GROUP 18: Oiler

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\* ENGI0324-004 06/01/2020

AREA 1: ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, EATON, HILLSDALE, IONIA, KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH, VAN BUREN

AREA 2: ANTRIM, BENZIE, CHARLEVOIX, EMMET, GRAND TRAVERSE, KALKASKA, LEELANAU, MISSAUKEE AND WEXFORD COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
AREA 1		
GROUP 1.....	\$ 47.02	24.85
GROUP 2.....	\$ 43.75	24.85
GROUP 3.....	\$ 42.21	24.85
GROUP 4.....	\$ 38.62	24.85
GROUP 5.....	\$ 24.14	12.00
GROUP 6.....	\$ 27.63	12.00
AREA 2		
GROUP 1.....	\$ 47.02	24.85
GROUP 2.....	\$ 43.75	24.85
GROUP 3.....	\$ 42.21	24.85
GROUP 4.....	\$ 38.62	24.85
GROUP 5.....	\$ 24.14	12.00
GROUP 6.....	\$ 27.63	12.00

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 additional to the group 1 rate. Crane operator with main boom and jib 400' or longer: \$3.00 additional to the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Crane Operator with main boom & jib 400', 300', or 220' or longer.

GROUP 2: Crane Operator with main boom & jib 140' or longer, Tower Crane; Gantry Crane; Whirley Derrick.

GROUP 3: Regular Equipment Operator, Crane, Dozer, Loader, Hoist, Straddle Wagon, Mechanic, Grader and Hydro Excavator.

GROUP 4: Air Tugger (single drum), Material Hoist Pump 6" or over, Elevators, Brokk Concrete Breaker.

GROUP 5: Air Compressor, Welder, Generators, Conveyors

GROUP 6: Oiler and fire tender

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ENGI0324-005 09/01/2019

AREA 1: GENESEE, LAPEER, LIVINGSTON, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALCONA, ALLEGAN, ALGER, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KWEENAW, LAKE, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment (Underground construction (including sewer))		
AREA 1:		
GROUP 1.....	\$ 34.63	24.35
GROUP 2.....	\$ 29.90	24.35
GROUP 3.....	\$ 29.17	24.35
GROUP 4.....	\$ 28.60	24.35
GROUP 5.....	\$ 21.40	13.48
AREA 2:		
GROUP 1.....	\$ 32.92	24.35
GROUP 2.....	\$ 28.03	24.35
GROUP 3.....	\$ 27.53	24.35
GROUP 4.....	\$ 27.25	24.35
GROUP 5.....	\$ 21.40	13.48

#### POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backfiller tamper; Backhoe; Batch plant operator (concrete); Clamshell; Concrete paver (2 drums or larger); Conveyor loader (Euclid type); Crane (crawler, truck type or pile driving); Dozer; Dragline; Elevating grader; Endloader; Gradall (and similar type machine); Grader; Mechanic; Power shovel; Roller (asphalt); Scraper (self-propelled or tractor drawn); Side boom tractor (type D-4 or equivalent and larger); Slip form paver; Slope paver; Trencher (over 8 ft. digging capacity); Well drilling rig; Concrete pump with boom operator; Hydro Excavator

GROUP 2: Boom truck (power swing type boom); Crusher; Hoist; Pump (1 or more - 6-in. discharge or larger - gas or diesel- powered or powered by generator of 300 amperes or more - inclusive of generator); Side boom tractor (smaller than type D-4 or equivalent); Tractor (pneu-tired, other than backhoe or front end loader); Trencher (8-ft. digging capacity and smaller); Vac Truck and End dump operator;

GROUP 3: Air compressors (600 cfm or larger); Air compressors (2 or more-less than 600 cfm); Boom truck (non-swinging, non- powered type boom); Concrete breaker (self-propelled or truck mounted - includes compressor); Concrete paver (1 drum-1/2 yd. or larger); Elevator (other than passenger); Maintenance person; Pump (2 or more-4-in. up to 6-in. discharge-gas or diesel powered - excluding submersible pumps); Pumpcrete machine (and similar equipment); Wagon drill (multiple); Welding machine or generator (2 or more-300 amp. or larger - gas or diesel powered)

GROUP 4: Boiler; Concrete saw (40 hp or over); Curing machine (self-propelled); Farm tractor (with attachment); Finishing machine (concrete); Hydraulic pipe pushing machine; Mulching equipment; Pumps (2 or more up to 4-in. discharge, if used 3 hours or more a day, gas or diesel powered - excluding submersible pumps); Roller (other than asphalt); Stump remover; Trencher (service); Vibrating compaction equipment, self-propelled (6 ft. wide or over); Sweeper (Wayne type); Water wagon and Extend-a boom forklift

Group 5: Fire Person, Oiler

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 \* ENGI0324-006 06/01/2020

GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW, WAYNE, ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
Power equipment operators: (AIRPORT, BRIDGE & HIGHWAY CONSTRUCTION)		
GROUP 1.....	\$ 34.91	24.85
GROUP 2.....	\$ 28.18	24.85
GROUP 3.....	\$ 27.62	24.85
GROUP 4.....	\$ 27.45	24.85

#### POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt plant operator; Crane operator (does not include work on bridge construction projects when the crane operator is erecting structural components); Dragline operator; Shovel operator; Locomotive operator; Paver operator (5 bags or more); Elevating grader operator; Pile driving operator; Roller operator (asphalt); Blade grader operator; Trenching machine operator (ladder or wheel type); Auto-grader; Slip form paver; Self-propelled or tractor-drawn scraper; Conveyor loader operator (Euclid type); Endloader operator (1 yd. capacity and over); Bulldozer; Hoisting engineer; Tractor operator; Finishing machine operator (asphalt); Mechanic; Pump operator (6-in. discharge or over, gas, diesel powered or generator of 300 amp. or larger); Shouldering or gravel distributing machine operator (self-propelled); Backhoe (with over 3/8 yd. bucket); Side boom tractor (type D-4 or equivalent or larger); Tube finisher (slip form paving); Gradall (and similar type machine); Asphalt paver (self-propelled); Asphalt planer (self-propelled); Batch plant (concrete-central mix); Slurry machine (asphalt); Concrete pump (3 in. and over); Roto-mill; Swinging boom truck (over



12 ton capacity); Hydro demolisher (water blaster);  
 Farm-type tractor with attached pan; Vacuum truck operator;  
 Batch Plant (concrete dry batch); Concrete Saw Operator  
 (40h.p. or over; Tractor Operator (farm type); Finishing  
 Machine Operator (concrete); Grader Operator  
 (self-propelled fine grade or form (concrete)).

GROUP 2: Screening plant operator; Washing plant operator;  
 Crusher operator; Backhoe (with 3/8 yd. bucket or less);  
 Side boom tractor (smaller than D-4 type or equivalent);  
 Sweeper (Wayne type and similar equipment); Greese Truck;  
 Air Compressor Operator (600 cu.ft. per min or more); Air  
 Compressor Operator (two or more, less than 600 cfm);

GROUP 3: Boiler fire tender; Tractor operator (farm type with  
 attachment); Concrete Breaker; Wagon Drill Operator;

GROUP 4: Oiler; Fire tender; Trencher (service); Flexplane  
 operator; Cleftplane operator; Boom or winch hoist truck  
 operator; Endloader operator \*under 1 yd. capacity); Roller  
 Operator (other than asphalt); Curing equipment operator  
 (self-propelled); Power bin operator; Plant drier (6 ft.  
 wide or over); Guard post driver operator (power driven);  
 All mulching equipment; Stump remover; Concrete pump (under  
 3-in.); Mesh installer (self-propelled); End dump; Skid  
 Steer.

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 ENGI0324-007 05/01/2020

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON,  
 IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON  
 AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
Compressor, welder and forklift.....	\$ 33.90	24.60
Crane operator, main boom & jib 120' or longer.....	\$ 40.37	24.60
Crane operator, main boom & jib 140' or longer.....	\$ 40.67	24.60
Crane operator, main boom & jib 220' or longer.....	\$ 41.26	24.60
Mechanic with truck and tools.....	\$ 39.50	24.60
Oiler and fireman.....	\$ 32.36	24.60
Regular operator.....	\$ 37.72	24.60

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 ENGI0324-008 10/01/2015

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY,  
 BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,  
 CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,  
 DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND  
 TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA,  
 IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT,  
 KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE,  
 MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA,  
 MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE,  
 MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA,

OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST.  
CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA,  
VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment (Sewer Relining)		
GROUP 1.....	\$ 30.70	12.93
GROUP 2.....	\$ 29.17	12.93

#### SEWER RELINING CLASSIFICATIONS

GROUP 1: Operation of audio-visual closed circuit TV system,  
including remote in-ground cutter and other equipment used  
in connection with the CCTV system

GROUP 2: Operation of hot water heaters and circulation  
systems, water jetters and vacuum and mechanical debris  
removal systems

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ENGI0325-012 05/01/2020

	Rates	Fringes
Power equipment operators - gas distribution and duct installation work:		
GROUP 1.....	\$ 32.18	24.85
GROUP 2.....	\$ 32.06	24.85
GROUP 3.....	\$ 30.35	24.85

SCOPE OF WORK: The construction, installation, treating and  
reconditioning of pipelines transporting gas vapors within  
cities, towns, subdivisions, suburban areas, or within  
private property boundaries, up to and including private  
meter settings of private industrial, governmental or other  
premises, more commonly referred to as "distribution work,"  
starting from the first metering station, connection,  
similar or related facility, of the main or cross country  
pipeline and including duct installation.

Group 1: Backhoe, crane, grader, mechanic, dozer (D-6  
equivalent or larger), side boom (D-4 equivalent or  
larger), trencher(except service), endloader (2 yd.  
capacity or greater).

GROUP 2: Dozer (less than D-6 equivalent), endloader (under  
2 yd. capacity), side boom (under D-4 capacity),  
backfiller, pumps (1 or 2 of 6-inch discharge or greater),  
boom truck (with powered boom), tractor (wheel type other  
than backhoe or front endloader). Tamper (self-propelled),  
boom truck (with non-powered boom), concrete saw (20 hp or  
larger), pumps (2 to 4 under 6-inch discharge), compressor  
(2 or more or when one is used continuously into the second  
day) and trencher(service).

GROUP 3: Oiler, hydraulic pipe pushing machine, grease  
person and hydrostatic testing operator.

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IRON0008-007 06/01/2019

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON,  
IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON  
AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector.....	\$ 23.70	6.95
IRONWORKER		
General contracts		
\$10,000,000 or greater.....	\$ 33.00	27.12
General contracts less than \$10,000,000.....	\$ 33.00	27.12

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor  
Day, Thanksgiving Day & Christmas Day.

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IRON0025-002 06/01/2019

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON,  
CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO,  
ISABELLA, JACKSON, LAPEER, LIVINGSTON, MACOMB, MIDLAND,  
MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE,  
ROSCOMMON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, TUSCOLA,  
WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector		
Alcona, Alpena, Arenac, Cheboygan, Clare, Clinton, Crawford, Gladwin, Gratiot, Huron, Ingham, Iosco, Isabella, Jackson, Lapeer, Livingston (west of Burkhardt Road), Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, Sanilac, Shiawassee, Tuscola & Washtenaw (west of U.S. 23)...	\$ 24.26	22.11
Bay, Genesee, Lapeer, Livingston (east of Burkhardt Road), Macomb, Midland, Oakland, Saginaw, St. Clair, The University of Michigan, Washtenaw (east of U.S. 23) & Wayne...	\$ 25.48	23.11
IRONWORKER		
Ornamental and Structural...	\$ 36.77	29.03
Reinforcing.....	\$ 30.98	27.99

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IRON0055-005 07/01/2019

LENAWEE AND MONROE COUNTIES:

	Rates	Fringes
IRONWORKER		
Pre-engineered metal buildings.....	\$ 23.59	19.35
All other work.....	\$ 30.38	24.40

IRON0292-003 06/01/2019

BERRIEN AND CASS COUNTIES:

	Rates	Fringes
IRONWORKER (Including pre-engineered metal building erector).....	\$ 30.95	22.25

IRON0340-001 06/19/2017

ALLEGAN, ANTRIM, BARRY, BENZIE, BRANCH, CALHOUN, CHARLEVOIX, EATON, EMMET, GRAND TRAVERSE, HILLSDALE, IONIA, KALAMAZOO, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH, VAN BUREN AND WEXFORD COUNTIES:

	Rates	Fringes
IRONWORKER (Including pre-engineered metal building erector).....	\$ 24.43	24.67

LABO0005-006 10/01/2017

	Rates	Fringes
Laborers - hazardous waste abatement: (ALCONA, ALPENA, ANTRIM, BENZIE, CHARLEVOIX, CHEBOYGAN, CRAWFORD, EMMET, GRAND TRAVERSE, IOSCO, KALKASKA, LEELANAU, MISSAUKEE, MONTMORENCY, OSCODA, OTSEGO, PRESQUE ISLE AND WEXFORD COUNTIES - Zone 10)		
Levels A, B or C.....	\$ 17.45	12.75
class b.....	\$ 18.00	12.85
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....	\$ 16.45	12.75
class a.....	\$ 17.00	12.85

Zone 10

Laborers - hazardous waste abatement: (ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT

COUNTIES - Zone 11)		
Levels A, B or C.....\$ 21.63	12.88	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 20.63	12.88	
Laborers - hazardous waste abatement: (ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, IONIA COUNTY (except the city of Portland); KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH AND VAN BUREN COUNTIES - Zone 9)		
Levels A, B or C.....\$ 20.95	12.85	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 19.95	12.85	
Laborers - hazardous waste abatement: (ARENAC, BAY, CLARE, GLADWIN, GRATIOT, HURON, ISABELLA, MIDLAND, OGEMAW, ROSCOMMON, SAGINAW AND TUSCOLA COUNTIES - Zone 8)		
Levels A, B or C.....\$ 20.65	12.85	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 19.65	12.85	
Laborers - hazardous waste abatement: (CLINTON, EATON AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); LIVINGSTON COUNTY (west of Oak Grove Rd., including the City of Howell) - Zone 6)		
Levels A, B or C.....\$ 24.65	12.85	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 23.65	12.85	
Laborers - hazardous waste abatement: (GENESEE, LAPEER AND SHIAWASSEE COUNTIES - Zone 7)		
Levels A, B or C.....\$ 23.61	13.41	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		

Also, Level D.....\$ 22.61	13.41
Laborers - hazardous waste	
abatement: (HILLSDALE,	
JACKSON AND LENAWEE COUNTIES	
- Zone 4)	
Levels A, B or C.....\$ 24.19	12.85
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 23.19	12.85
Laborers - hazardous waste	
abatement: (LIVINGSTON COUNTY	
(east of Oak Grove Rd. and	
south of M-59, excluding the	
city of Howell); AND	
WASHTENAW COUNTY - Zone 3)	
Levels A, B or C.....\$ 29.70	14.20
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 28.70	14.20
Laborers - hazardous waste	
abatement: (MACOMB AND WAYNE	
COUNTIES - Zone 1)	
Levels A, B or C.....\$ 28.35	16.75
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 27.35	16.75
Laborers - hazardous waste	
abatement: (MONROE COUNTY -	
Zone 4)	
Levels A, B or C.....\$ 30.85	14.45
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 29.84	14.45
Laborers - hazardous waste	
abatement: (OAKLAND COUNTY	
and the Northeast portion of	
LIVINGSTON COUNTY bordered by	
Oak Grove Road on the West	
and M-59 on the South - Zone	
2)	
Level A, B, C.....\$ 28.85	16.75
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 27.85	16.75
Laborers - hazardous waste	
abatement: (SANILAC AND ST.	
CLAIR COUNTIES - Zone 5)	
Levels A, B or C.....\$ 25.19	15.86

Work performed in  
 conjunction with site  
 preparation not requiring  
 the use of personal  
 protective equipment;

Also, Level D.....\$ 24.19 15.86

LABO0259-001 09/01/2018

AREA 1: MACOMB, OAKLAND AND WAYNE COUNTIES

AREA 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,  
 BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,  
 CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,  
 DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND  
 TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA,  
 IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT,  
 KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE,  
 MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE,  
 MIDLAND, MISSAUKEE, MONROE, MONTCALM, MONTMORENCY, MUSKEGON,  
 NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO,  
 OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST.  
 JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN,  
 WASHTENAW AND WEXFORD COUNTIES

	Rates	Fringes
Laborers - tunnel, shaft and caisson:		
AREA 1		
GROUP 1.....	\$ 22.57	16.80
GROUP 2.....	\$ 22.68	16.80
GROUP 3.....	\$ 22.74	16.80
GROUP 4.....	\$ 22.92	16.80
GROUP 5.....	\$ 23.17	16.80
GROUP 6.....	\$ 23.50	16.80
GROUP 7.....	\$ 16.78	16.80
AREA 2		
GROUP 1.....	\$ 24.10	12.85
GROUP 2.....	\$ 24.19	12.85
GROUP 3.....	\$ 24.29	12.85
GROUP 4.....	\$ 24.45	12.85
GROUP 5.....	\$ 24.71	12.85
GROUP 6.....	\$ 25.02	12.85
GROUP 7.....	\$ 17.29	12.85

SCOPE OF WORK: Tunnel, shaft and caisson work of every type  
 and description and all operations incidental thereto,  
 including, but not limited to, shafts and tunnels for  
 sewers, water, subways, transportation, diversion,  
 sewerage, caverns, shelters, aquifers, reservoirs, missile  
 silos and steel sheeting for underground construction.

