BID DOCUMENTS

FOR

GOULD STREET RESURFACING

CITY OF OWOSSO
301 W. MAIN STREET
OWOSSO, MICHIGAN 48867

December 22, 2015

NOTICE TO BIDDERS

GOULD STREET RESURFACING

FOR THE CITY OF OWOSSO, MICHIGAN

Sealed proposals will be received by the city of Owosso for the **GOULD STREET RESURFACING** bid and should be addressed to:

Bid Coordinator
City of Owosso
301 W. Main Street
Owosso, Michigan 48867

Major items include: 3,315 ton HMA; 3,500 ton Cold Milling HMA surface; 1,500 FT Pavt Joint and Crack repair, Det 7 or 8; 1,085 FT Curb and Gutter, Conc, Det C4; 787.5 FT Guardrail, Type B; altogether with related work items.

Bids will be accepted until **3:00 p.m. Tuesday, February 02, 2016** for **GOULD STREET RESURFACING** at which time bids will be publicly opened and read aloud.

All bids must be in writing and must contain an original signature by an authorized officer of the firm. Electronic bids (i.e., telephonic, fax, email, etc.) are **NOT** acceptable.

All bids must be accompanied by a certified **Cashier's Check or Bid Bond** for a sum of not less than five percent (5%) of the total bid and shall be made payable to the city of Owosso. This amount shall be forfeited in the case of failure on the part of the successful bidder to sign a contract and furnish satisfactory bonds as required within ten (10) consecutive calendar days after the acceptance of the bid by the city of Owosso.

All bids shall clearly contain on the outside of the **sealed** envelope in which they are submitted:

GOULD STREET RESURFACING BID

Hard copies of the proposal, contract forms and specifications are on file and may be obtained for a fee in accordance with the city's FOIA Policy at the office of the Bid Coordinator, City Hall, 301 West Main Street, Owosso, Michigan 48867. Bid documents are available at no charge on our website at www.ci.owosso.mi.us or on the MITN website at www.mitn.info.

The city reserves the right to accept any proposal; or to reject any proposal; to waive irregularities in a proposal; or to negotiate if it appears to be in the best interest of the city of Owosso.

All contract work shall begin no earlier than June 13, 2016 after the conclusion of the 2015-2016 school year. All contract work including turf establishment seeding must be completed and fully open to traffic no later than July 29, 2016. The entire project, including the acceptance of turf establishment, must be completed on or before the final project completion date of October 14, 2016.

INQUIRIES/ADDENDUMS

Addendums will be available on the city's website at www.ci.owosso.mi.us and on the MITN website at www.mitn.info.
All inquiries regarding this bid request must be received at least (5) calendar days prior to the submission and shall be addressed to:

Bid Coordinator
City of Owosso
301 W. Main Street
Owosso, Michigan 48867

Inquiries will be received in, and responded to, in writing or via FAX at 989-723-8854 or by e-mail to jane.hunt@ci.owosso.mi.us. Contact Jane Hunt at 989-725-0550 to arrange a field inspection.

INSTRUCTIONS TO BIDDERS

1. Bidders are requested to use the Vendor Proposal form furnished by the city when submitting proposals. Bid responses must be in a **sealed** envelope/container when submitted and clearly marked on the outside indicating the name of the bid.

2. Proposals, to receive consideration, must be received prior to the specified time of opening and reading as designated in the invitation.

3. Each proposal must be signed by the bidder with his usual signature. Bids by partnerships should be signed with the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and title of the person signing. Proposals by corporations must be signed with the name of the corporation, followed by the signature and designation of the president, vice-president or person authorized to bind it in the matter. **Any paperwork not filled out properly or signed will cause the bid to be considered non-responsive and shall be rejected by the city.**

4. Proposals having and erasures or corrections thereon may be rejected unless explained or noted over the signature of the bidder.

5. Proposals should be mailed or delivered to the Bid Coordinator's Office, City Hall, 301 W. Main Street, Owosso, MI 48867.

6. Special conditions included in this invitation shall take precedence over any conditions listed under General Conditions or Instructions to Bidders.

7. Insurance Coverage – the winning bidder, prior to execution of the contract, shall file with the city copies of completed certificates of insurance naming the city of Owosso as an additional insured party, as evidence that the contractor carries adequate insurance satisfactory to the city.

8. **The following items must be included with the bid response:**
    a. **Vendor Proposal / Acknowledgement of Addendum(s)**
    b. **W-9 Request for Taxpayer ID No. and Certification**
    c. **Bid Bond**

BID Proposal

GOULD STREET RESURFACING

TO: THE CITY OF OWOSSO (HEREINAFTER CALLED THE "CITY")

Bidder must provide pricing for each item listed. If additional pricing elements are being offered by the bidder, they are to be listed under "other services/items offered."

The undersigned, having examined the bid proposal forms and specifications, does hereby offer to Gould Street Resurfacing the following prices to wit:

Item	Description	Approx. Quantity	Unit	Unit Price	Total
1	Mobilization, Max 5%	1	LSUM		
2	Curb and Gutter, Rem	1000	Ft		
3	Guardrail, Rem	800	Ft		
4	Pavt, Rem	630	Syd		
5	Sidewalk, Rem	265	Syd		
6	Excavation, Earth	25	Cyd		
7	Maintenance Gravel	50	Ton		
8	Sewer, CL A, 12 inch, Tr Det A	79	Ft		
9	Sewer, CL A, 12 inch, Tr Det B	54	Ft		
10	Dr Structure Cover, Type B	5	Ea		
11	Dr Structure Cover, Type G	1	Ea		

Bidder's Initial_____

12	Dr Structure Cover, Type K	8	Ea		
13	Dr Structure, 48 inch dia	3	Ea		
14	Dr Structure, Cleaning	19	Ea		
15	Dr Structure, Tap, 12 inch	1	Ea		
16	Dr Structure, Reconstruct, Add Depth, Special	25	Ft		
17	Dr Structure Cover, Adj, Case 1, Special	29	Ea		
18	Cold Milling HMA Surface	3500	Ton		
19	Hand Patching	350	Ton		
20	HMA, 4E3	2065	Ton		
21	HMA, 5E3	1250	Ton		
22	HMA Approach	15	Ton		
23	Pavt Joint and Crack Repr, Det 7, Modified	1125	Ft		
24	Pavt Joint and Crack Repr, Det 8, Modified	375	Ft		
25	Driveway, Nonreinf Conc, 7 inch	35	Syd		
26	Curb and Gutter, Conc, Det C4	1085	Ft		
27	Detectable Warning Surface	73	Ft		