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Tunnel, shaft and caisson laborer, dump, shanty, hog  
 house tender, testing (on gas) and watchman

GROUP 2: Manhole, headwall, catch basin builder, bricklayer  
 tender, mortar machine and material mixer

GROUP 3: Air tool operator (jackhammer, bush hammer and  
 grinder), first bottom, second bottom, cage tender, car  
 pusher, carrier, concrete, concrete form, concrete repair,

cement invert laborer, cement finisher, concrete shoveler, conveyor, floor, gasoline and electric tool operator, gunite, grout operator, welder, heading dinky person, inside lock tender, pea gravel operator, pump, outside lock tender, scaffold, top signal person, switch person, track, tugger, utility person, vibrator, winch operator, pipe jacking, wagon drill and air track operator and concrete saw operator (under 40 h.p.)

GROUP 4: Tunnel, shaft and caisson mucker, bracer, liner plate, long haul dinky driver and well point

GROUP 5: Tunnel, shaft and caisson miner, drill runner, key board operator, power knife operator, reinforced steel or mesh (e.g. wire mesh, steel mats, dowel bars, etc.)

GROUP 6: Dynamite and powder

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

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LAB00334-001 09/01/2018

	Rates	Fringes
Laborers - open cut:		
ZONE 1 - MACOMB, OAKLAND AND WAYNE COUNTIES:		
GROUP 1.....	\$ 22.42	16.80
GROUP 2.....	\$ 22.53	16.80
GROUP 3.....	\$ 22.58	16.80
GROUP 4.....	\$ 22.66	16.80
GROUP 5.....	\$ 22.72	16.80
GROUP 6.....	\$ 20.17	16.80
GROUP 7.....	\$ 16.79	16.80
ZONE 2 - LIVINGSTON COUNTY (east of M-151 (Oak Grove Rd.)); MONROE AND WASHTENAW COUNTIES:		
GROUP 1.....	\$ 23.75	12.85
GROUP 2.....	\$ 23.86	12.85
GROUP 3.....	\$ 23.98	12.85
GROUP 4.....	\$ 24.05	12.85
GROUP 5.....	\$ 24.20	12.85
GROUP 6.....	\$ 21.50	12.85
GROUP 7.....	\$ 18.14	12.85
ZONE 3 - CLINTON, EATON, GENESEE, HILLSDALE AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); JACKSON, LAPEER AND LENAWEE COUNTIES; LIVINGSTON COUNTY (west of M-151 Oak Grove Rd.); SANILAC, ST. CLAIR AND SHIAWASSEE COUNTIES:		
GROUP 1.....	\$ 21.94	12.85
GROUP 2.....	\$ 22.08	12.85
GROUP 3.....	\$ 22.20	12.85
GROUP 4.....	\$ 22.25	12.85
GROUP 5.....	\$ 22.39	12.85



GROUP 6.....	\$ 19.69	12.85
GROUP 7.....	\$ 16.84	12.85
ZONE 4 - ALCONA, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, GRATIOT AND HURON COUNTIES; IONIA COUNTY (EXCEPT THE CITY OF PORTLAND); IOSCO, ISABELLA, KALAMAZOO, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES:		
GROUP 1.....	\$ 20.97	12.85
GROUP 2.....	\$ 21.10	12.85
GROUP 3.....	\$ 21.21	12.85
GROUP 4.....	\$ 21.28	12.85
GROUP 5.....	\$ 21.40	12.85
GROUP 6.....	\$ 18.62	12.85
GROUP 7.....	\$ 16.96	12.85
ZONE 5 - ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:		
GROUP 1.....	\$ 21.19	12.85
GROUP 2.....	\$ 21.33	12.85
GROUP 3.....	\$ 21.46	12.85
GROUP 4.....	\$ 21.51	12.85
GROUP 5.....	\$ 21.56	12.85
GROUP 6.....	\$ 18.94	12.85
GROUP 7.....	\$ 17.05	12.85

#### SCOPE OF WORK:

Open cut construction work shall be construed to mean work which requires the excavation of earth including industrial, commercial and residential building site excavation and preparation, land balancing, demolition and removal of concrete and underground appurtenances, grading, paving, sewers, utilities and improvements; retention, oxidation, flocculation and irrigation facilities, and also including but not limited to underground piping, conduits, steel sheeting for underground construction, and all work incidental thereto, and general excavation. For all areas except the Upper Peninsula, open cut construction work shall also be construed to mean waterfront work, piers,

docks, seawalls, breakwalls, marinas and all incidental work. Open cut construction work shall not include any structural modifications, alterations, additions and repairs to buildings, or highway work, including roads, streets, bridge construction and parking lots or steel erection work and excavation for the building itself and back filling inside of and within 5 ft. of the building and foundations, footings and piers for the building. Open cut construction work shall not include any work covered under Tunnel, Shaft and Caisson work.

#### OPEN CUT LABORER CLASSIFICATIONS

##### GROUP 1: Construction laborer

GROUP 2: Mortar and material mixer, concrete form person, signal person, well point person, manhole, headwall and catch basin builder, headwall, seawall, breakwall and dock builder

GROUP 3: Air, gasoline and electric tool operator, vibrator operator, driller, pump person, tar kettle operator, bracer, rodder, reinforced steel or mesh person (e.g., wire mesh, steel mats, dowel bars, etc.), welder, pipe jacking and boring person, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger person and directional boring person

##### GROUP 4: Trench or excavating grade person

GROUP 5: Pipe layer (including crock, metal pipe, multi-plate or other conduits)

GROUP 6: Grouting man, audio-visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation and repair of water service pipe and appurtenances

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

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LABO0465-001 06/01/2019

LABORER: Highway, Bridge and Airport Construction

AREA 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALLEGAN, BARRY, BAY, BERRIEN, BRANCH, CALHOUN, CASS, CLINTON, EATON, GRATIOT, HILLSDALE, HURON, INGHAM, JACKSON, KALAMAZOO, LAPEER, LENAWEE, LIVINGSTON, MIDLAND, MUSKEGON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA AND VAN BUREN COUNTIES

AREA 3: ALCONA, ALPENA, ANTRIM, ARENAC, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, IONIA, IOSCO, ISABELLA, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MONTMORENCY, NEWAYGO, OCEANA, OGEMAW, OSCEOLA, OSCODA, OTSEGO, OTTAWA,

PRESQUE ISLE, ROSCOMMON AND WEXFORD COUNTIES

AREA 4: ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC,  
HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE,  
ONTONAGON AND SCHOOLCRAFT COUNTIES

	Rates	Fringes
LABORER (AREA 1)		
GROUP 1.....	\$ 27.07	12.90
GROUP 2.....	\$ 27.20	12.90
GROUP 3.....	\$ 27.38	12.90
GROUP 4.....	\$ 27.46	12.90
GROUP 5.....	\$ 27.67	12.90
GROUP 6.....	\$ 27.97	12.90
LABORER (AREA 2)		
GROUP 1.....	\$ 24.02	12.85
GROUP 2.....	\$ 24.22	12.85
GROUP 3.....	\$ 24.46	12.85
GROUP 4.....	\$ 24.81	12.85
GROUP 5.....	\$ 24.68	12.85
GROUP 6.....	\$ 25.02	12.85
LABORER (AREA 3)		
GROUP 1.....	\$ 23.27	12.85
GROUP 2.....	\$ 23.48	12.85
GROUP 3.....	\$ 23.77	12.85
GROUP 4.....	\$ 24.21	12.85
GROUP 5.....	\$ 23.83	12.85
GROUP 6.....	\$ 24.26	12.85
LABORER (AREA 4)		
GROUP 1.....	\$ 23.32	12.85
GROUP 2.....	\$ 23.53	12.85
GROUP 3.....	\$ 23.82	12.85
GROUP 4.....	\$ 24.26	12.85
GROUP 5.....	\$ 23.88	12.85
GROUP 6.....	\$ 24.31	12.85

LABORER CLASSIFICATIONS

GROUP 1: Asphalt shoveler or loader; asphalt plant misc.; burlap person; yard person; dumper (wagon, truck, etc.); joint filling laborer; miscellaneous laborer; unskilled laborer; sprinkler laborer; form setting laborer; form stripper; pavement reinforcing; handling and placing (e.g., wire mesh, steel mats, dowel bars); mason's tender or bricklayer's tender on manholes; manhole builder; headwalls, etc.; waterproofing, (other than buildings) seal coating and slurry mix, shoring, underpinning; pressure grouting; bridge pin and hanger removal; material recycling laborer; horizontal paver laborer (brick, concrete, clay, stone and asphalt); ground stabilization and modification laborer; grouting; waterblasting; top person; railroad track and trestle laborer; carpenters' tender; guard rail builders' tender; earth retention barrier and wall and M.S.E. wall installer's tender; highway and median installer's tender (including sound, retaining, and crash barriers); fence erector's tender; asphalt raker tender; sign installer; remote control operated equipment.

GROUP 2: Mixer operator (less than 5 sacks); air or electric tool operator (jackhammer, etc.); spreader; boxperson (asphalt, stone, gravel); concrete paddler; power chain saw operator; paving batch truck dumper; tunnel mucker (highway

work only); concrete saw (under 40 h.p.) and dry pack machine; roto-mill grounds person.

GROUP 3: Tunnel miner (highway work only); finishers tenders; guard rail builders; highway and median barrier installer; earth retention barrier and wall and M.S.E. wall installer's (including sound, retaining and crash barriers); fence erector; bottom person; powder person; wagon drill and air track operator; diamond and core drills; grade checker; certified welders; curb and side rail setter's tender.

GROUP 4: Asphalt raker

GROUP 5: Pipe layers, oxy-gun

GROUP 6: Line-form setter for curb or pavement; asphalt screed checker/screw man on asphalt paving machines.

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LABO1076-005 04/01/2019

MICHIGAN STATEWIDE

	Rates	Fringes
LABORER (DISTRIBUTION WORK)		
Zone 1.....	\$ 21.47	12.90
Zone 2.....	\$ 19.77	12.90
Zone 3.....	\$ 17.95	12.90
Zone 4.....	\$ 17.32	12.90
Zone 5.....	\$ 17.30	12.90

DISTRIBUTION WORK - The construction, installation, treating and reconditioning of distribution pipelines transporting coal, oil, gas or other similar materials, vapors or liquids, including pipelines within private property boundaries, up to and including the meter settings on residential, commercial, industrial, institutional, private and public structures. All work covering pumping stations and tank farms not covered by the Building Trades Agreement. Other distribution lines with the exception of sewer, water and cable television are included.

Underground Duct Layer Pay: \$.40 per hour above the base pay rate.

Zone 1 - Macomb, Oakland and Wayne

Zone 2 - Monroe and Washtenaw

Zone 3 - Bay, Genesee, Lapeer, Midland, Saginaw, Sanilac, Shiawassee and St. Clair

Zone 4 - Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

Zone 5 - Remaining Counties in Michigan

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PAIN0022-002 07/01/2008

HILLSDALE, JACKSON AND LENAWEE COUNTIES; LIVINGSTON COUNTY (east of the eastern city limits of Howell, not including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 25.06	14.75

FOOTNOTES: For all spray work and journeyman rigging for spray work, also blowing off, \$0.80 per hour additional (applies only to workers doing rigging for spray work on off the floor work. Does not include setting up or moving rigging on floor surfaces, nor does it apply to workers engaged in covering up or tending spray equipment. For all sandblasting and spray work performed on highway bridges, overpasses, tanks or steel, \$0.80 per hour additional. For all brushing, cleaning and other preparatory work (other than spraying or steeplejack work) at scaffold heights of fifty (50) feet from the ground or higher, \$0.50 per hour additional. For all preparatorial work and painting performed on open steel under forty (40) feet when no scaffolding is involved, \$0.50 per hour additional. For all swing stage work-window jacks and window belts-exterior and interior, \$0.50 per hour additional. For all spray work and sandblaster work to a scaffold height of forty (40) feet above the floor level, \$0.80 per hour additional. For all preparatorial work and painting on all highway bridges or overpasses up to forty (40) feet in height, \$0.50 per hour additional. For all steeplejack work performed where the elevation is forty (40) feet or more, \$1.25 per hour additional.

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 PAIN0312-001 06/01/2018

EXCLUDES: ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); INCLUDES: Barry, Berrien, Branch, Calhoun, Cass, Hillsdale, Kalamazoo, St. Joseph, Van Buren

	Rates	Fringes
PAINTER		
Brush and roller.....	\$ 23.74	13.35
Spray, Sandblast, Sign		
Painting.....	\$ 24.94	13.35

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 PAIN0845-003 05/10/2018

CLINTON COUNTY; EATON COUNTY (does not include the townships of Bellevue and Olivet); INGHAM COUNTY; IONIA COUNTY (east of Hwy. M 66); LIVINGSTON COUNTY (west of the eastern city limits of Howell, including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); AND SHIAWASSEE COUNTY (Townships of Bennington, Laingsbury and Perry):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

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 PAIN0845-015 05/10/2018

MUSKEGON COUNTY; NEWAYGO COUNTY (except the Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OCEANA COUNTY; OTTAWA COUNTY (except the townships of Allendale, Blendone, Chester,

Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

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PAIN0845-018 05/10/2018

ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); IONIA COUNTY (west of Hwy. M-66); KENT, MECOSTA AND MONTCALM COUNTIES; NEWAYGO COUNTY (Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OSCEOLA COUNTY (south of Hwy. #10); OTTAWA COUNTY (Townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

FOOTNOTES: Lead abatement work: \$1.00 per hour additional.

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PAIN1011-003 06/02/2019

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 25.76	13.33

FOOTNOTES: High pay (bridges, overpasses, watertower): 30 to 80 ft.: \$.65 per hour additional. 80 ft. and over: \$1.30 per hour additional.

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PAIN1474-002 06/01/2010

HURON COUNTY; LAPEER COUNTY (east of Hwy. M-53); ST. CLAIR, SANILAC AND TUSCOLA COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 23.79	12.02

FOOTNOTES: Lead abatement work: \$1.00 per hour additional. Work with any hazardous material: \$1.00 per hour additional. Sandblasting, steam cleaning and acid cleaning: \$1.00 per hour additional. Ladder work at or above 40 ft., scaffold work at or above 40 ft., swing stage, boatswain chair, window jacks and all work performed over a falling height of 40 ft.: \$1.00 per hour additional. Spray gun work, pick pullers and those handling needles, blowing off by air pressure, and any person rigging (setting up and moving off the ground): \$1.00 per hour additional. Steeplejack, tanks, gas holders, stacks, flag poles, radio towers and beacons, power line towers, bridges, etc.: \$1.00 per hour additional, paid from the ground up.

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PAIN1803-003 06/01/2019

ALCONA, ALPENA, ANTRIM, ARENAC, BAY, BENZIE, CHARLEVOIX,  
CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE,  
GRATIOT, IOSCO, ISABELLA, KALKASKA, LAKE, LEELANAU, MANISTEE,  
MASON, MIDLAND, MISSAUKEE, MONTMORENCY AND OGEMAW COUNTIES;  
OSCEOLA COUNTY (north of Hwy. #10); OSCODA, OTSEGO, PRESQUE  
ISLE, ROSCOMMON, SAGINAW AND WEXFORD COUNTIES:

	Rates	Fringes
PAINTER		
Work performed on water, bridges over water or moving traffic, radio and powerline towers, elevated tanks, steeples, smoke stacks over 40 ft. of falling heights, recovery of lead-based paints and any work associated with industrial plants, except maintenance of industrial plants.....	\$ 25.39	14.68
All other work, including maintenance of industrial plant.....	\$ 25.39	14.68

FOOTNOTES: Spray painting, sandblasting, blowdown associated  
with spraying and blasting, water blasting and work  
involving a swing stage, boatswain chair or spider: \$1.00  
per hour additional. All work performed inside tanks,  
vessels, tank trailers, railroad cars, sewers, smoke  
stacks, boilers or other spaces having limited egress not  
including buildings, opentop tanks, pits, etc.: \$1.25 per  
hour additional.

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PLAS0514-001 06/01/2018

ZONE 1: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, SAGINAW,  
WASHTENAW AND WAYNE COUNTIES

ZONE 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,  
BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,  
CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,  
DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE,  
GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO,  
IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW,  
LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE,  
MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE,  
MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW,  
ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE,  
ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST.  
JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
ZONE 1.....	\$ 31.47	13.81
ZONE 2.....	\$ 29.97	13.81

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PLUM0190-003 05/01/2015

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY,  
BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,  
CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,  
DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND  
TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA,  
IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT,  
KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE,  
MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA,  
MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE,  
MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA,  
OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST.  
CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA,  
VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

	Rates	Fringes
Plumber/Pipefitter - gas		
distribution pipeline:		
Welding in conjunction		
with gas distribution		
pipeline work.....	\$ 33.03	20.19
All other work:.....	\$ 24.19	12.28

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TEAM0007-004 06/01/2019

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,  
BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,  
CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,  
DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE,  
GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO,  
IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW,  
LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE,  
MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE,  
MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW,  
ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE,  
ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST.  
CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW  
AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
AREA 1		
Euclids, double bottoms		
and lowboys.....	\$ 27.30	.50 + a+b
Trucks under 8 cu. yds.....	\$ 27.05	.50 + a+b
Trucks, 8 cu. yds. and		
over.....	\$ 27.15	.50 + a+b
AREA 2		
Euclids, double bottoms		
and lowboys.....	\$ 24.895	.50 + a+b
Euclids, double bottoms		
and lowboys.....	\$ 27.40	.50 + a+b
Trucks under 8 cu. yds.....	\$ 27.15	.50 + a+b
Trucks, 8 cu. yds. and		
over.....	\$ 27.25	.50 + a+b



Footnote:

- a. \$455.10 per week
- b. \$68.70 daily

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TEAM0247-004 04/01/2013

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, SAGINAW, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
Sign Installer		
AREA 1		
GROUP 1.....	\$ 21.78	11.83
GROUP 2.....	\$ 25.27	11.8375
AREA 2		
GROUP 1.....	\$ 22.03	11.83
GROUP 2.....	\$ 25.02	11.8375

FOOTNOTE:

- a. \$132.70 per week, plus \$17.80 per day.

SIGN INSTALLER CLASSIFICATIONS:

GROUP 1: performs all necessary labor and uses all tools required to construct and set concrete forms required in the installation of highway and street signs

GROUP 2: performs all miscellaneous labor, uses all hand and power tools, and operates all other equipment, mobile or otherwise, required for the installation of highway and street signs

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TEAM0247-010 04/01/2018

AREA 1: LAPEER AND SHIAWASSEE COUNTIES

AREA 2: GENESEE, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER (Underground construction)		
AREA 1		
GROUP 1.....	\$ 23.82	19.04
GROUP 2.....	\$ 23.91	19.04

GROUP 3.....	\$ 24.12	19.04
AREA 2		
GROUP 1.....	\$ 24.12	19.04
GROUP 2.....	\$ 24.26	19.04
GROUP 3.....	\$ 24.45	19.04

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

SCOPE OF WORK: Excavation, site preparation, land balancing, grading, sewers, utilities and improvements; also including but not limited to, tunnels, underground piping, retention, oxidation, flocculation facilities, conduits, general excavation and steel sheeting for underground construction. Underground construction work shall not include any structural modifications, alterations, additions and repairs to buildings or highway work, including roads, streets, bridge construction and parking lots or steel erection.

#### TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver on all trucks (EXCEPT dump trucks of 8 cubic yards capacity or over, pole trailers, semis, low boys, Euclid, double bottom and fuel trucks)

GROUP 2: Truck driver on dump trucks of 8 cubic yards capacity or over, pole trailers, semis and fuel trucks

GROUP 3: Truck driver on low boy, Euclid and double bottom

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SUMI2002-001 05/01/2002

	Rates	Fringes
Flag Person.....	\$ 10.10	0.00

LINE PROTECTOR (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE)....	\$ 20.30	12.90
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LINE PROTECTOR (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE).....	\$ 18.02	12.90
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Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES) Group 1.....	\$ 27.07	12.90
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Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE) Group 2.....	\$ 24.36	12.90
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Pavement Marking Machine (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES)		
--	--	--

Group 1.....\$ 24.02 12.90

Pavement Marking Machine  
(ZONE 2: STATEWIDE (EXCLUDING  
GENESEE, MACOMB, MONROE,  
OAKLAND, WASHTENAW AND WAYNE)

Group 2.....\$ 21.62 12.90

WORK CLASSIFICATIONS:

PAVEMENT MARKER GROUP 1: Drives or operates a truck mounted  
striper, grinder, blaster, groover, or thermoplastic melter  
for the placement or removal of temporary or permanent  
pavement markings or markers.

PAVEMENT MARKER GROUP 2: Performs all functions involved for  
the placement or removal of temporary or permanent pavement  
markings or markers not covered by the classification of  
Pavement Marker Group 1 or Line Protector.

LINE PROTECTOR: Performs all operations for the protection or  
removal of temporary or permanent pavement markings or  
markers in a moving convoy operation not performed by the  
classification of Pavement Marker Group 1. A moving convoy  
operation is comprised of only Pavement Markers Group 1 and  
Line Protectors.

-----  
WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

=====  
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

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.

-----

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"

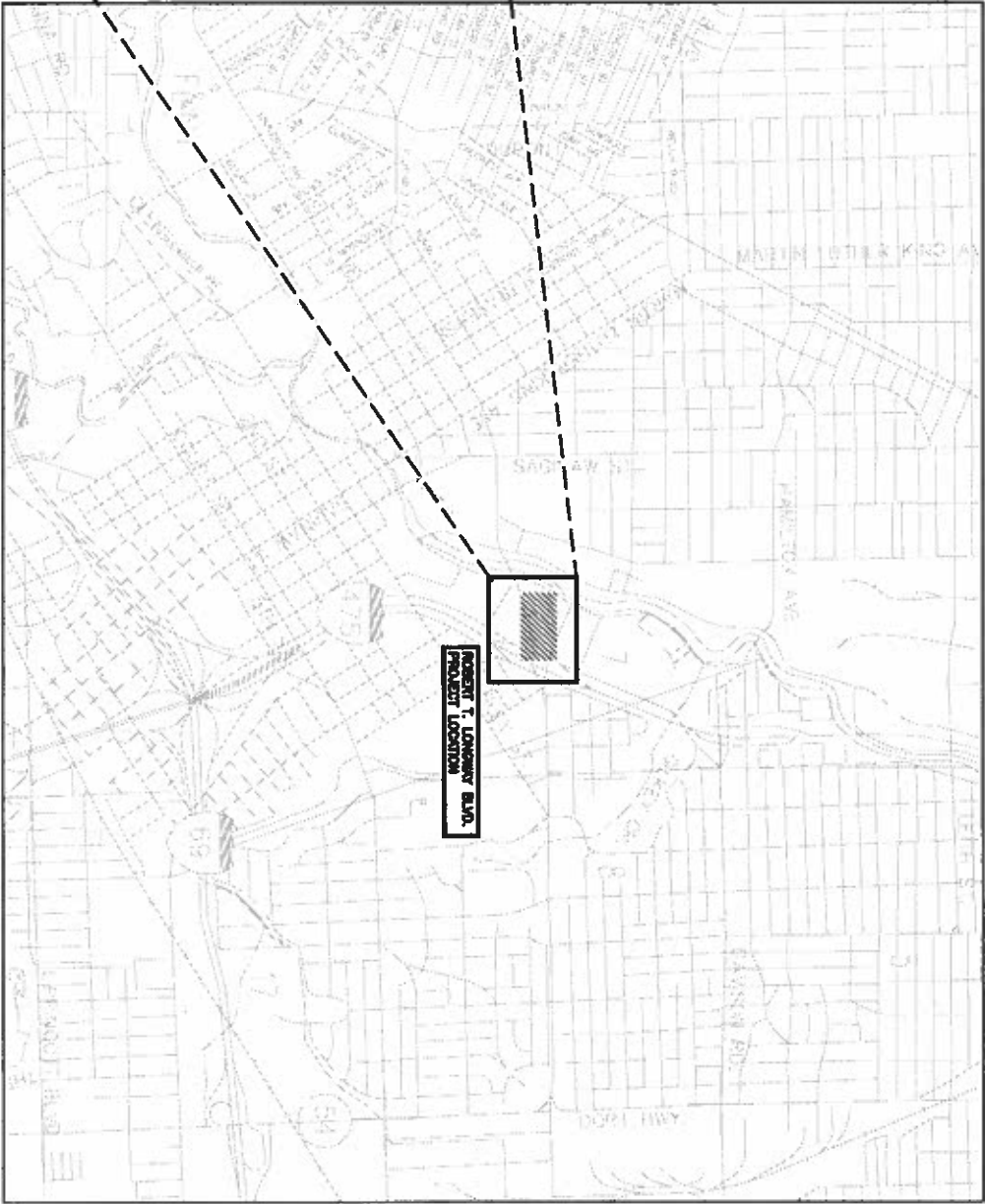
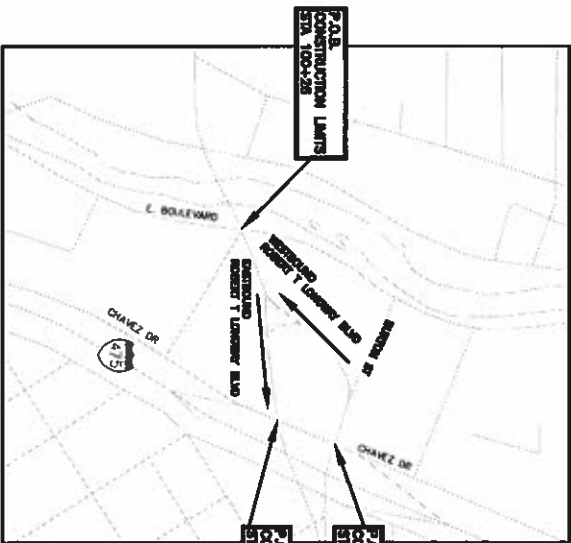
Scoring Sheet for Robert T. Longway Boulevard Construction Engineering Services

Scoring for C.E. Robert T. Longway Boulevard							
450 Max Points for Evaluation							
Category's	Maximum Points						
<b>Sectionn B1.</b> Firms History. Stated full name and address of their organization, the office location where work will be performed. Included the history of the firm and types of engineering services provided. Identified the technical details which makes their firm uniquely qualified for this project.	40						
<b>Section B2. Organization Chart.</b> Included an organization chart with the names of the key personnel by skill and qualifications that will be employed on this project design. Indicate each person's MDOT Certifications. Show where the key personnel will be physically located during the time they are engaged in this project design.	50						
<b>Section B3. Professional Qualifications.</b> For each of the personnel Identified in Section B2 and any other individuals they consider key to the success of this project. Engineering Firm has provided resumes (2-page maximum) including construction project engineer, inspector(s), MDOT office manager, surveyor(s), soil density tester or firm, HMA and concrete technician, website manager, and any sub-consultant(s).	60						
<b>Section C1. Similar Projects.</b> They provided a minimum of 5 projects ( a minimum of 3 Projects that relate to just Roads and at least 2 Projects that are both Road and Water Main) that showcase similar experience to the project being proposed. The related projects must have been completed in the last 10 years. The projects should show your Firm's proven ability in Construction Engineering and inspection while implementing similar federally funded road projects and water mains projects for cities and counties.	50						
<b>Section C1.a.</b> Give the size and the scope of the construction projects	10						
<b>Section C1.b-d.</b> Construction start dates, proposed start dates and actual completion dates for each project. Gave reasons for differences.	15						
<b>Section C1. e-f.</b> Bid construction cost and actual finished cost. Gave reason for differences.	15						
<b>Section C1.g</b> Name of Contractor on each project.	5						
<b>Section C1.k.</b> Key personnel for each project and their roles.	25						
<b>Section C1. l.</b> Bold type or underline key personnel from the 5 projects that will be on our project.	25						
<b>Section C2. References.</b> Provided a list of five (5) references for similar projects including their contact name, agency, telephone number and email address.	10						
<b>Section C3.</b> Vision for website and email system for this project.	30						
<b>Section C4.</b> Examples of of websites and email system that they have used on past projects and name of projects.	20						
<b>Section C5.</b> Name of person or persons responsible for website and email system.	10						
<b>Section D1. Challenges.</b> What they saw as the biggest challenges for completing the construction engineering for this Project? How their Company will overcome these challenges?	15						
<b>Section D2.</b> items or ideas that may be missing from Contractors Bid Package or from this RFP that may save cost	20						
<b>Section E1. Pertinent Information.</b> What the firm believes is pertinent to the success of the project that may not have been requested or identified.	10						
<b>Section E2.</b> How will you ensure that the Contractor gives the City of Flint the best quality and service while contenting cost overruns.	10						
<b>Section F1.</b> All the instructions for the proposal have been followed, completed and Certified.	30						
<b>Total Evaluation Points</b>	450						

Best Qualified Construction Engineer Firm

SHEET INDEX	
SHEET NUMBER	GENERAL SHEETS
1	COVER
2	NOTES AND LEGEND
3	DETAILS
4	TYPICAL SECTIONS 1
5	TYPICAL SECTIONS 2
6	TYPICAL SECTIONS 3
7	TYPICAL SECTIONS 4
8	REMOVAL & CONSTRUCTION 1
9	REMOVAL & CONSTRUCTION 2
10	REMOVAL & CONSTRUCTION 3
11	REMOVAL & CONSTRUCTION 4
12	REMOVAL & CONSTRUCTION 5
13	REMOVAL & CONSTRUCTION 6
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15	WESTBOUND PROFILE 2
16	MAINTENANCE OF TRAFFIC 1
17	MAINTENANCE OF TRAFFIC 2
18	MAINTENANCE OF TRAFFIC 3
19	MAINTENANCE OF TRAFFIC 4
20	WATER DISTRIBUTION DETAILS
21	WATER MAIN PLAN AND PROFILE
22	PAVEMENT MARKING AND SIGNING 1
23	PAVEMENT MARKING AND SIGNING 2
24	PAVEMENT MARKING AND SIGNING 3
25	PAVEMENT MARKING AND SIGNING 4
26	PAVEMENT MARKING AND SIGNING 5
27	PAVEMENT MARKING AND SIGNING 6
28	DETAILED GRADING
29	SOIL BORINGS

THE CITY OF FLINT  
IN COOPERATION WITH THE  
MICHIGAN DEPARTMENT OF TRANSPORTATION  
AND FEDERAL HIGHWAY ADMINISTRATION  
PLAN AND PROFILE OF PROPOSED  
ROBERT T. LONGWAY BOULEVARD  
E. BOULEVARD DRIVE AND CHAVEZ DRIVE  
CITY OF FLINT, GENESEE COUNTY, MICHIGAN  
JOB NUMBER: 207637 CONTROL SECTION: NH25000

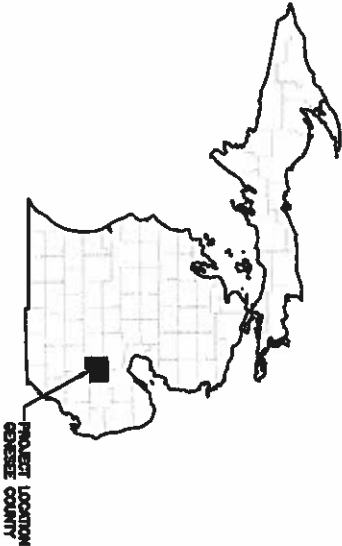


UTILITIES & MUNICIPALITIES

TELEPHONE ALTEC ENGINEERING 54 NORTH HILL STREET, P.O. BOX 32 PONTIAC, MICHIGAN 48342 CONTACT: JEFF HEATH PHONE: 313.263.9939	CITY OF FLINT 1101 SOUTH SAGINAW STREET TRANSPORTATION (SOUTH) BUILDING FLINT, MI 48902 CONTACT: JOHN DALL, DIRECTOR PHONE: 810.786.7185
TELECOM CONSUMERS ENERGY 5310 EAST COURT STREET FLINT, MI 48902 CONTACT: ZACK BOLLINGER PHONE: 517.742.4020	CITY OF FLINT 3310 EAST COURT STREET TRANSPORTATION (SOUTH) BUILDING FLINT, MI 48902 CONTACT: JOHN DALL, DIRECTOR PHONE: 810.786.7185
ELECTRIC CONSUMERS ENERGY - ELECTRIC 3201 EAST COURT STREET FLINT, MICHIGAN 48901 CONTACT: TRACY HANNA PHONE: 810.780.3506	CITY OF FLINT 1101 SOUTH SAGINAW STREET TRANSPORTATION (SOUTH) BUILDING FLINT, MI 48902 CONTACT: ROD MAGAWA PHONE: 810.786.7155
GAS CONSUMERS ENERGY 3201 EAST COURT STREET FLINT, MICHIGAN 48901 CONTACT: WATT COX PHONE: 810.780.3488	CITY OF FLINT 1101 SOUTH SAGINAW STREET TRANSPORTATION (SOUTH) BUILDING FLINT, MI 48902 CONTACT: MARK ADAMS PHONE: 810.786.7155

LOCATION MAP  
1"=1/4 MILE

THE DESIGN OF THIS ROAD IS BASED ON FEDERAL 30' CROWNED AND ABOUT ROAD DESIGN MANUAL NON-FREIGHTWAY AASHTO. THE CONSTRUCTION OF THIS ROAD SHALL BE PER THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 EDITION, AS AMENDED AND CITY SPECIFICATIONS ISSUED BY THE PROJECT MUNICIPALITY. THE DESIGN OF THIS ROAD SHALL BE PER THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 EDITION, AS AMENDED AND THE DESIGN GUIDE FOR THE DEVELOPMENT OF BRIDGE FACILITIES, 2012 EDITION.



TRAFFIC DATA	
ROBERT T. LONGWAY	
POSTED SPEED	30 MPH
DESIGN SPEED (2020)	30 MPH
AVERAGE DAILY TRAFFIC (2020)	1,5787
% COMMERCIAL VEHICLES (2020)	10
GROWTH FACTOR (2040)	0.5
AVERAGE DAILY TRAFFIC (2040)	13,968
% COMMERCIAL VEHICLES (2040)	10

JOB NO. 207637 SHEET 1

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ARUNA JO ESQUE, P.E., REG. NO. 6201050708



STATIONING AND ELEVATIONS GIVEN HEREIN ARE FOR THE 1/2" = 100' SCALE. SEE PLAN FOR THE LOCATION OF THE STATIONING AND ELEVATIONS. THE STATIONING IS GIVEN IN FEET AND INCHES. THE ELEVATIONS ARE GIVEN IN FEET AND INCHES.