Bidder's Initial_____

28	Sidewalk Ramp, Conc, 4 inch	635	Sft		
29	Sidewalk Ramp, Conc, 7 inch	495	Sft		
30	Sidewalk, Conc, 4 inch	1700	Sft		
31	Sidewalk, Conc, 7 inch	750	Sft		
32	Guardrail, Type B	787.5	Ft		
33	Guardrail Reflector	16	Ea		
34	Post, Mailbox	5	Ea		
35	Guardrail Approach Terminal, Type 2B, Salvage and Reinstall, Special	4	Ea		
36	Post, Steel, 3 lb	560	Ft		
37	Sign, Type III, Rem	30	Ea		
38	Sign, Type IVA	223	Sft		
39	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	48	Ft		
40	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	1	Ea		
41	Pavt Mrkg, Ovly Cold Plastic, Only	1	Ea		
42	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	1	Ea		

Bidder's Initial_____

43	Pavt Mrkg, Ovly Cold Plastic, Thru Arrow Sym	1	Ea		
44	Pavt Mrkg, Polyurea, 4 inch, White	1433	Ft		
45	Pavt Mrkg, Polyurea, 4 inch, Yellow	5690	Ft		
46	Barricade, Type III, High Intensity, Lighted, Furn	14	Ea		
47	Barricade, Type III, High Intensity, Lighted, Oper	14	Ea		
48	Lighted Arrow, Type C, Furn	2	Ea		
49	Lighted Arrow, Type C, Oper	2	Ea		
50	Minor Traf Devices	1	LSUM		
51	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	1200	Ft		
52	Pavt Mrkg, Type NR, Paint, 4 inch, Yellow, Temp	10,250	Ft		
53	Pavt Mrkg, Type R, 4 inch, Yellow, Temp	1350	Ft		
54	Plastic Drum, High Intensity, Furn	170	Ea		
55	Plastic Drum, High Intensity, Oper	170	Ea		
56	Sign, Type B, Temp, Prismatic, Furn	1200	Sft		
57	Sign, Type B, Temp, Prismatic, Oper	1200	Sft		
58	Traf Regulator Control	1	LSUM		

Bidder's Initial_____

59	Turf Establishment, Performance	500	Syd		
60	Gate Box, Reconst, Case 1	2	Ea		
61	Gate Box, Adj, Case 1	3	Ea		
				BID TOTAL	

Bidder's Initial_____

VARIANCE FROM SPECIFICATIONS: If the bidder is unable to comply with the specifications as outlined, the bidder shall clearly note these variations from the specifications. The bidder may also propose additions to these specifications for the city to consider, but the costs associated with these additions shall be stated separately.

If the work is not complete and fully open to traffic on or before the date set for completion or any extension, the Contractor shall pay the city liquidated damages of ***Six Hundred Dollars* ($600.00)** a calendar day until the work is satisfactorily completed. Liquidated damages for delay may be deducted from payments due the Contractor or may be collected from the Contractor or the Contractor's surety.

The undersigned agrees that if the city accepts this proposal, Contractor will, within 10 consecutive calendar days after receiving notice of the acceptance, enter into a contract to furnish all labor, equipment, and tools necessary to execute the work at the unit prices named in the bid proposal. Contractor will furnish the required surety for performance, for 100% of this bid, which shall be accepted and approved by the city.

The undersigned agrees that if the city accepts this proposal, Contractor will start this project no sooner than **June 13, 2016**, and will have the street fully open to traffic no later than **July 29, 2016**, and will substantially complete the entire work under this contract by **October 14, 2016**. This schedule may be extended for rain days or cold weather for calendar days after July 29, 2016 only as approved by the city of Owosso.

On behalf of _____, I hereby submit this proposal for **GOULD STREET RESURFACING** for your consideration. The undersigned acknowledges that this proposal is subject to the General Conditions and the General Specifications included in the contract documents. In submitting this proposal, it is understood that the right is reserved by the CITY to reject any and all proposals, and waive any irregularities in the bidding process. The CITY may award this contract based on any combination of the total bid and/or alternates.

Dated and signed at _____ State of _____

This _____ day of _____, 20____.

_____

Bidder

Witness:

_____ By/s/

_____

Business Address

_____

Signature

_____

Title

_____

Telephone Number

GENERAL CONDITIONS

The contractor shall direct all phases of the work. A representative of the contractor, authorized to make decisions, shall be on the job when work is in progress. Contractor shall build this work according to the ***2012 M.D.O.T. Standard Specifications Construction***.

The street listed is as follows: GOULD STREET
Unless otherwise stated otherwise all materials, procedures and testing shall follow the **M.D.O.T.** ***2012 Standard Specifications for Construction.***

The streets under construction shall be closed to through traffic during the project, with access for local traffic to their driveways.

The contractor, before execution of the contract, shall file with the city copies of completed certificates of insurance naming the city of Owosso as an insured party, as evidence that the contractor carries adequate insurance, satisfactory to the city.

1. BID ACCEPTANCE
The city reserves the right to reject any or all proposals. Unless otherwise specified, the city reserves the right to accept any item in the proposal. In case of error in extending the total amount of the bid, the unit prices shall govern.

2. PAYMENT
Unless otherwise stated by the bidder, time, concerning discount offered, will be computed from date of delivery and acceptance at destination or from date correct bill or claim voucher properly certified by the contractor is received. When so stated herein, partial payments, based on a certified approved estimate by the city of materials, supplies or equipment delivered or work done, may be made upon presentation of a properly-executed claim voucher. The final payment will be made by the city when materials, supplies, equipment or the work done have been fully delivered or completed to the full satisfaction of the city.

3. BID DEFAULT
In case of default by the bidder or contractor, the city of Owosso may procure the articles or services from other sources and hold the bidder or contractor responsible for any excess cost occasioned thereby.

4. UNIT PRICES
Prices should be stated in units of quantity specified.

5. QUOTED PRICES
Unless otherwise stated by the bidder, prices quoted will be considered as being based on delivery to a designated destination and to include all charges for packing, crating, containers, shipping, etc., and being in strict accordance with specifications and standards as shown.

6. SUBSTITUTIONS
Wherever a reference is made in the specifications or description of the materials, supplies, equipment, or services required, to a particular trade name, manufacturer's catalog, or model number, the bidder, if awarded a contract or order, will be required to furnish the particular item referred to in strict accordance with the specifications or description unless a departure or substitution is clearly noted and described in the proposal.

7. HOLD CITY HARMLESS
The bidder, if awarded an order or contract, agrees to protect, defend, and save the city harmless against any demand for payment for the use of any patented material, process, article, or device that may enter into the manufacture, construction, or form a part of the work covered by either order or contract. Bidder further agrees to indemnify and save the city harmless from suits or action of every nature and description brought against it, for or on account of any injuries or damages received or sustained by any party or parties, by or from any of the acts of the contractor, his employees, subcontractors, or agents.

8. COMPETITIVE BIDDING STATUTES
The laws of the state of Michigan, the charter and ordinances of the city of Owosso, as far as they apply to the laws of competitive bidding, contracts and purchases, are made a part hereof.