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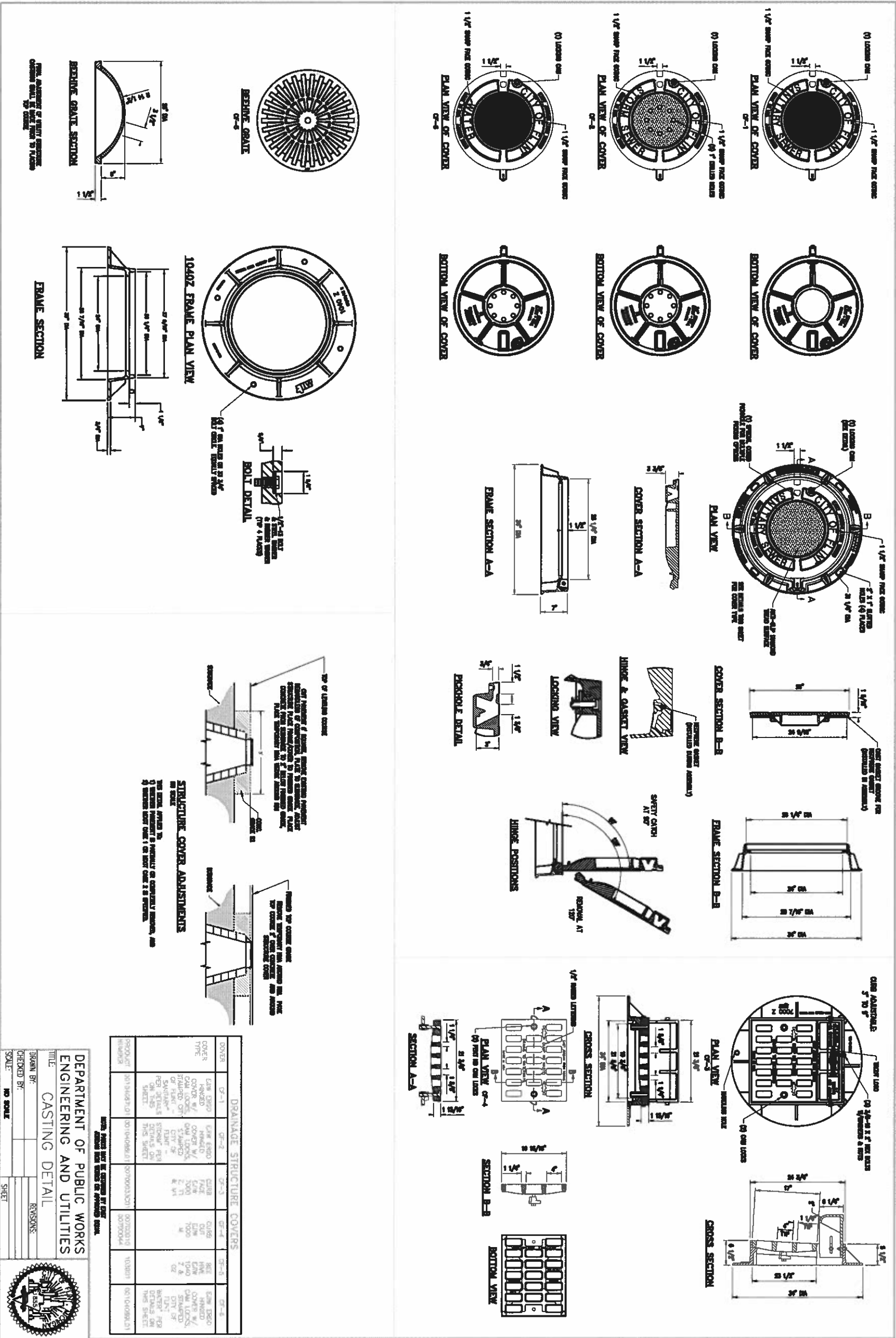
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children in the treatment group being treated with the active drug, leading to overall decreased

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NO	DATE	DESCRIPTION	BY





**CITY OF FLINT**  
1101 SAGINAW STREET #105  
FLINT, MICHIGAN 48502  
ROBERT T LONGWAY RESURFACING PROJECT  
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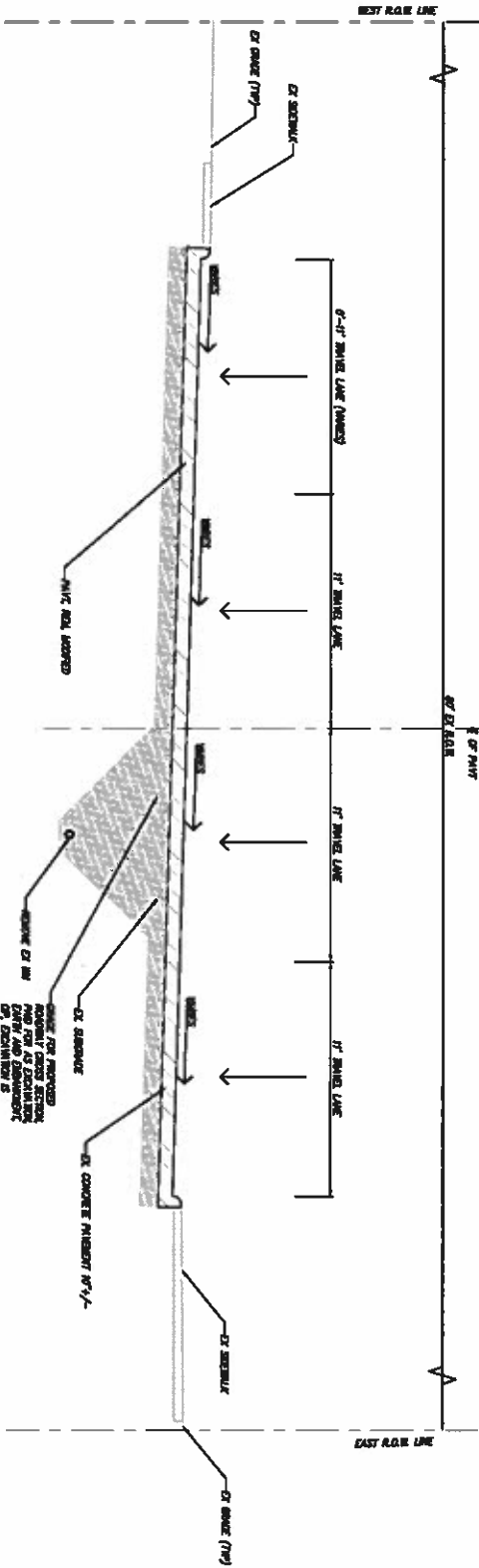
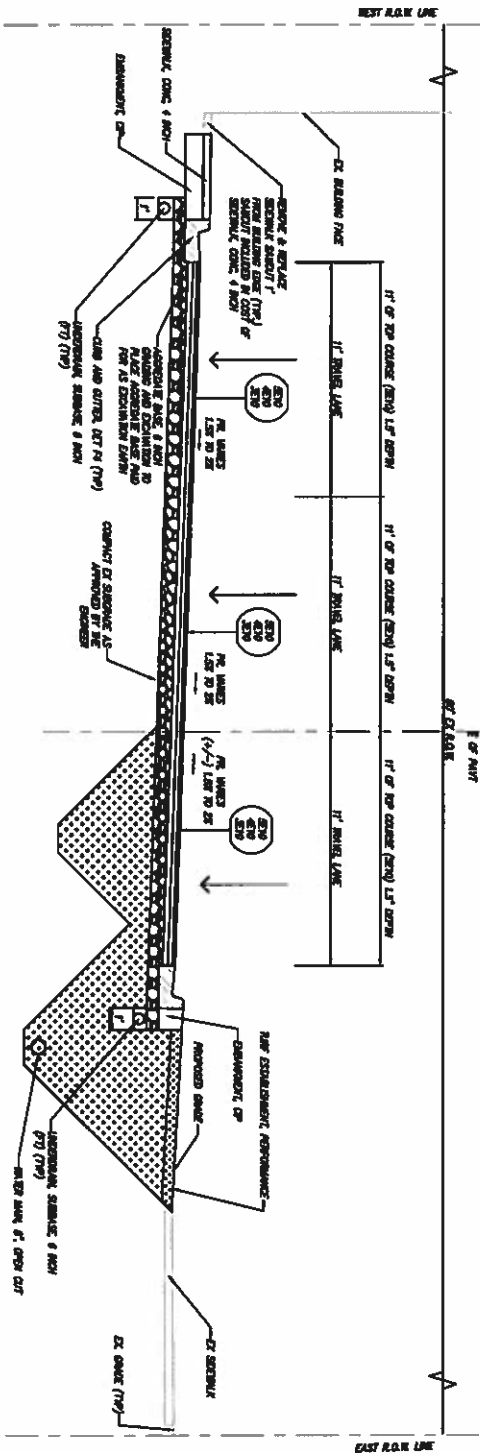
DATE: 02/18/2020  
SHEET: 3





NO.	DATE	DESCRIPTION	BY
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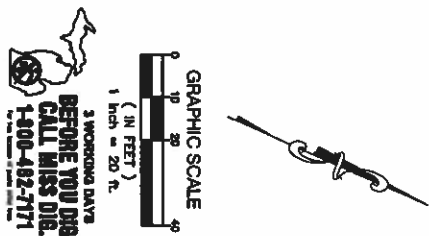
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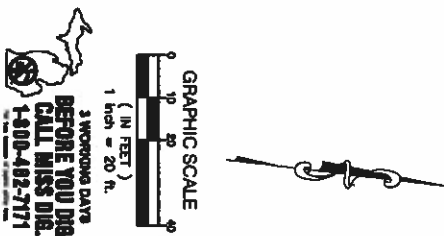
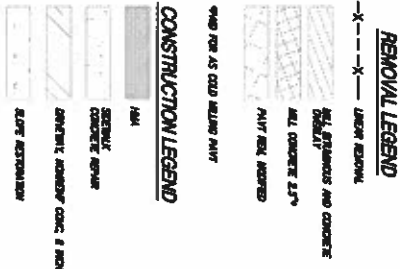
QUANTITIES THIS SHEET	
COLD MILLING PAVT	1998 STD
AGGREGATE BASE, 8 INCH	161 STD
CURB AND GUTTER, CONC. DETAIL F4	180 FT
CURB AND GUTTER, REM	150 FT
DETECTABLE WARNING SURFACE MODIFIED DR. STRUCTURE, AD. CASE 1, MODIFIED	10 FT
DRIVEWAY OPENING, CONC. DET. M	1 EA
DRIVEWAY, NONREM. CONC. 8 INCH	49 FT
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	31 STD
HMA 4210	4 EA
HMA 5210	298 STD
PAVT, REM, MODIFIED	239 TON
SIDEWALK PAVT OPENING, CONC	386 STD
SIDEWALK PAVT, CONC. 6 INCH	25 SFT
TUBE 63, ALUMINUM, PERFORMANCE	160 SFT
	138 STD



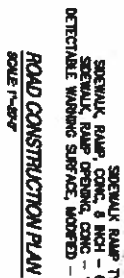


QUANTITIES THIS SHEET	
COLD MILLING PAINT	1863 STD
CURB AND GUTTER, CONC., DET 4	200 FT
CURB AND GUTTER, REM	200 FT
DR STRUCTURE, ADJ. CASE 1, MODIFIED	1 EA
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	2 EA
HMA SE10	153 TON

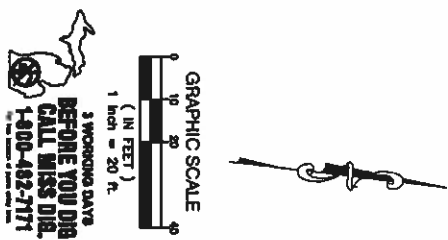
**THE COST OF REMOVALS IS INCLUDED IN THE COST OF ANY NEW WORKS**



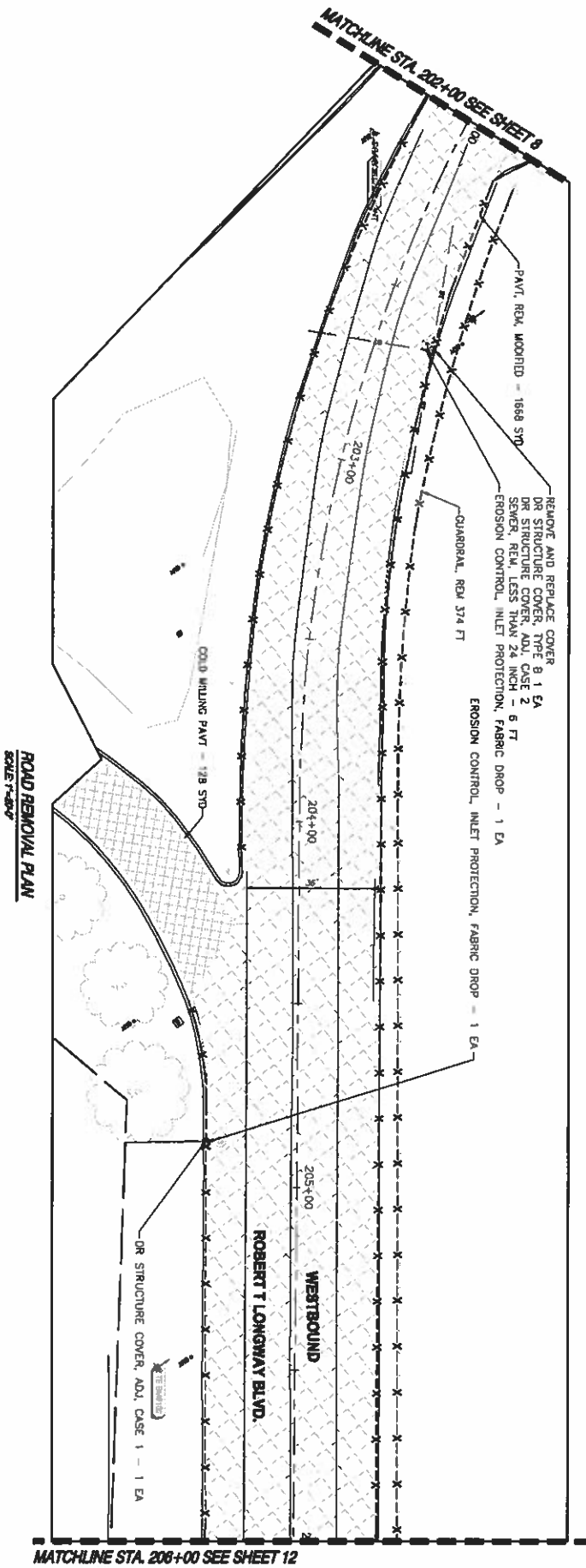
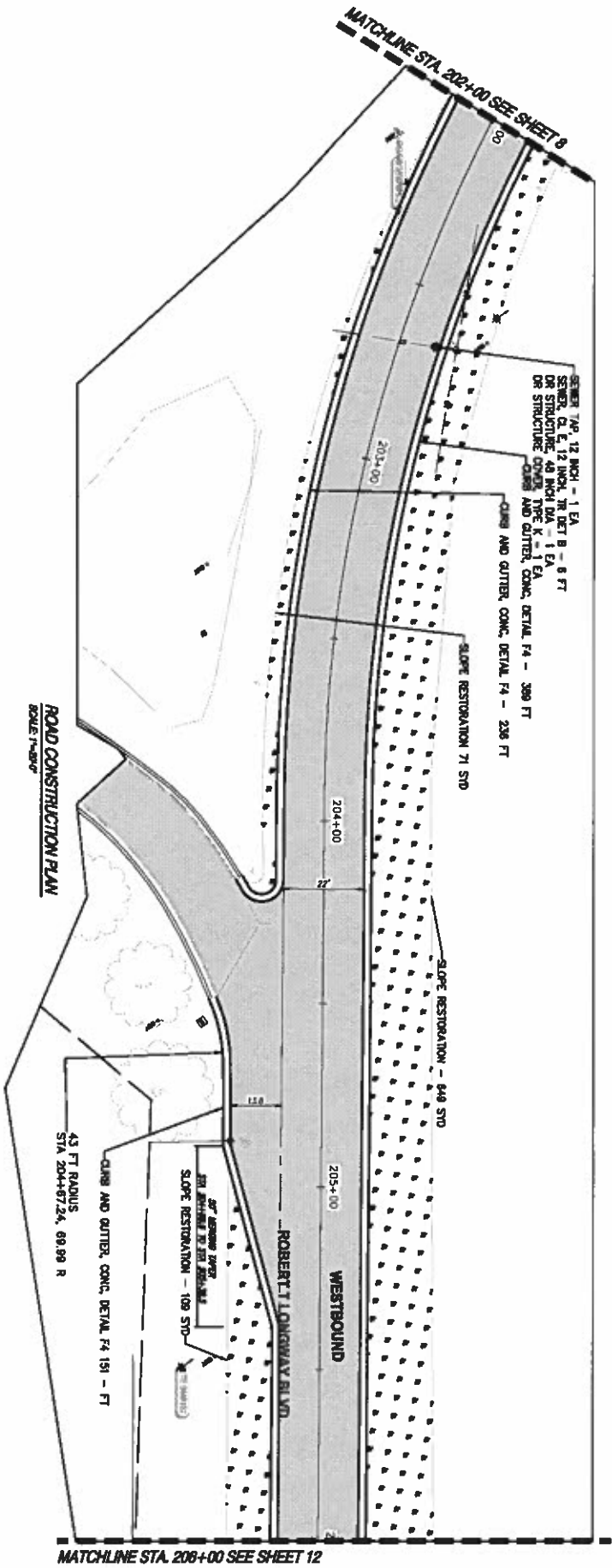