9. SAMPLES
Samples, when requested, must be furnished free of expense to the city and, if not destroyed, will upon request be returned at the bidder' expense.

10. BONDS
A certified check or bid bond may be required, payable to the City of Owosso. If so required in the bid documents, a performance bond and labor and material bond in the amounts stated in the bid documents, shall be on file with the city before work commences. The city will determine the amount and sufficiency of the sureties.

11. PROPOSAL GUARANTY
All checks or bid bonds except those of the three lowest bidders will be returned when the bids have been opened and tabulated. The certified checks or bid bonds of the three lowest bidders will be held until the contract documents have been signed, after which remaining certified checks or bid bonds will be returned to the respective bidders.

12. BIDDERS
The city may demand that the contractor file a sworn experience and financial statement setting forth the financial resources, adequacy of plant and equipment, organization, experience and other pertinent and material facts as may be desirable.

13. DAMAGE LIABILITY AND INSURANCE
The contractor shall save harmless and indemnify the city and its employees against all claims for damages to public or private property and for injuries to persons arising during the progress and because of the work.

a. Workers' compensation insurance - The contractor, before the execution of the contract, shall file a certification that the contractor carries workers' compensation insurance.

b. Bodily injury and property damage - The contractor, before execution of the contract, shall file with the city copies of completed certificates, of insurance acceptable to the city naming the city as an insured party. The coverage shall afford protection against damage claims to public or private property, and injuries to persons, arising out of and during the progress of the work, and to its completion and, where specified in the proposal, similar insurance to protect the owners of premises on or near which construction operations take place.

c. Bodily injury and property damages other than automobile - Unless otherwise specifically required by special provisions in the proposal, the minimum limits of property damage and bodily injury liability covering each contract shall be:

   Bodily injury and property damage liability:
   Each occurrence: $1,000,000
   Aggregate: $2,000,000

   Such insurance shall include, but not be limited to, coverage for: a) underground damage to facilities due to drilling and excavating with mechanical equipment and b) collapse or structural injury to structures due to blasting or explosion, excavation, tunneling, pile driving, cofferdam work, or building moving or demolition.

d. Owners' protective liability - Bodily injury and property damage protection shall be extended to the city.

e. Bodily injury liability and property damage liability automobiles - Unless otherwise specifically required by special provisions in the proposal, the minimum limits of bodily injury liability and property damage liability shall be:

   Bodily injury liability:
   Each person: $ 500,000
   Each occurrence: $1,000,000

   Property damage liability:
   Each occurrence: $1,000,000

Combined single limit for bodily injury and property damage liability:
Each occurrence: $2,000,000

f. Notice - The contractor shall not cancel or reduce the coverage of any insurance required by this section without providing 30-day prior written notice to the city. All such insurance must include an endorsement under which the insurer shall agree to notify the city immediately of any reduction by the contractor. The contractor shall cease operations on the occurrence of any such cancellation or reduction, and shall not resume operations until new insurance is in force.

g. Reports - At the request of the city, the contractor or the contractor's insurance carrier shall report claims received, inspections made, and disposition of claims.

14. PROTECTION OF LAND MONUMENTS AND PROPERTY STAKES

Land monuments or stakes marking property corners shall not be moved or otherwise disturbed except as directed by the city. If any land monuments or lot stakes are moved or disturbed by the contractor, the cost of replacing each land monument or lot stake so moved or disturbed shall be deducted from any money due the contractor, as payment to the city for the cost of replacing said land monument or lot stakes.

15. CONTRACTOR'S RESPONSIBILITY FOR WORK

The contractor shall be responsible for any damages that the work may sustain before its acceptance, and shall rebuild, repair, restore and make good, at its own expense, all injuries and damages to any portion of the work by the action of the elements or from any cause whatsoever before its acceptance. Neither the final payment nor any provision in the contract documents shall relieve the contractor of the responsibility for negligence or faulty materials or workmanship within the extent and period provided by law, and, upon written notice, the contractor shall remove any defects due therefrom and pay for any damaged due to other work resulting therefrom, which shall appear within one year after the date of completion and acceptance.

16. PAYMENT

At monthly intervals commencing after construction has been started, the city will make partial payment to the contractor based on a duly-certified estimate prepared by the city of the work done by the contractor during the preceding four-week period. Each estimate will be submitted to the city council for approval on either the first or third Monday of each month. The city will retain ten percent (10%) of the amount of each such estimate until final completion and acceptance of all work covered by this contract. Before the contractor shall demand final estimates or payment, contractor will furnish to the city, supported by sworn statements, satisfactory evidence that all persons that have supplied labor, materials, or equipment for the work embraced under this contract have been fully paid for the same; and that, in case such evidence be not furnished as aforesaid, such sums as the city may deem necessary to meet the lawful claims of such persons may be retained by the city from any monies that may be due or become due to the contractor under this contract until such liabilities shall be fully discharged and the evidence thereof be furnished to the city.

17. CITY'S RIGHT TO WITHHOLD CERTAIN AMOUNTS AND MAKE APPLICATION THEREOF

Besides the payment to be retained by the city under the preceding provisions of these general conditions, the city may withhold a sufficient amount of any payment otherwise due to the contractor to cover a) payments earned or due for just claims for furnish labor or materials on the project under this contract, b) for defective work not remedied and c) for failure of the contractor to make proper payments to subcontractors. The city shall disburse and shall have the right to act as agent for the contractor in disbursing such funds as have been previously withheld pursuant to this paragraph to the party or parties who are entitled to payment from it. The city will pay to the contractor a proper accounting of all such funds disbursed for the contractor.

18. OWNER'S RIGHT TO DO WORK

If the contractor should neglect to prosecute the work properly or fail to perform any provisions of this contract, the city, after three (3) days' written notice to the contractor and contractor's surety, may without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost of it from the payment due the contractor.

19. DEFINITION OF NOTICE

Where in any of the contract documents there is any provision in respect to the giving of notice, such notice shall be deemed given to the owner, when written notice is delivered to the city manager, or placed in the United States mail addressed to the city clerk; as to the contractor, when a written notice shall be delivered to contractor's representative at the project site or by mailing such written notice in the United States mail addressed to the contractor at the place stated

in the bid proposal as the business address; as to the surety on the performance bond, when a written notice is placed in the United States mail addressed to the surety at the surety's home office or to its agent or agents who executed such performance bond on behalf of the surety.

20. SUBCONTRACTS
The contractor shall not subcontract any work in the execution of this contract without the written consent of the city. The contractor shall be responsible for the acts or omissions of any subcontractor and of anyone employed directly or indirectly by such subcontractor.

21. ASSIGNMENT OF CONTRACT
The contractor shall not assign this contract or any part hereof without the written consent of the city. No assignment shall be valid unless it shall contain a provision that any funds to be paid to the assignee under this agreement are subject to a prior lien for services rendered or materials or supplies for the performance of the work specified in the contract in favor of all persons, firms, or corporations rendering such services or supplying such materials.

22. MAINTAINING TRAFFIC
The contractor shall provide flares, signs, barricades, traffic regulators, etc., to conform to the current *Michigan Manual of Uniform Traffic Control Devices* or as directed by the city. The contractor shall not close any road or street without the permission of the city. If any street or road is to be closed by the contractor, it shall be the responsibility of the contractor to notify the Owosso fire department when the street will be closed and again when the street is open to traffic. Traffic control devices for any detours deemed necessary by the city shall be provided by the contractor. Cost of maintaining shall be incidental to the cost of the project unless otherwise provided.

23. ORDER OF COMPLETION
The contractor shall submit, whenever requested by the city, a schedule of the work showing completion dates. The city may request that certain portions of the work be done before other portions. If so requested, the contractor shall arrange to schedule to meet the request by the owner.

24. USE OF COMPLETED PORTIONS
The city shall have the right to take possession and use any completed or partially completed portions of the work; but such taking possession and use shall not be deemed acceptance. Pending final completion and acceptance of the work, all necessary repairs and adjustments on any section of the work due to defective material, workmanship, natural causes, or other operations of the contractor, other than normal wear and tear, shall be done by and at the expense of the contractor.

25. WATER SUPPLY
The contractor shall arrange for securing an adequate water supply for use in construction and for drinking water for his employees. If the city's water is used on the work, the contractor shall make the necessary application and shall pay all costs involved. Connections, piping and the contractor shall furnish and maintain fittings for conveying water. Contractor shall pay for water according to the city's established rates.

26. CLEANUP
The contractor shall keep the project free from waste materials or rubbish caused by its employees or work. This includes as a minimum excess excavation or backfill material, broken or rejected materials, empty containers or general debris. The owner may require complete cleanup of certain areas as construction is completed.

27. SUPERVISION
The contractor shall have a superintendent on the job site to coordinate and expedite the various construction activities for the duration of this contract.

28. EQUAL EMPLOYMENT OPPORTUNITY AND OTHER CLAUSES
The contractor shall agree not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined by Michigan Complied Statutes, or national origin. This provision shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training including apprenticeship. The contractor further agrees to take affirmative action to ensure equal employment opportunities for persons with disabilities. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provision of the non-discrimination clause.

SIGNATURE PAGE AND LEGAL STATUS

The undersigned certifies that he is an official legally authorized to bind his firm and to enter into a contract should the city accept this proposal.

Bid proposal by _____
(Name of Firm)

Legal status of bidder. Please check the appropriate box and **USE CORRECT LEGAL NAME.**

A. Corporation ____ ; State of Incorporation _____

B. Partnership ____ ; List of names _____

_____

C. DBA ____ ; State full name _____ DBA

_____

_____

D. Other ____ ; Explain _____

_____

Signature of Bidder _____ Title _____
(Authorized Signature)

Signature of Bidder _____ Title _____
(Authorized Signature)

Address _____ City _____ Zip _____

Telephone ( ) _____

Signed this _____ day of _____ 20____.

Bidder acknowledges receipt of the following Addenda:

ADDENDUM NO.	BIDDER'S INITIALS
_____	_____
_____	_____
_____	_____

W-9 INFORMATION FOR LEGAL STATUS

Sole proprietor. Enter your individual name as shown on your income tax return on the “Name” line. You may enter your business, trade, or “doing business as (DBA)” name on the “Business name/disregarded entity name” line.

Partnership, C Corporation, or S Corporation. Enter the entity's name on the “Name” line and any business, trade, or “doing business as (DBA) name” on the “Business name/disregarded entity name” line.

Disregarded entity. Enter the owner's name on the “Name” line. The name of the entity entered on the “Name” line should never be a disregarded entity. The name on the “Name” line must be the name shown on the income tax return on which the income will be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a domestic owner, the domestic owner's name is required to be provided on the “Name” line. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on the “Business name/disregarded entity name” line. If the owner of the disregarded entity is a foreign person, you must complete an appropriate Form W-8.

Note. Check the appropriate box for the federal tax classification of the person whose name is entered on the “Name” line (Individual/sole proprietor, Partnership, C Corporation, S Corporation, Trust/estate).

Limited Liability Company (LLC). If the person identified on the “Name” line is an LLC, check the “Limited liability company” box only and enter the appropriate code for the tax classification in the space provided. If you are an LLC that is treated as a partnership for federal tax purposes, enter “P” for partnership. If you are an LLC that has filed a Form 8832 or a Form 2553 to be taxed as a corporation, enter “C” for C corporation or “S” for S corporation. If you are an LLC that is disregarded as an entity separate from its owner under Regulation section 301.7701-3 (except for employment and excise tax), do not check the LLC box unless the owner of the LLC (required to be identified on the “Name” line) is another LLC that is not disregarded for federal tax purposes. If the LLC is disregarded as an entity separate from its owner, enter the appropriate tax classification of the owner identified on the “Name” line.

Other entities. Enter your business name as shown on required federal tax documents on the “Name” line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the “Business name/disregarded entity name” line.

Please see attached W-9 Request for Taxpayer Identification Number and Certification form.

Form **W-9**
(Rev. December 2011)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:
☐ Individual/sole proprietor ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶

☐ Other (see instructions) ▶

☐ Exempt payee

Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

City, state, and ZIP code

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number

			–			–				

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Here **Signature of U.S. person** ▶ **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

PROOF OF INSURANCE

This is to certify that the following endorsement is part of the policy(ies) described below:

NAMED INSURED (CONTRACTOR)	**COMPANIES AFFORDING COVERAGE**
	A.
	B.
ADDRESS	**C.**

It is hereby understood and agreed that the city of Owosso, its city council and each member thereof and every officer and employee of the city shall be named as joint and several assureds with respect to claims arising out of the following project:

GOULD STREET RESURFACING

It is further agreed that the following indemnity agreement between the city of Owosso and the named insured is covered under this policy: Contractor agrees to indemnify, hold harmless and defend city, its city council and each member thereof and every officer and employee of city from any and all liability or financial loss resulting from any suits, claims, losses or actions brought against and from all costs and expenses of litigation brought against city, its city council and each member thereof and any officer or employee of city which results directly or indirectly from the wrongful or negligent actions of contractor's officers, employees, agents or others employed by Contractor while engaged by contractor in the (performance of this agreement) construction of this project.

It is further agreed that the inclusion of more than one assured shall not operate to increase the limit of the company's liability and that insurer waives any right on contribution with insurance which may be available to the city of Owosso.

The contractor, or any of their subcontractors, shall not commence work under this contract until they have attained the insurance required below, and shall keep such insurance in force during the entire life of this contract. All coverage shall be with insurance companies licensed and admitted to do business in the State of Michigan and acceptable to the city of Owosso. The requirements below should not be interpreted to limit the liability of the Contractor. All deductibles and SIR's are the responsibility of the Contractor.