QUANTITIES THIS SHEET		
COLD MILLING PAVT	1573	SYD
CURB AND GUTTER, CONC, DET 4	50	FT
CURB AND GUTTER, REM	50	FT
DETECTABLE WARNING SURFACE MODIFIED	15	FT
HMA SET/O	174	TON
PAVT, REM, MODIFIED	22	SYD
SIDEWALK RAMP OPENING, CONC	31	SFT
SIDEWALK RAMP, CONC, 6 INCH	195	SFT

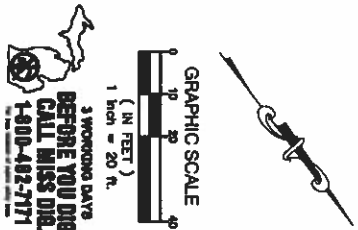






QUANTITIES THIS SHEET	
COLD MILLING PAVT	128 STD
AGGREGATE BASE, 8 INCH	1104 STD
CURB AND GUTTER, CONC. DET 4	800 FT
CURB AND GUTTER, CONC. DETAIL F4	775 FT
OR STRUCTURE COVER, TYPE B	1 EA
OR STRUCTURE COVER, TYPE K	1 EA
OR STRUCTURE, 48 INCH DIA	1 EA
OR STRUCTURE, ADJ. CASE 1, MODIFIED	1 EA
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	1 EA
GUARDRAIL, REM	2 EA
HMA 4E10	374 FT
HMA 5E10	170 FT
PAVT. REM. MODIFIED	136 TON
SEWER TAP, 12 INCH	1 STD
SEWER, CL E, 12 INCH, TR DET B	1 EA
SEWER, REM. LESS THAN 24 INCH	6 FT
TURB ESTABLISHMENT, PERFORMANCE	829 STD

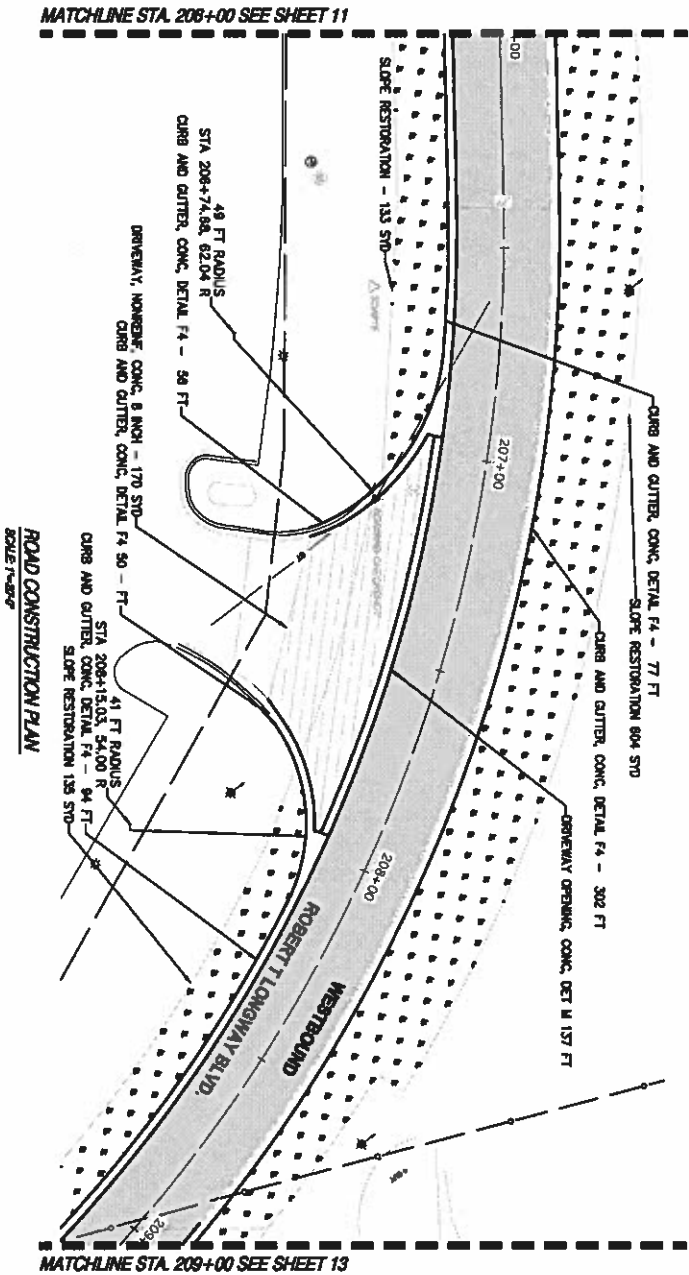
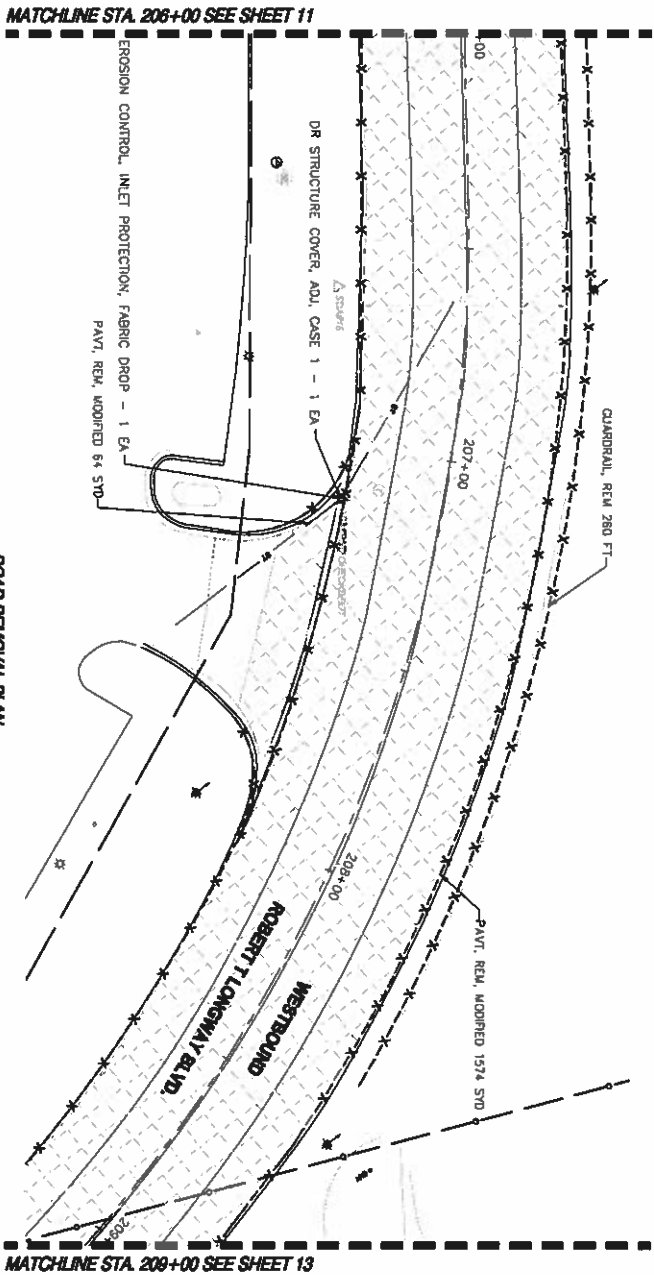
REMOVAL LEGEND	
PAVT. REM. MODIFIED	1668 STD
OR STRUCTURE COVER, ADJ. CASE 2	6 FT
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	1 EA
COLD MILLING PAVT	128 STD
AGGREGATE BASE, 8 INCH	1104 STD
CURB AND GUTTER, CONC. DET 4	800 FT
CURB AND GUTTER, CONC. DETAIL F4	775 FT
OR STRUCTURE COVER, TYPE B	1 EA
OR STRUCTURE COVER, TYPE K	1 EA
OR STRUCTURE, 48 INCH DIA	1 EA
OR STRUCTURE, ADJ. CASE 1, MODIFIED	1 EA
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	1 EA
GUARDRAIL, REM	2 EA
HMA 4E10	374 FT
HMA 5E10	170 FT
PAVT. REM. MODIFIED	136 TON
SEWER TAP, 12 INCH	1 STD
SEWER, CL E, 12 INCH, TR DET B	1 EA
SEWER, REM. LESS THAN 24 INCH	6 FT
TURB ESTABLISHMENT, PERFORMANCE	829 STD



BEFORE YOU DRG  
CALL MISS DRG  
1-800-482-7171

PROJECT NO. <b>11</b>	JOB NO. <b>207637</b>	ISSUED FOR DATE BY	<b>CITY OF FLINT</b> 1101 SAGINAW STREET #105 FLINT, MICHIGAN 48502 ROBERT T LONGWAY RESURFACING PROJECT REMOVAL & CONSTRUCTION 4	<b>SPALDING DeDECKER</b> Engineering and Surveying Excellence Since 1954 905 South Blvd. East, Rochester Hills, MI 48307 Phone: (248) 844-5400   Fax: (248) 844-5404 www.sds-eng.com	NO. DATE DESCRIPTION BY	

© Spalding DeDecker ROBERT T. LONGWAY RESURFACING (E BOULEVARD DR TO CHAVEZ DR)



QUANTITIES THIS SHEET		
AGGREGATE BASE, 8 INCH	1678	SID
CURB AND GUTTER, CONC. DETAIL F4	899	FT
CURB AND GUTTER, REM	700	FT
DETECTABLE WARNING SURFACE MODIFIED	20	FT
DR STRUCTURE, ADJ. CASE 1, MODIFIED	2	EA
DRIVEWAY OPENING, CONC. DET M	97	FT
DRIVEWAY, NONREIN. CONC. DET M	59	SID
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	1	EA
HMA 4E10	231	TON
HMA SE10	185	TON
PAVT. REM. MODIFIED	2561	SID
SIDEWALK RAMP OPENING, CONC	32	FT
SIDEWALK RAMP, CONC. 6 INCH	373	SFT
SIDEWALK, CONC. 6 INCH	360	SFT
TURE ESTABLISHMENT, PERFORMANCE	608	SID

**REMOVAL LEGEND**

- LINEAR EXCAVATION
- AS EXISTENCE AND CONCRETE
- PAVT. REM. MODIFIED
- PAVT. REM. MODIFIED
- PAVT. REM. MODIFIED
- PAVT. REM. MODIFIED

**CONSTRUCTION LEGEND**

- HMA
- SEEDING
- CONCRETE REPAIR
- CONCRETE NONREIN. CONC. 8 INCH
- SLOPE RESTORATION

**GRAPHIC SCALE**

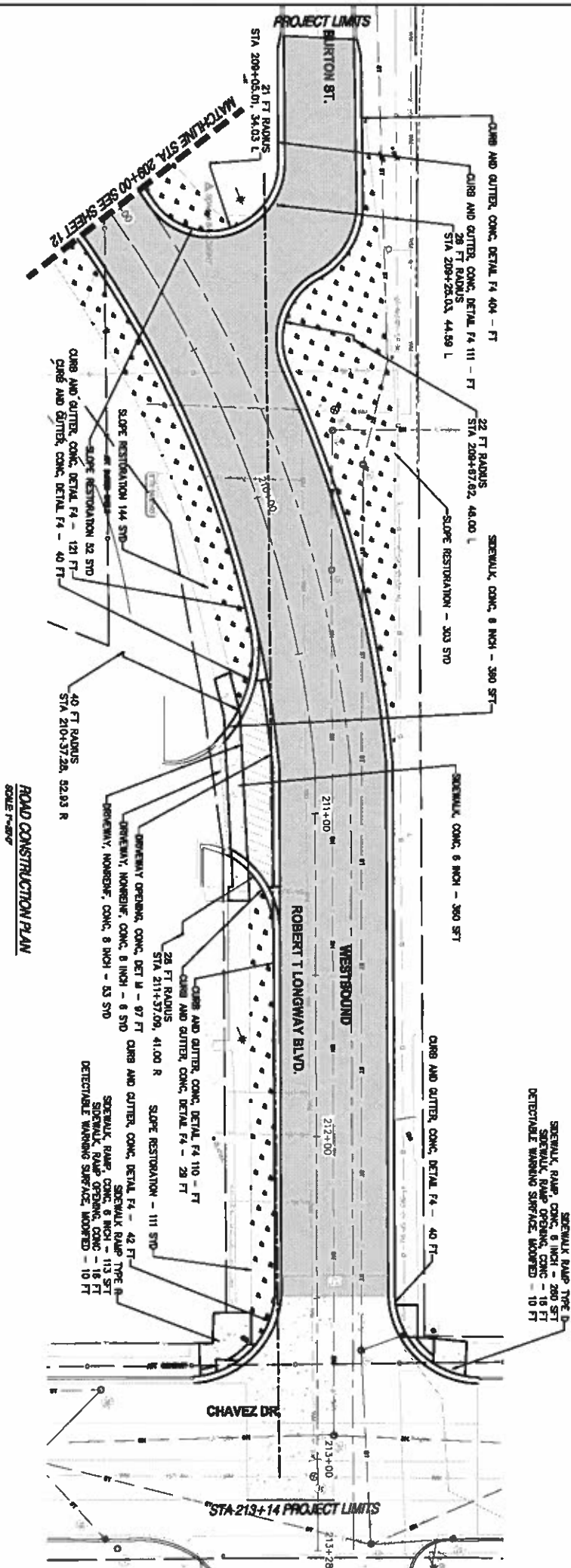
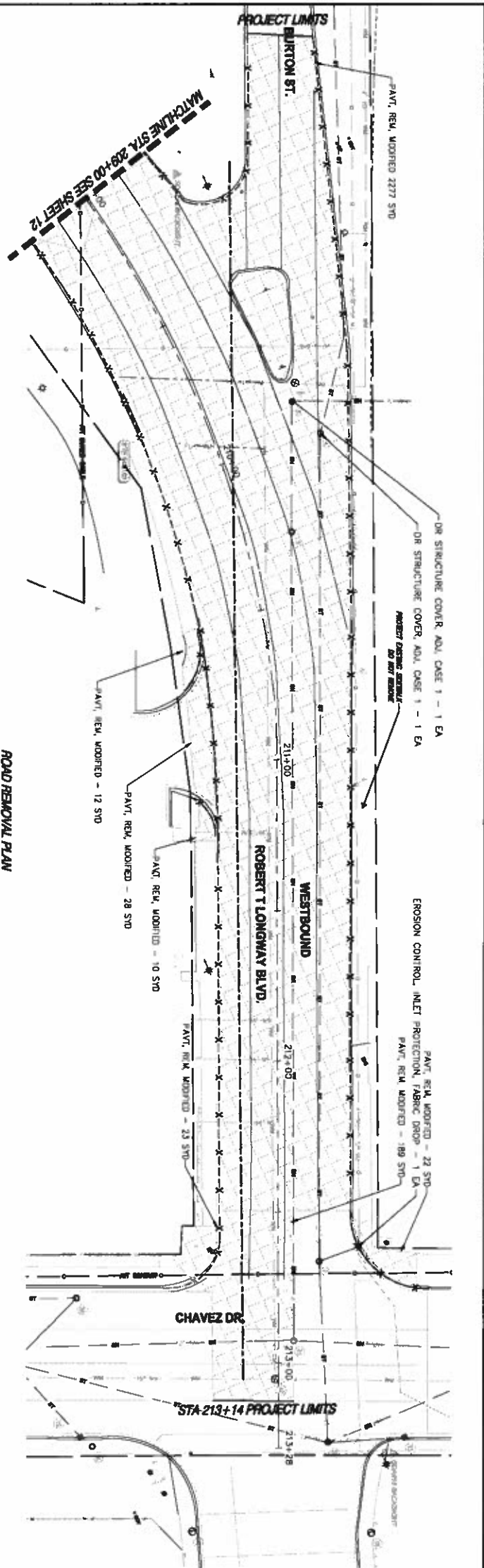
1" = 20 FT

(IN FEET)

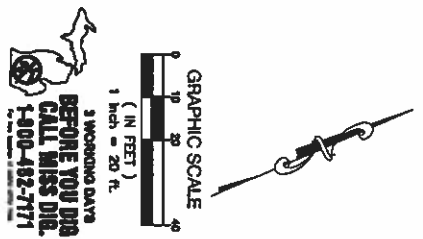
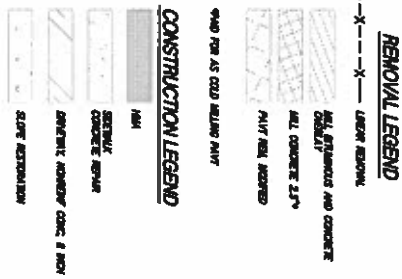
1" = 20 FT

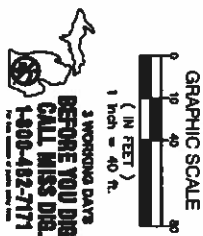
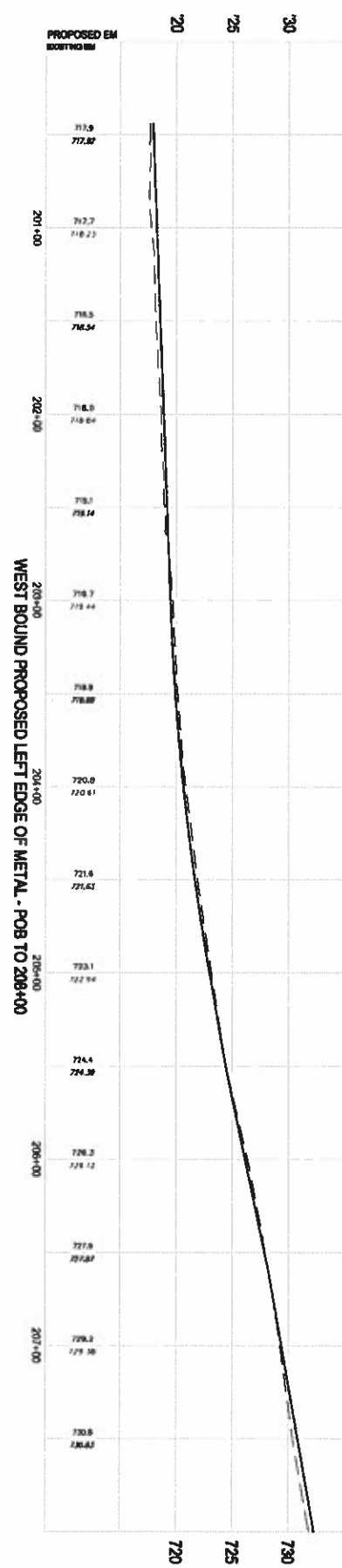
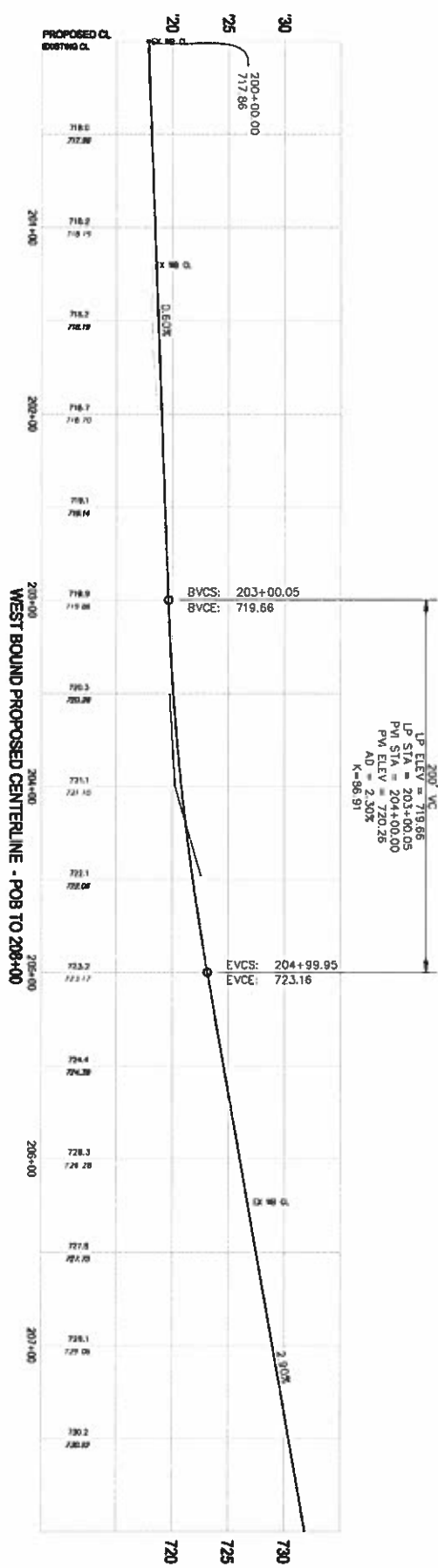
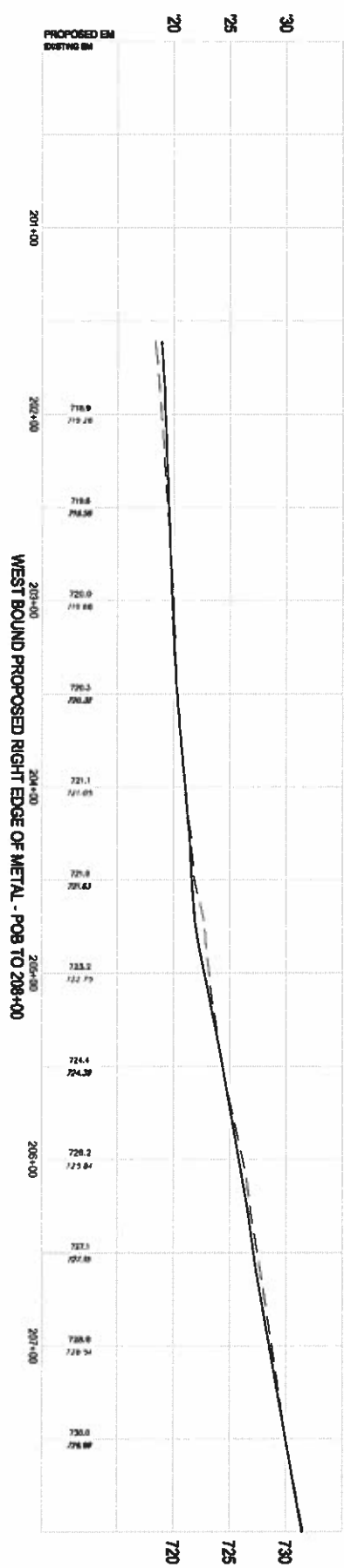
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PROJECT NO. <b>207637</b>	ISSUED FOR DATE BY	<b>CITY OF FLINT</b> 1101 SAGINAW STREET #105 FLINT, MICHIGAN 48502 ROBERT T LONGWAY RESURFACING PROJECT REMOVAL & CONSTRUCTION 5	<b>SPALDING DeDECKER</b> Engineering and Surveying Excellence Since 1954 905 South Blvd. East, Rochester Hills, MI 48307 Phone: (248) 844-5400   Fax: (248) 844-5404 www.sde-eng.com	NO. DATE DESCRIPTION BY
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QUANTITIES THIS SHEET			
AGGREGATE BASE, 8 INCH	1678	STD	
CURB AND GUTTER, CONC, DETAIL F4	899	FT	
CURB AND GUTTER, REM	700	FT	
DETECTABLE WARNING SURFACE, MODIFIED	20	FT	
DR STRUCTURE, ADJ, CASE 1, MODIFIED	2	EA	
DREWEWAY OPENING, CONC, DET M	97	FT	
DREWEWAY, NONREM, CONC, 8 INCH	59	STD	
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	1	EA	
HMA DETIO	231	TON	
HMA DETIO	185	TON	
PAVT, REM, MODIFIED	2561	STD	
SIDEWALK RAMP OPENING, CONC	32	FT	
SIDEWALK RAMP, CONC, 6 INCH	373	5FT	
SIDEWALK, CONC, 6 INCH	360	5FT	
TURF ESTABLISHMENT, PERFORMANCE	608	STD	



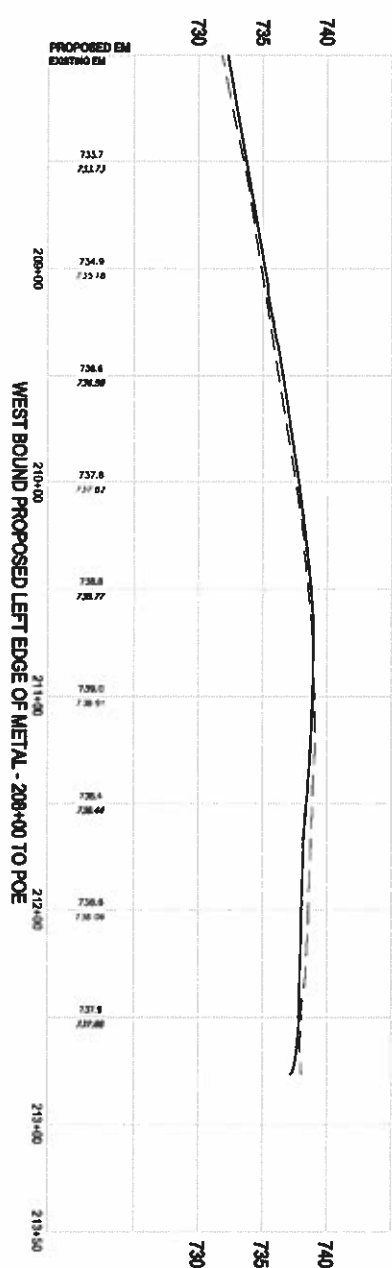
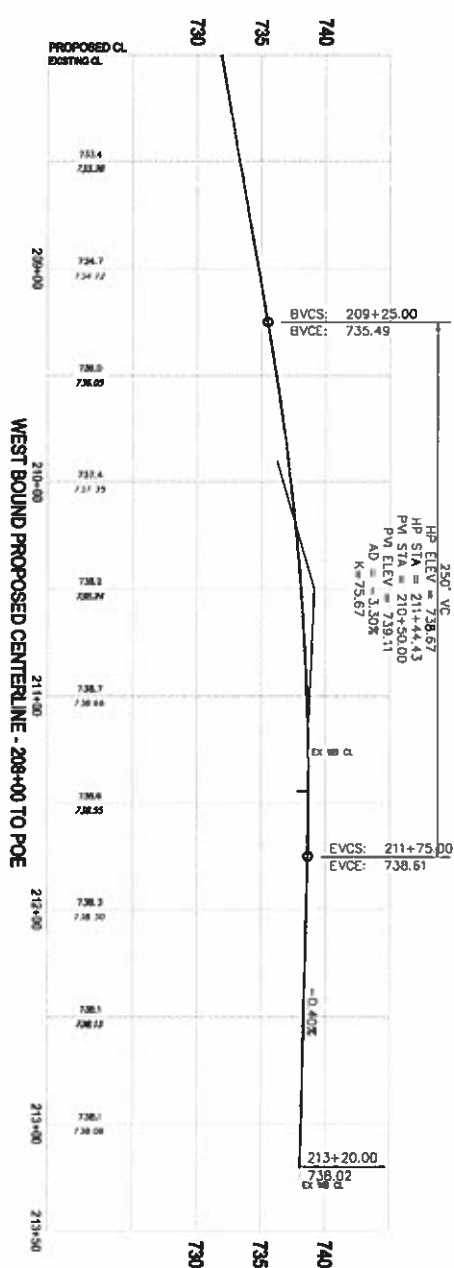
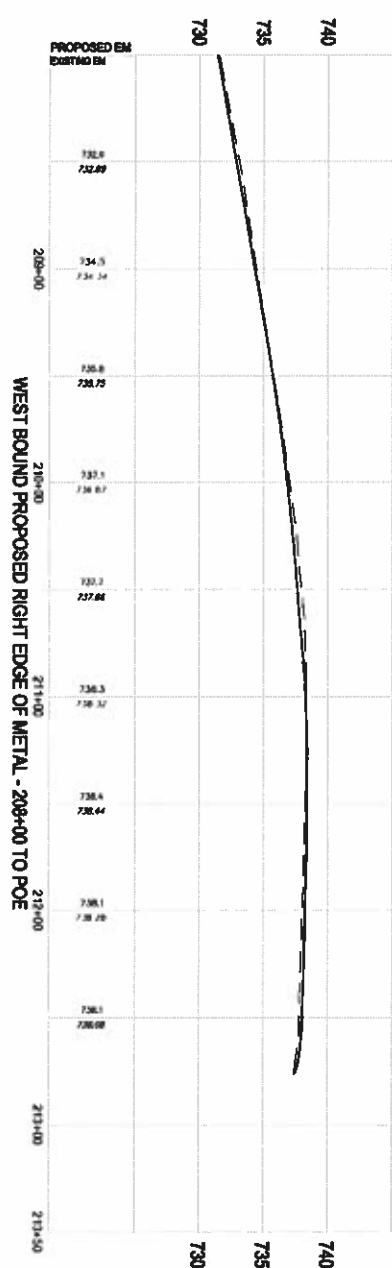


**CITY OF FLINT**  
**1101 SAGINAW STREET #105**  
**FLINT, MICHIGAN 48502**

**ROBERT T LONGWAY RESURFACING PROJECT**  
**WESTBOUND PROFILE 1**

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[illegible]



15	207637	<b>CITY OF FLINT</b> <b>1101 SAGINAW STREET #105</b> <b>FLINT, MICHIGAN 48502</b>  <b>ROBERT T LONGWAY RESURFACING PROJECT</b> <b>WESTBOUND PROFILE 2</b>	 <b>SPALDING DeDECKER</b> Engineering and Surveying Excellence Since 1954 905 South Blvd. East, Rochester Hills, MI 48307 Phone: (248) 844-5400   Fax: (248) 844-5404 www.sds-eng.com	
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NO.	DATE	DESCRIPTION	BY
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**ROBERT T LONGWAY RESURFACING PROJECT  
MAINTENANCE OF TRAFFIC 2**

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DEDECKER** Engineering and Surveying  
Excellence Since 1954  
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Phone: (248) 844-5400 | Fax: (248) 844-5404  
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NO.	DATE	DESCRIPTION	BY
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**ROBERT T LONGWAY RESURFACING PROJECT  
MAINTENANCE OF TRAFFIC 3**