The Contractor shall procure and maintain the following insurance coverage:

1. **Worker's Compensation Insurance** including Employers' Liability Coverage, in accordance with all applicable statutes of the State of Michigan.

2. **Commercial General Liability Insurance** on an "Occurrence Basis" with limits of liability not less than $1,000,000 per occurrence and aggregate. Coverage shall include the following extensions: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Contractors Coverage; (D) Broad Form General Liability Extensions or equivalent, if not already included.

3. **Automobile Liability** including Michigan No-Fault Coverages, with limits of liability not less than $1,000,000 per occurrence, combined single limit for Bodily Injury, and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.

4. **Additional Insured:** Commercial General Liability and Automobile Liability, as described above, shall include an endorsement stating the following shall be ***Additional Insureds*****:** City of Owosso, all elected and appointed officials, all employees and volunteers, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof. It is understood and agreed by naming City of Owosso as additional insured, coverage afforded is considered to be primary and any other insurance the city of Owosso may have in effect shall be considered secondary and/or excess.

5. **Cancellation Notice:** All policies, as described above, shall include an endorsement stating that it is understood and agreed that a Ten (10) days notice for non-payment of premium is required and a Thirty (30) days notice is required

for Non-Renewal, Reduction, and/or Material Change, shall be sent to: City of Owosso, Bid Coordinator, 301 W. Main Street, Owosso, Michigan 48867.

6. **Proof of Insurance Coverage**: The Contractor shall provide the city of Owosso, at the time that the contracts are returned by him/her for execution, a Certificate of Insurance as well as the required endorsements. In lieu of required endorsements, if applicable, a copy of the policy sections where coverage is provided for additional insured and cancellation notice would be acceptable. Copies or certified copies of all policies mentioned above shall be furnished, if so requested.

If any of the above coverages expire during the term of this contract, the Contractor shall deliver renewal certificates and endorsements to the city of Owosso at least ten (10) days prior to the expiration date.

Please include a copy of insurance declaration verifying amounts of coverage. The verification of insurance is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate or verification of insurance may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

DATE _____ BY _____
Authorized Insurance Agent

AGENCY _____ TITLE _____

ADDRESS _____

_____

GENERAL CONDITIONS
PART II

(Federal Labor Standards Provisions)

201. APPLICABILITY

The Project or Program to which the work covered by this Contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

202. MINIMUM WAGE RATES FOR LABORERS AND MECHANICS

All laborers and mechanics employed upon the work covered by this Contract shall be paid unconditionally and not less often than once each week, and without subsequent deduction or rebate on any account (except such payroll deductions as are made mandatory by law and such other payroll deductions as are permitted by the applicable regulations issued by the Secretary of Labor, United States Department of Labor, pursuant to the Anti-Kickback Act hereinafter identified), the full amount due at time of payment computed at wage rates not less than those contained in the wage determination decision of said Secretary of Labor (**a copy of which is attached as Attachment B and herein incorporated by reference**), regardless of any contractual relationship which may be alleged to exist between the Contractor or any subcontractor and such laborers and mechanics. All laborers and mechanics employed upon such work shall be paid in cash, except that payment may be by check if the employer provides or secures satisfactory facilities approved by the City of Owosso or Public Body for the cashing of the same without cost or expense to the employee. For the purpose of this clause, contributions made or costs reasonably anticipated under Section 1 (b) (2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section 5.5 (a) (1) (iv) of Title 29, Code of Federal Regulations. Also for the purpose of this clause, regular contributions made or costs incurred for more than a weekly period under plans, funds, or programs, but covering the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

203. UNDERPAYMENTS OF WAGES OR SALARIES

In case of underpayment of wages by the Contractor or by any subcontractor to laborers or mechanics employed by the Contractor or subcontractor upon the work covered by this Contract, the City of Owosso or Public Body in addition to such other rights as may be afforded it under this Contract shall withhold from the Contractor, out of any payments due the Contractor, so much thereof as the City of Owosso or Public Body may consider necessary to pay such laborers or mechanics the full amount of wages required by this Contract. The amount so withheld may be disbursed by the City of Owosso or Public Body, for and on account of the Contractor or the subcontractor (as may be appropriate), to the respective laborers or mechanics to whom the same is due or on their behalf to funds/or programs for any type of fringe benefit prescribed in the applicable wage determination.

204. ANTICIPATED COSTS OF FRINGE BENEFITS

If the Contractor does not make payments to a trustee or other third person, he may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing fringe benefits under a plan or program of a type expressly listed in the wage determination decision of the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. A copy of any findings made by the Secretary of Labor in respect to fringe benefits being provided by the Contractor must be submitted to the City of Owosso or Public Body with the first payroll filed by the Contractor subsequent to receipt of the findings.

205. OVERTIME COMPENSATION REQUIRED BY CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (76 State. 357-360: Title 40 U.S.C., Sections 327-332)

a. *Overtime Requirements*. No Contractor or subcontractor contracting for any part of the Contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any laborer or mechanic in any workweek in which he is employed on such work to work in excess of 40 hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of 40 hours in such work week, as the case may be.

b. *Violation: Liability for Unpaid Wages Liquidated Damages*. In the event of any violation of the clause set forth in paragraph (a), the Contractor and any subcontractor responsible therefore shall be liable to any affected employee for his unpaid wages. In addition such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the clause set forth in paragraph (a), in the sum of $ 10 for each calendar day on which such employee was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in paragraph (a).

c. *Withholding for Liquidated Damages*. The City of Owosso or Public Body shall withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor, such sums as may administratively be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for liquidated damages as provided in the clause set forth in paragraph (b).

d. *Subcontracts*. The Contractor shall insert in any subcontracts the clauses set forth in paragraphs (a), (b), and (c) of this Section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

206. APPRENTICES AND TRAINEES

a. *Apprentices*. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the contractor as to his entire force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not a trainee as defined in paragraph 2, below, or is not registered or otherwise employed as stated above, shall be paid the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The contractor or subcontractor will be required to furnish to the contracting officer or a representative of the Wage-Hour Division of the U.S. Department of Labor written evidence of the registration of his program and apprentices as well as the appropriate ratios and wage rates (expressed in percentages of the journeymen hourly rates), for the area of construction prior to using any apprentices on the contract work. The wage rate paid apprentices shall be not less than the appropriate percentage of the journeyman's rate contained in the applicable wage determination.

b. *Trainees*. Except as provided in 29 CFR 5.15 trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and

individually registered in a program which has received prior approval, evidenced by formal certification, by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training. The ratio of trainees to journeymen shall not be greater than permitted under the plan approved by the Bureau of Apprenticeship and Training. Every trainee must be paid at not less than the rate specified in the approved program for his level of progress. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Bureau of Apprenticeship and Training shall be paid not less than the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor or subcontractor will be required to furnish the contracting officer or a representative of the Wage-Hour Division of the U.S. Department of Labor written evidence of the certification of his program, the registration of the trainees, and the ratios and wage rates prescribed in that program. In the event the Bureau of Apprenticeship and Training withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. *Equal Employment Opportunity*. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

207. EMPLOYMENT OF CERTAIN PERSONS PROHIBITED

No person under the age of sixteen years and no person who, at the time, is serving sentence in a penal or correctional institution shall be employed on the work covered by this Contract.

208. REGULATIONS PURSUANT TO COPELAND ANTI-KICKBACK ACT

The Contractor shall comply with the applicable regulations of the Secretary of Labor, United States Department of Labor, made pursuant to the Copeland Anti-Kickback Act (Title 40 U.S.C., Section 276c), and any amendment or modifications thereof, shall cause appropriate provisions to be inserted in subcontracts to insure compliance therewith by all subcontractors subject thereto, and shall be responsible for the submission of affidavits required by subcontractor there under, except as said Secretary of Labor may specifically provide for reasonable limitations, variations, tolerance, and exemptions from the requirements thereof.

209. EMPLOYMENT OF LABORERS OR MECHANICS NOT LISTED IN AFORESAID WAGE DETERMINATION DECISION

Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the Contract will be classified or reclassified conformably to the wage determination by the City of Owosso or Public Body, and a report of the action taken shall be submitted by the City of Owosso or Public Body, through the Secretary of Housing and Urban Development, to the Secretary of Labor, United States Department of Labor. In the event the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers and mechanics to be used, the question accompanied by the recommendation of the City of Owosso or Public Body shall be referred, through the Secretary of Housing and Urban Development, to the Secretary of Labor for final determination.

210. FRINGE BENEFITS NOT EXPRESSED AS HOURLY WAGE RATES

The City of Owosso or Public Body shall require, whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly wage rate and the Contractor is obligated to pay cash equivalent of such a fringe benefit, an hourly cash equivalent thereof to be established. In the event the fringe benefit expressed as an hourly

cash equivalent cannot be determined, the City of Owosso shall refer its recommendation through HUD to DOL for determination.

211. POSTING WAGE DETERMINATION DECISIONS AND AUTHORIZED WAGE DEDUCTIONS

The applicable wage poster of the Secretary of Labor, United States Department of Labor, and the applicable wage determination decisions of said Secretary of Labor with respect to the various classification of laborers and mechanics employed and to be employed upon the work covered by this Contract, and a statement showing all deductions, if any, in accordance with the provisions of this Contract, to be made from wages actually earned by persons so employed or to be employed in such classifications, shall be posted at appropriate conspicuous points at the site of the work.

212. COMPLAINTS, PROCEEDINGS, OR TESTIMONY BY EMPLOYEES

No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

213. CLAIMS AND DISPUTES PERTAINING TO WAGE RATES

Claims and disputes pertaining to wage rates or to classifications of laborers and mechanics employed upon the work covered by this Contract shall be promptly reported by the Contractor in writing to the City of Owosso for referral by the latter through the Secretary of Housing and Urban Development to the Secretary of Labor, United States Department of Labor, whose decision shall be final with respect thereto.

214. QUESTIONS CONCERNING FEDERAL STATUTES AND REGULATIONS

All questions arising under this Contract which relate to the application or interpretation of (a) the aforesaid Anti-Kickback Act, (b) the Contract Work Hours and Safety Standards Act, (c) the aforesaid Davis-Bacon Act, (d) the regulations issued by the Secretary of Labor, United States Department of Labor, pursuant to said Acts, or (e) the labor standards provisions of any other pertinent Federal statute, shall be referred, through the City of Owosso or Public Body and the Secretary of Housing and Urban Development, to the Secretary of Labor, United States Department of Labor, for said Secretary's appropriate ruling or interpretation which shall be authoritative and may be relied upon for the purposes of this Contract.

215. PAYROLLS AND BASIC PAYROLL RECORDS OF CONTRACTOR AND SUBCONTRACTORS

The Contractor and each subcontractor shall prepare his payrolls on forms satisfactory to and in accordance with the instructions to be furnished by the City of Owosso or Public Body. The Contractor shall submit weekly to the City of Owosso or Public Body two certified copies of all payrolls of the Contractor and of the subcontractors, it being understood that the Contractor shall be responsible for the submission of copies of payrolls of all subcontractors. Each such payroll shall contain the "Weekly Statement of Compliance" set forth in Section 3.3 of Title 29, Code of Federal Regulations. The payrolls and basic payroll records of the Contractor and each subcontractor covering all laborers and mechanics employed upon the work covered by this Contract shall be maintained during the course of the work and preserved for a period of 3 years thereafter. Such payrolls and basic payroll records shall contain the name and address of each such employee, his correct classification, rate of pay (including rates of contributions or costs anticipated of the types described in Section 1(b) (2) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. In addition, whenever the Secretary of Labor has found under Section 5.5(a) (iv) of Title 29. Code of Federal Regulations, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b) (2) (B) of the Davis-

Bacon Act, the Contractor or subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. The Contractor and each subcontractor shall make his employment records with respect to persons employed by him upon the work covered by this Contract available for inspection by authorized representatives of the Secretary of Housing and Urban Development, the City of Owosso or Public Body, and the United States Department of Labor. Such representatives shall be permitted to interview employees of the Contractor or of any subcontractor during working hours on the job.

216. SPECIFIC COVERAGE OF CERTAIN TYPES OF WORK BY EMPLOYEES

The transporting of materials and supplies to or from the site of the Project or Program to which this Contract pertains by the employees of the Contractor or of any subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the Project or Program to which this Contract pertains by persons employed by the Contractor or by any subcontractor shall, for the purposes of this Contract, and without limiting the generality of the foregoing provisions of this Contract, be deemed to be work to which these Federal Labor Standards Provisions are applicable.

217. INELIGIBLE SUBCONTRACTORS

The Contractor shall not subcontract any part of the work covered by this Contract or permit subcontracted work to be further subcontracted without the City of Owosso's prior written approval of the subcontractor. The City of Owosso will not approve any subcontractor for work covered by this Contract who is at the time ineligible under the provisions of any applicable regulations issued by the Secretary of Labor, United States Department of Labor or the Secretary of Housing and Urban Development, to receive an award of such subcontract.

218. PROVISIONS TO BE INCLUDED IN CERTAIN SUBCONTRACTS

The Contractor shall include or cause to be included in each subcontract covering any of the work covered by this Contract, provisions which are consistent with these Federal Labor Standards Provisions and also a clause requiring the subcontractors to include such provisions in any lower tier subcontracts which they may enter into, together with a clause requiring such insertion in any further subcontracts that may in turn be made.