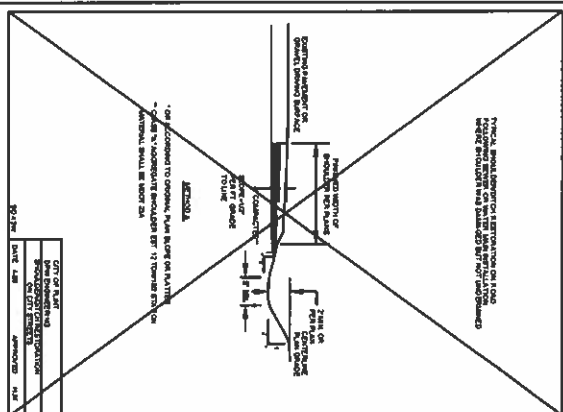
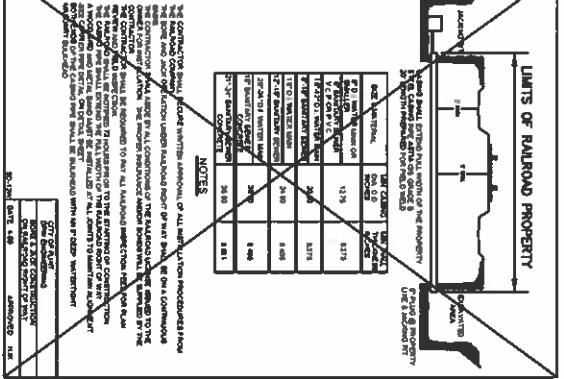
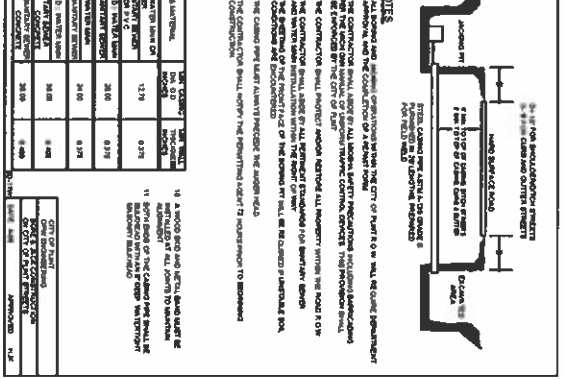
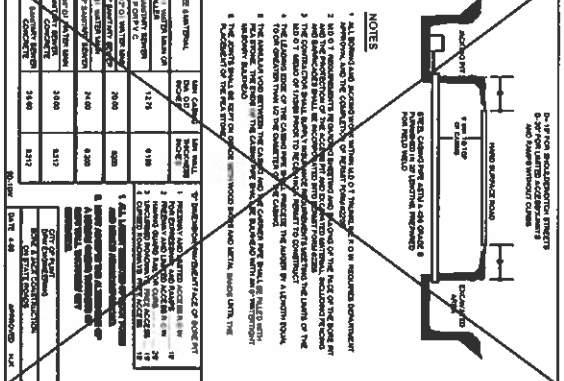
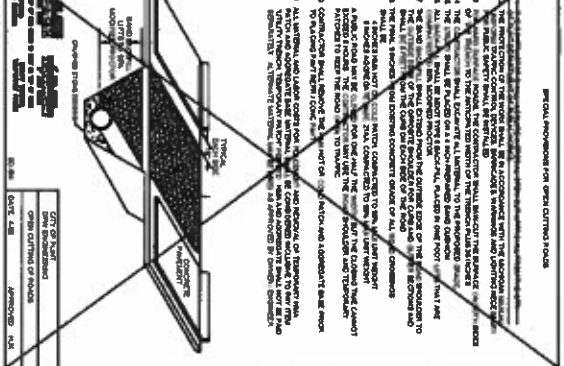
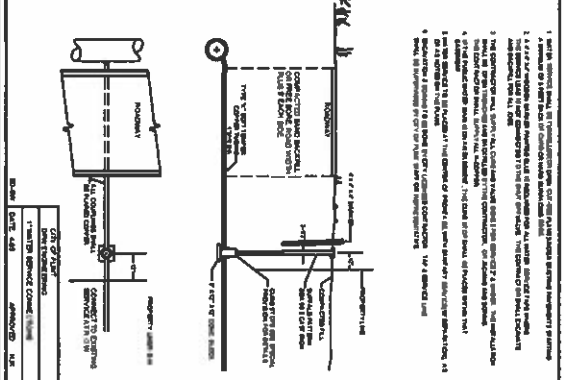
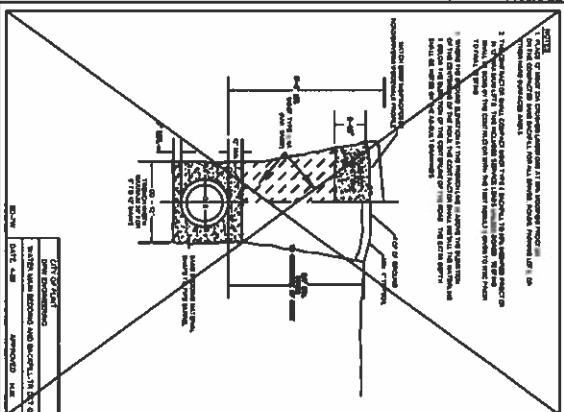
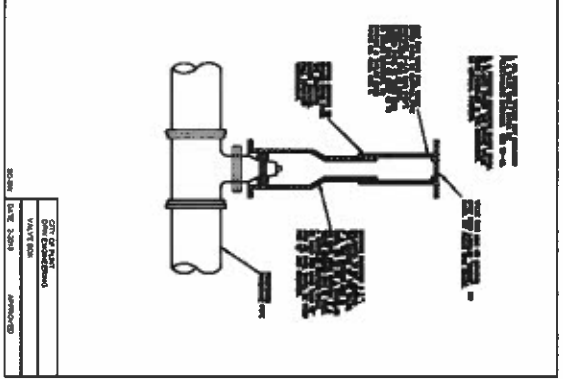
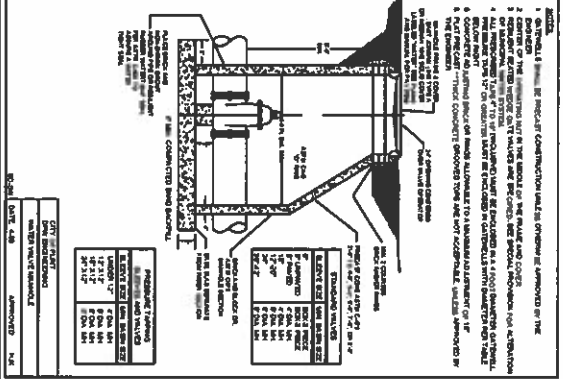
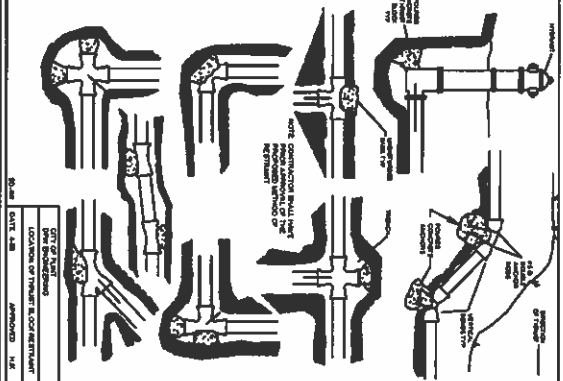
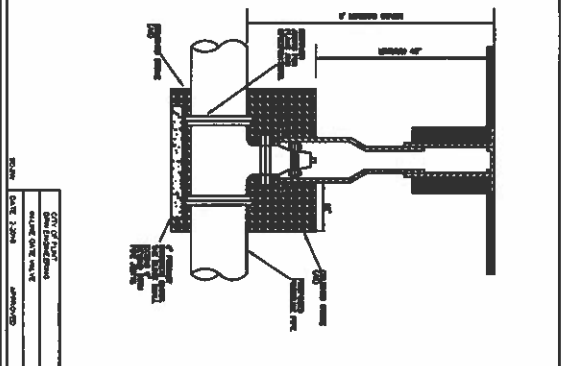
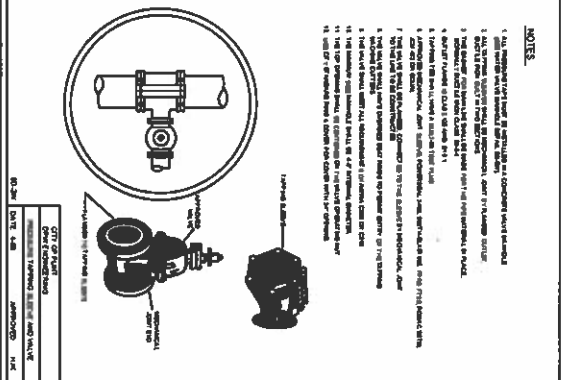
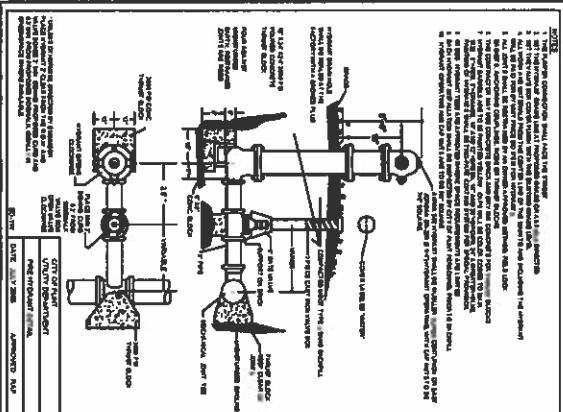
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ISSUED BY: REGISTRATION PORTFOLIO FOR SPECIALTY MEDICAL PERSONNEL												
DATE: 11/1/2006												
LENGTH IN FEET OF REGISTRATION RECORDING IS												
CLINICAL	20-40"	10-20"	40"	60-80"	80-100"	100-120"	120-140"	140-160"	160-180"	180-200"	200-220"	220-240"
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CLINICAL	20-40"	10-20"	40"	60-80"	80-100"	100-120"	120-140"	140-160"	160-180"	180-200"	200-220"	220-240"
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120-140"

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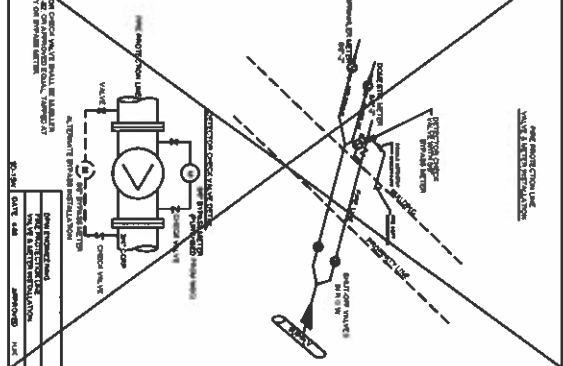
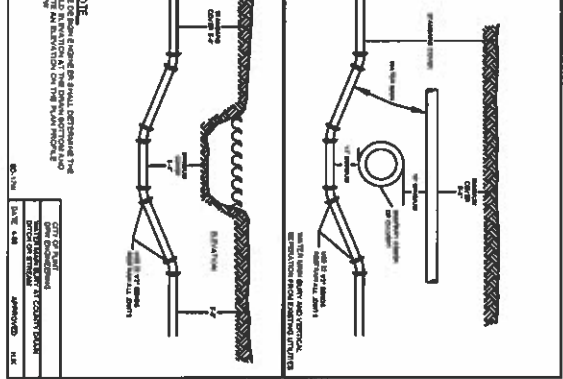
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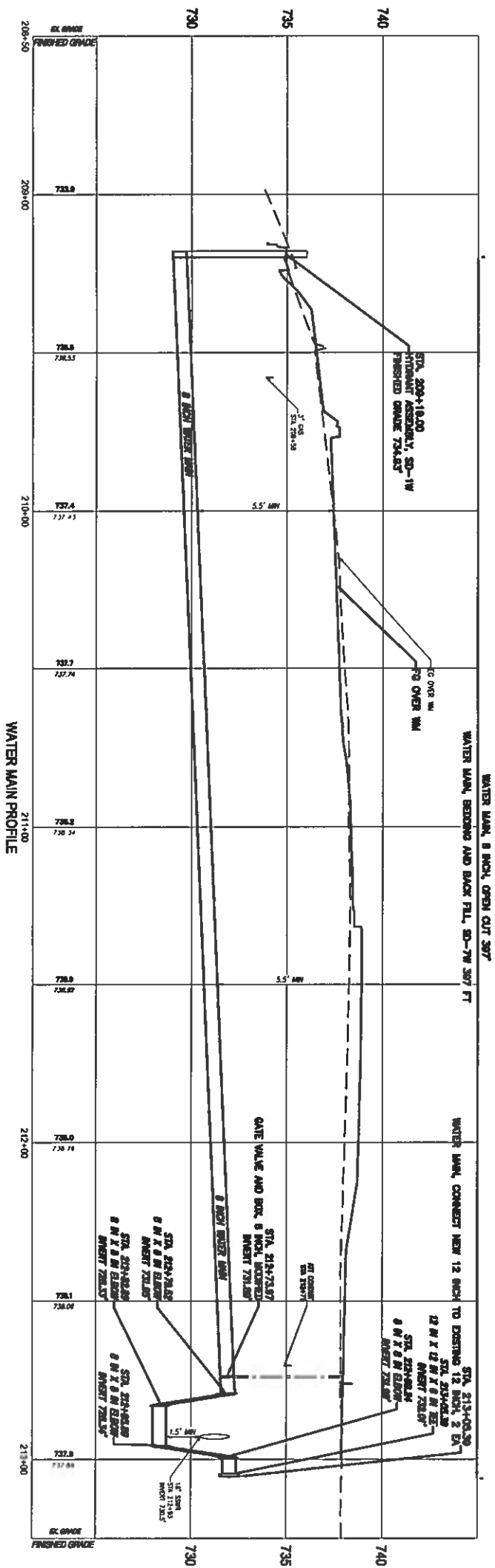
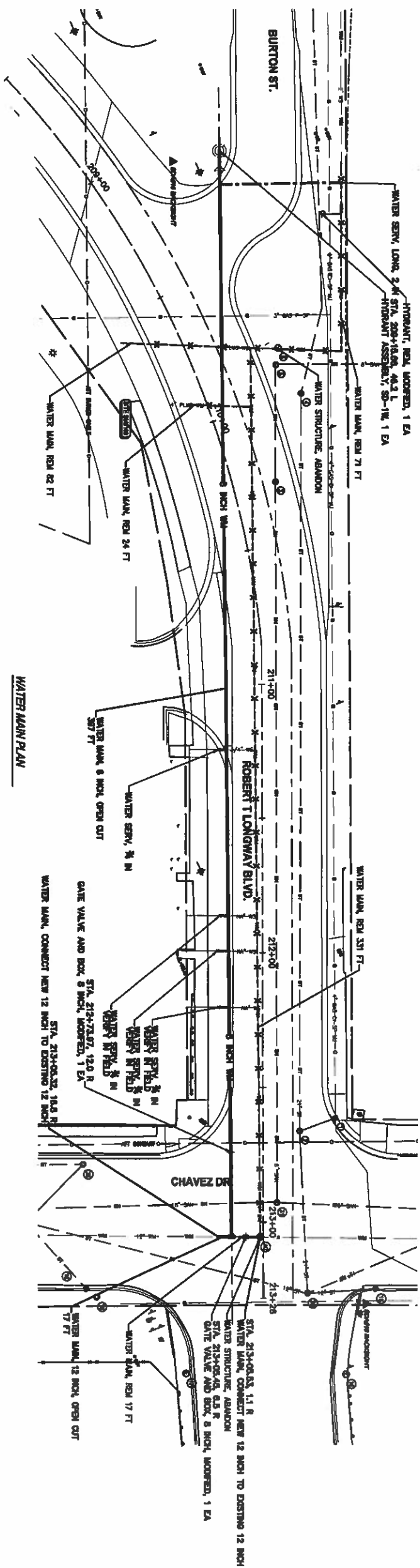
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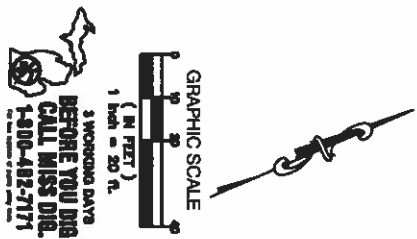
80-100"

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DEPARTMENT OF PUBLIC WORKS AND UTILITIES, Engineering Div.	
Water Distribution Details	
DESIGNED BY: PAUF	
CHECKED BY: PAUF	
NOT APPROVED	
PERSONS:	



QUANTITIES THIS SHEET		
GATE VALVE AND BOX, 8 INCH, MODIFIED	1	EA
GATE VALVE AND BOX, 12 INCH, MODIFIED	1	EA
HYDRAUNT ASSEMBLY, SD-1W	1	EA
HYDRAUNT REM, MODIFIED	1	EA
IN LINE STOP, 12 INCH	2	EA
WATER MAIN BENDING AND BACK FILL, SD-7W	413	FT
WATER MAIN, 12 INCH, OPEN CUT	17	FT
WATER MAIN, 8 INCH, OPEN CUT	397	FT
WATER MAIN, CONNECT NEW 12 INCH TO EXISTING 12 INCH	2	EA
WATER MAIN, REM	525	FT
WATER SERV, 3/4 INCH	1	EA
WATER SERV, 1/2 INCH	4	EA
WATER STRUCTURE, ABANDON	2	EA



QUANTITIES THIS SHEET		
PANT MIRR, ONLY COLD PLASTIC, 24 INCH, STOP BAR	30	FT
PANT MIRR, WATERBORNE, 4 INCH, YELLOW	1056	FT
PANT MIRR, WATERBORNE, 4 INCH, WHITE	156	FT
PANT MIRR, WATERBORNE, 2ND APPLICATION, 4 INCH, YELLOW	1056	FT
PANT MIRR, WATERBORNE, 2ND APPLICATION, 4 INCH, WHITE	156	FT

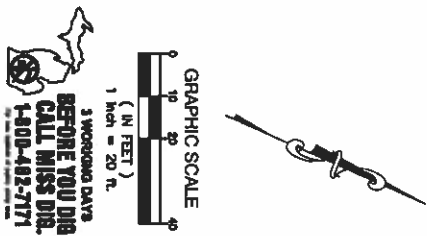
- NOTES**

  - 1 ↑ ROCK, YELLOW (DOUBLE SOLID)
  - 2 ↑ ROCK, WHITE (BRICK)
  - 3 ONLY GOLD PLATING, IN ROCK STOP BAND
  - 4 ↑ ROCK, WHITE (GOLD)
  - 5 ↑ ROCK, WHITE (GOLD)
  - 6 ONLY GOLD PLATING, AT TAIL ARROW
  - 7 ONLY GOLD PLATING, LT TAIL ARROW

**TRAFFIC SIGNAGE PLAN**  
**BOULEVARD**

REMOVE AND REPLACE RE-PCD W/10 & RE-3  
SOL TIME & MD - 1 EA  
SOL TIME MD - 14 SYT  
PORT STEEL, 3 LB - 15 FT

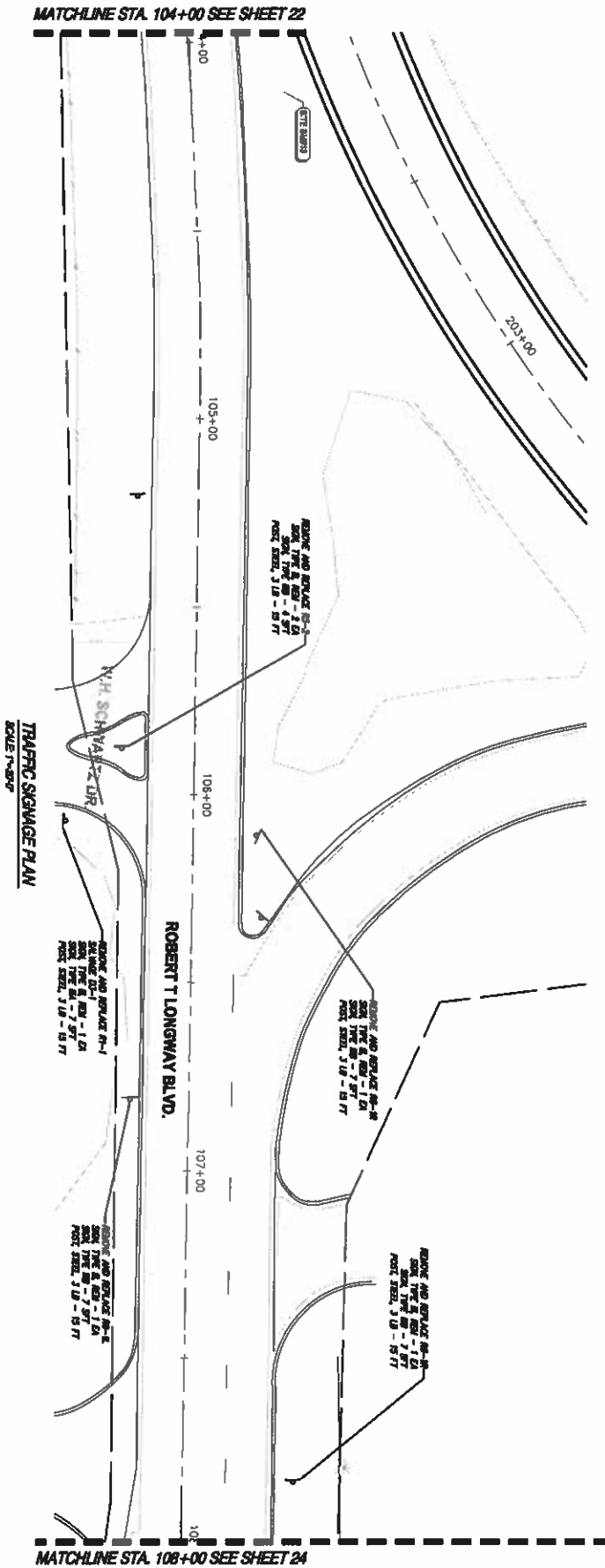
			Qty	Size (in)	in	Total Sft
Rm 3L	Obstruction Marker	Replace	1	12	x	36
R2 1	Speed Limit 35	Replace	2	30	x	36
R3 1R	Right Lane Must Turn Right	Replace	2	36	x	36
R5 1a	Wrong Way	Replace	1	42	x	30
R6 1L	No Trucks	Replace	1	24	x	4
R6 1L	One Way Arrow Left	Replace	5	54	x	18
R6 1R	One Way Arrow Right	Replace	7	54	x	18
R6 6	Began One Way	Replace	1	30	x	30
R7 10Ta	No Parking (With Transit Logo)	Replace	2	12	x	36
R8 3	No Parking Symbol	Replace	5	30	x	30
W12 1	Double Arrow	Replace	2	36	x	36
W1 6	Directional Arrow Left	Replace	2	48	x	24
W1 8	Chevron	Replace	1	18	x	24
W6 3	Divided Highway	Replace	1	36	x	36
R1 2	YIELD	Replace	1	48	x	48
R1 1	Stop	Replace	1	36	x	36
R5 1	Do Not Enter	Replace	1	36	x	36
R3 8MOD	Advance Lane Control (2 Left Turns)	Replace	1	30	x	30
W4 2L	Left Lane Ends	Remove	1	48	x	48