219. BREACH OF FOREGOING FEDERAL LABOR STANDARDS PROVISIONS

In addition to the causes for termination of this Contract as herein elsewhere set forth, the City of Owosso reserves the right to terminate this Contract if the Contractor or any subcontractor whose subcontract covers any of the work covered by this Contract shall breach any of these Federal Labor Standards Provisions. A breach of these Federal Labor Standards Provisions may also be grounds for debarment as provided by the applicable regulations issued by the Secretary of Labor, United States Department of Labor.

RICK. SNYDER
GOVERNOR

STATE OF MICHIGAN

Prevailing Wages
PO Box 30476
Lansing, MI 48909
517-322-1825

Informational Sheet: Prevailing Wages on State Projects

REQUIREMENTS OF
THE PREVAILING WAGES ON STATE PROJECTS ACT, PUBLIC ACT 166 OF 1965

The State of Michigan determines prevailing rates pursuant to the Prevailing Wages on State Projects Act, Public Act 166 of 1965, as amended. The purpose of establishing prevailing rates is to provide minimum rates of pay that must be paid to workers on construction projects for which the state or a school district is the contracting agent and which is financed or financially supported by the state. By law, prevailing rates are compiled from the rates contained in collectively bargained agreements which cover the locations of the state projects. The official prevailing rate schedule provides an hourly rate which includes *wage and fringe benefit totals* for designated construction mechanic classifications. The overtime rates also include *wage and fringe benefit totals*. Please pay special attention to the overtime and premium pay requirements. Prevailing wage is satisfied when wages plus fringe benefits paid to a worker are equal to or greater than the required rate.

State of Michigan responsibilities under the law:

- The department establishes the prevailing rate for each classification of construction mechanic ***requested by a contracting agent*** prior to contracts being let out for bid on a state project.

Contracting agent responsibilities under the law:

- If a contract is not awarded or construction does not start within 90 days of the date of the issuance of rates, a re-determination of rates must be requested by the contracting agent.
- Rates for classifications needed but not provided on the Prevailing Rate Schedule, ***must*** be obtained ***prior*** to contracts being let out for bid on a state project.
- The contracting agent, by written notice to the contractor and the sureties of the contractor known to the contracting agent, may terminate the contractor's right to proceed with that part of the contract, for which less than the prevailing rates have been or will be paid, and may proceed to complete the contract by separate agreement with another contractor or otherwise, and the original contractor and his sureties shall be liable to the contracting agent for any excess costs occasioned thereby.

Contractor responsibilities under the law:

- Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing rates prescribed in a contract.
- Every contractor and subcontractor shall keep an accurate record showing the name and occupation of and the actual wages and benefits paid to each construction mechanic employed by him in connection including certified payroll, as used in the industry, with said contract. This record shall be available for reasonable inspection by the contracting agent or the department.
- Each contractor or subcontractor is separately liable for the payment of the prevailing rate to its employees.
- The prime contractor is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
- The prime contractor is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.
- A construction mechanic *shall only* be paid the apprentice rate if registered with the United States Department of Labor, Bureau of Apprenticeship and Training and the rate is included in the contract.

Enforcement:

A person who has information of an alleged prevailing wage violation on a state project may file a complaint with the State of Michigan. The department will investigate and attempt to resolve the complaint informally. During the course of an investigation, if the requested records and posting certification are not made available in compliance with Section 5 of Act 166, the investigation will be concluded and a referral to the Office of Attorney General for civil action will be made. The Office of Attorney General will pursue costs and fees associated with a lawsuit if filing is necessary to obtain records.

RICK. SNYDER
GOVERNOR

STATE OF MICHIGAN

Prevailing Wages
PO Box 30476
Lansing, MI 48909
517-322-1825

Informational Sheet: Prevailing Wages on State Projects

General Information Regarding Fringe Benefits

Certain fringe benefits **may** be credited toward the payment of the Prevailing Wage Rate:

- If a fringe benefit is paid directly to a construction mechanic
- If a fringe benefit contribution or payment is made on behalf of a construction mechanic
- If a fringe benefit, which may be provided to a construction mechanic**,** is pursuant to a written contract or policy
- If a fringe benefit is paid into a fund, for a construction mechanic

When a fringe benefit is not paid by an hourly rate, the hourly credit will be calculated based on the annual value of the fringe benefit divided by 2080 hours per year (52 weeks @ 40 hours per week).

The following is an example of the types of fringe benefits allowed and how an hourly credit is calculated:

Vacation	40 hours X $14.00 per hour = $560/2080 =	$.27
Dental insurance	$31.07 monthly premium X 12 mos. = $372.84 /2080 =	$.18
Vision insurance	$5.38 monthly premium X 12 mos. = $64.56/2080 =	$.03
Health insurance	$230.00 monthly premium X 12 mos. = $2,760.00/2080 =	$1.33
Life insurance	$27.04 monthly premium X 12 mos. = $324.48/2080 =	$.16
Tuition	$500.00 annual cost/2080 =	$.24
Bonus	4 quarterly bonus/year x $250 = $1000.00/2080 =	$.48
401k Employer Contribution	$2000.00 total annual contribution/2080 =	$.96
Total Hourly Credit		$3.65

Other examples of the types of fringe benefits allowed:

- Sick pay
- Holiday pay
- Accidental Death & Dismemberment insurance premiums

The following are examples of items that **will not** be credited toward the payment of the Prevailing Wage Rate

- Legally required payments, such as:
  - Unemployment Insurance payments
  - Workers' Compensation Insurance payments
  - FICA (Social Security contributions, Medicare contributions)
- Reimbursable expenses, such as:
  - Clothing allowance or reimbursement
  - Uniform allowance or reimbursement
  - Gas allowance or reimbursement
  - Travel time or payment
  - Meals or lodging allowance or reimbursement
  - Per diem allowance or payment
- Other payments to or on behalf of a construction mechanic that are not wages or fringe benefits, such as:
  - Industry advancement funds
  - Financial or material loans

STATE OF MICHIGAN

2015 MICHIGAN PREVAILING WAGE RATE SCHEDULE

For Parking Lot, Road, Highway, Bridge & Airport Construction

OPERATING ENGINEERS CLASSIFICATION DESCRIPTIONS

Class I

Asphalt Paver (self-propelled)
Asphalt Planer (self-propelled)
Asphalt Plant Operator
Auto-Grader
Blade Grader Operator
Batch Plant (concrete-central mix)
Backhoe (with over 3/8 yard bucket)
Bulldozer Operator
Concrete Pump 3" and over
Conveyor Loader Operator (euclid type)
Crane Operator
Dragline Operator
Elevating Grader Operator
End-loader Operator (1 yard capacity or over)
Slip Form Paver
Finishing Machine Operator (asphalt)
Gradall Operator (and similar type machines)
Hoisting Engineer
Hydro demolisher (water blaster)
Locomotive Operator
Mechanic
Paver Operator (5 bags or more)
Pump Operator (6" discharge or over, gas, diesel powered, or generator of 300 amp or larger)
Pile Driving Operator
Roto Mill
Roller Operator (Asphalt)
Side Boom Tractor (type D-4, equivalent or larger)
Self-Propelled or Tractor Drawn Scraper
Slurry Machine (asphalt)
Swinging Boom Truck (over l2 ton capacity)
Shouldering or Gravel Distributing Machine Operator (self-propelled)
Shovel Operator
Side Boom Tractor (type D-4 or equivalent or larger)
Tractor Operator
Trenching Machine Operator Tube
Finisher (slip form paving) Farm type tractor with attached pan