**CITY OF FLINT**  
**1101 SAGINAW STREET #105**  
**FLINT, MICHIGAN 48502**  
**T LONGWAY RESURFACING PROJECT**  
**PAVEMENT MARKING AND SIGNING 1**

**SPALDING  
DEDECKER** Engineering and Surveying  
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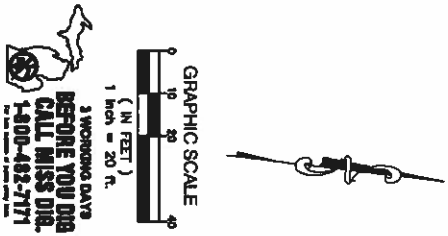




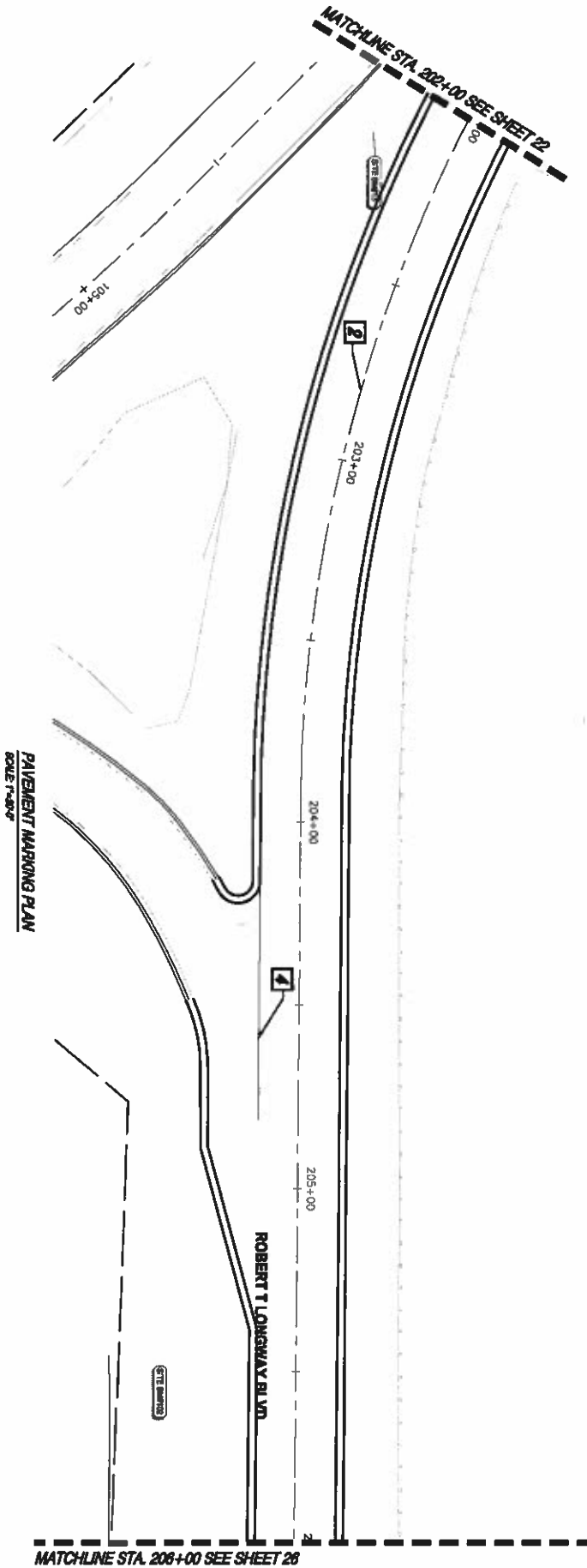
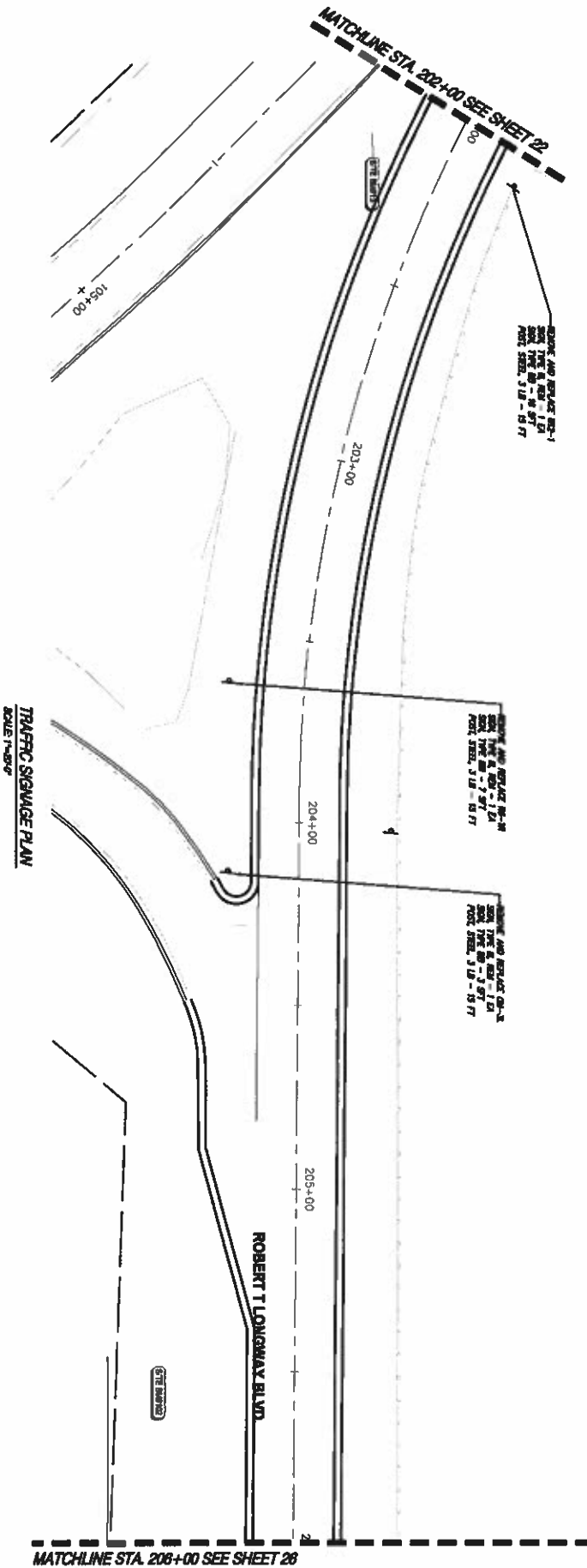
QUANTITIES THIS SHEET	
PANT MARKS, OVAL COLD PLASTIC, 6 INCH, CROSSWALK	147 FT
PANT MARKS, OVAL COLD PLASTIC, 24 INCH, STOP BAR	40 FT
PANT MARKS, OVAL COLD PLASTIC, RT TURN ARROW SYM	1 EA
PANT MARKS, WATERBORNE, 4 INCH, WHITE	367 FT
PANT MARKS, WATERBORNE, 2ND APPLICATION 4 INCH, WHITE	367 FT

- NOTES**

  - 1 + ROCK, YELLOW (DARKER GOLD)
  - 2 + ROCK, WHITE (SANDY)
  - 3 ONLY GOLD PLATING, 20 MM STOP MARK
  - 4 + ROCK, WHITE (GOLD)
  - 5 + ROCK, WHITE (GOLD)
  - 6 ONLY GOLD PLATING, 17 MM MARK
  - 7 ONLY GOLD PLATING, 17 MM MARK

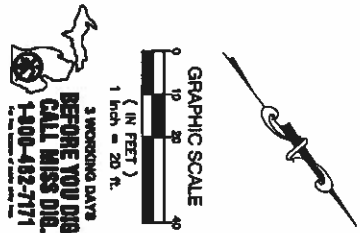


NO	DATE	DESCRIPTION	BY



QUANTITIES THIS SHEET		
PAINT MARK, OVER COLD PLASTIC, LT TURN ARROW SYM	1	EA
PAINT MARK, WATERBORNE, 4 INCH, WHITE	372	FT
PAINT MARK, WATERBORNE, 2ND APPLICATION 4 INCH, WHITE	372	FT

- NOTES
- 1 4" X 6" YELLOW (DOUBLE SOLID)
  - 2 4" X 6" WHITE (ARROW)
  - 3 4" X 6" WHITE (STOP BAR)
  - 4 4" X 6" WHITE (STOP BAR)
  - 5 4" X 6" WHITE (STOP BAR)
  - 6 4" X 6" WHITE (STOP BAR)
  - 7 4" X 6" WHITE (STOP BAR)



MATCHLINE STA. 206+00 SEE SHEET 25

TRAFFIC SIGNAGE PLAN  
SCALE 1"=40'

MATCHLINE STA. 209+00 SEE SHEET 27

MATCHLINE STA. 206+00 SEE SHEET 25

PAVEMENT MARKING PLAN  
SCALE 1"=40'

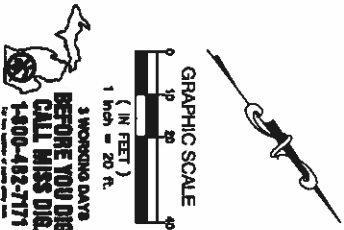
MATCHLINE STA. 208+00 SEE SHEET 27

NOTES

- 1 4 INCH YELLOW (DOUBLE SIDED)
- 2 4 INCH WHITE (SINGLE SIDED)
- 3 ONLY COLD PLASTIC, 24 INCH STOP BAR
- 4 4 INCH WHITE (SINGLE)
- 5 4 INCH WHITE (SINGLE)
- 6 ONLY COLD PLASTIC, 17 INCH ARROW
- 7 ONLY COLD PLASTIC, 17 INCH ARROW

QUANTITIES THIS SHEET

PAVT MARK, WATERBORNE, 4 INCH, WHITE	310	FT
PAVT MARK, WATERBORNE, 2ND APPLICATION 4 INCH, WHITE	310	FT



BEFORE YOU DIG  
CALL MISS DIG.  
1-800-482-7171

CITY OF FLINT  
1101 SAGINAW STREET #105  
FLINT, MICHIGAN 48502

ROBERT T LONGWAY RESURFACING PROJECT  
PAVEMENT MARKING AND SIGNING 5



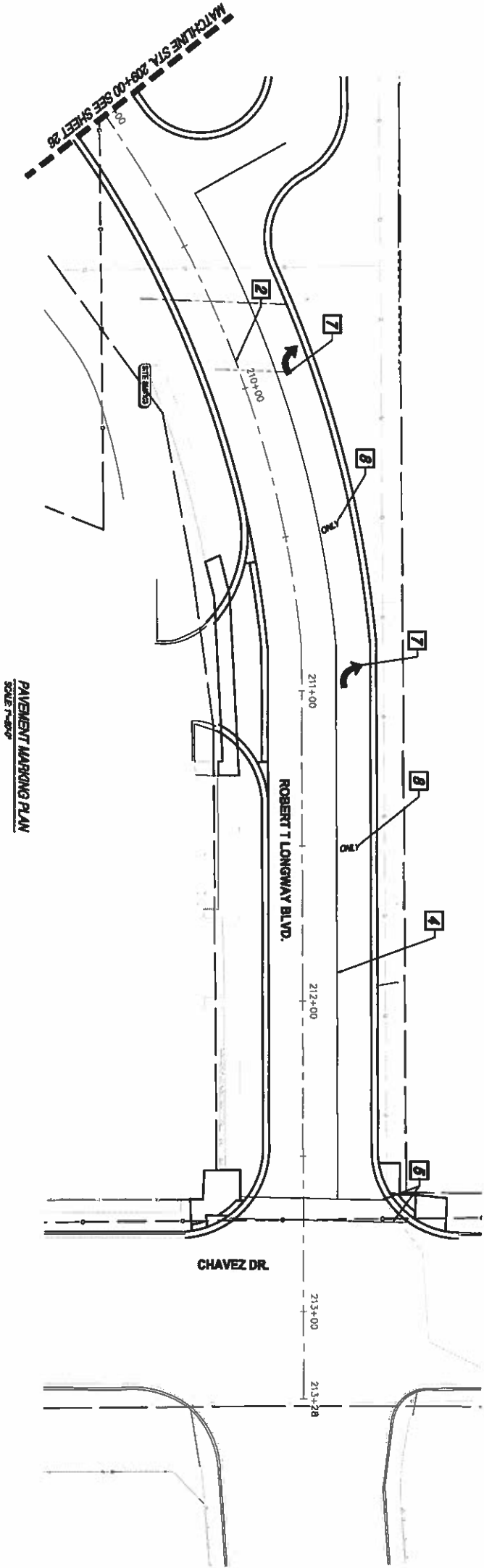
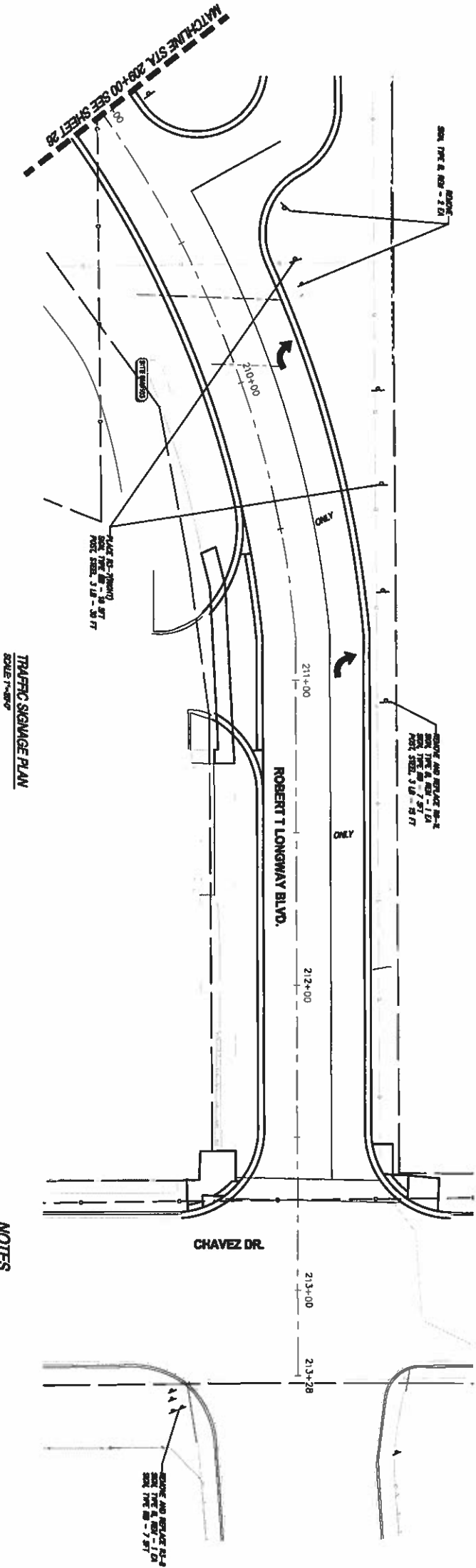
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NO.	DATE	DESCRIPTION	BY

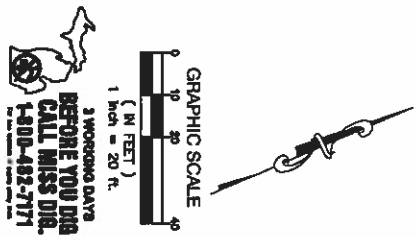




**NOTES**

- 1 AHEAD YELLOW (DOUBLE SOLID)
- 2 AHEAD WHITE (MIDWAY)
- 3 ONLY COLD PLASTIC, 24 INCH STOP BAR
- 4 AHEAD WHITE (SOLID)
- 5 AHEAD WHITE (SOLID)
- 6 ONLY COLD PLASTIC, 4 INCH STOP BAR
- 7 ONLY COLD PLASTIC, 4 INCH STOP BAR
- 8 ONLY COLD PLASTIC, 4 INCH STOP BAR

QUANTITIES THIS SHEET	
PAV. MARK, ONLY COLD PLASTIC, 6 INCH, CROSSWALK	105
PAV. MARK, WATERBORNE, 4 INCH, WHITE	274
PAV. MARK, WATERBORNE, 2ND APPLICATION 4 INCH, WHITE	274
FT	FT



**CITY OF FLINT**  
1101 SAGINAW STREET #105  
FLINT, MICHIGAN 48502  
ROBERT T LONGWAY RESURFACING PROJECT  
PAVEMENT MARKING AND SIGNING 6

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NO	DATE	DESCRIPTION	BY

REVISION	DATE	BY

SHEET NO.	27
207637	