Class II

Sweeper (wayne type & similar equipment)
Screening Plant Operator
Washing Plant Operator
Crusher Operator
Vacuum Truck Operator
Backhoe (with 3/8 yard bucket or less)
Side Boom Tractor (smaller than D-4 type or equivalent)
Batch Plant (concrete-dry mix)

Class II

Grease Truck

Class III

Air Compressor Operator (600 cfm or more)
Air Compressor (2 or more, less than 600 cfm)
Concrete Breaker
Tractor Operator (farm type with attachments)
Wagon Drill Operator

Class IV

Boiler Fireman
Oiler
End-loader Operator (under 1 yard capacity)
Roller Operator (other than asphalt)
Curing Equipment Operator (self-propelled)
Concrete Saw Operator (Over 40 HP)
Power Bin Operator
Plant Drier Operator (asphalt)
Vibratory Compaction Equipment (6’ wide or over)
Guard Post Driver Operator
All Mulching Equipment
Boom or Winch Hoist Truck Operator
End Dumps
Stump Remover
Skid Steer
Fireman
Mechanic's Helper
Trencher (service)
Flexplane Operator
Cleftplane Operator
Grader Operator Self-propelled Fine-Grade or Form (concrete) Finishing Machine Operator (concrete) Concrete Pump (under 3”)
Farm Type Tractor Operator
Mesh Installer (self-propelled)

STATE OF MICHIGAN

2015 MICHIGAN PREVAILING WAGE RATE SCHEDULE

For Parking Lot, Road, Highway, Bridge & Airport Construction

LABORERS CLASSIFICATION DESCRIPTIONS

Class 1 Asphalt Shoveler or Loader, Asphalt Raker Tender, Asphalt Plant Misc., Railroad Track and Trestle Laborer, Burlap Man, Carpenter's Tender, Top Man, Yard Man, Guard Rail Builder's Tender, Earth Retention Barrier and Wall and Mechanically Stabilized Earthen Wall Installers Tender, Highway and Median Barrier Installer's Tender (including Sound, Retaining and Crash Barrier), Fence Erector's Tender, Dumper (wagon, truck, etc.) Joint Filling Labor, Misc., Unskilled Labor, Sprinkler Labor, Form Setting Labor, Form Stripper, Pavement Reinforcing, Handling and Placing (e.g. wire mesh, steel mats, dowel bars, etc.) Mason's or Bricklayer's Tender on Manholes, Manhole Builder, Headwalls, etc., Waterproofing (other than buildings), Seal Coating and Slurry Mix, Shoring, Underpinning, Bridge Painting, etc. (spray, roller and brush) Sandblasting, Pressure Grouting, and Bridge Pin and Hanger Removal, Material Recycling Laborer, Horizontal Paver (brick, concrete, clay, stone and asphalt) Ground Stabilization and Modification Laborer, Grouting, Waterblasting, Sign Installer and remote control operated equipment.

Class 2 Mix Operator (less than 5 sacks), Air or Electric Tool Operator (jack hammer, etc.), Spreader, Boxman (asphalt, stone, gravel, etc.), Concrete Paddler, Power Chain Saw Operator, Paving Batch Truck Dumper, Tunnel Mucker (highway work only), Concrete Saw Operator (under 40 H.P.), Dry Pack Machine and Roto-Mill Grounds Person.

Class 3 Tunnel Miner (highway work only), Finishers Tender, Guard Rail Builder, Highway and Median Barrier Installer, Fence Erector, Bottom Man, Powder Man, Wagon Drill and Air Track Operators, Curb and Side Rail Setters' Tender, Diamond & Core Drills, Earth Retention Barriers, Walls and Mechanically Stabilized Earthen Wall Installer (including sound, retaining and crash barrier), grade checker and certified welder.

Class 4 Asphalt Raker

Class 5 Pipe Layers, Oxy-gun

Class 6 Line-Form Setter for Curb or Pavement and asphalt screed checker/screw man on asphalt paving machines.

Class 7 Concrete Specialist, finishing and troweling, of cast in place or precast concrete by any and all methods.

STATE OF MICHIGAN

2015 MICHIGAN PREVAILING WAGE RATE SCHEDULE

For Parking Lot, Road, Highway, Bridge & Airport Construction

OVERTIME PROVISIONS FOR Road Builder PREVAILING WAGE RATE SCHEDULE

1. Overtime is represented as a nine character code. Each character represents a certain period of time after the first 8 hours Monday thru Friday.

	Monday thru Friday	Saturday	Sunday & Holidays	Four 10s
First 8 Hours		4	8	9
9th Hour	1	5		
10th Hour	2	6		
Over 10 hours	3	7		

Overtime for Monday thru Friday after 8 hours:
the 1st character is for time worked in the 9th hour *(8.1 - 9 hours)*
the 2nd character is for time worked in the 10th hour *(9.1 - 10 hours)*
the 3rd character is for time worked beyond the 10th hour *(10.1 and beyond)*

Overtime on Saturday:
the 4th character is for time worked in the first 8 hours on Saturday *(0 - 8 hours)*
the 5th character is for time worked in the 9th hour on Saturday *(8.1 - 9 hours)*
the 6th character is for time worked in the 10th hour *(9.1 - 10 hours)*
the 7th character is for time worked beyond the 10th hour *(10.01 and beyond)*

Overtime on Sunday & Holidays
the 8th character is for time worked on Sunday or on a holiday

4 Ten hour days @ Straight Time
The 9th character indicates if an optional 4-day 10-hour per day workweek can be worked between Monday and Friday without paying overtime after 8 hours worked. **To *utilize a 4 ten workweek, notice is required from the employer to employee prior to the start of work on the project.***

2. Overtime Indicators Used in the Overtime Provision:
H -means TIME AND ONE-HALF due
D -means DOUBLE PAY due
X means TIME AND ONE HALF due after 40 hours worked
Y means YES an optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked
N -means NO optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked

3. EXAMPLES:
HHHHHHDDY - This example shows that the 1½ rate must be used for time worked after 8 hours Monday thru Friday *(characters 1 - 3)*and for all hours worked on Saturday, *(characters 4 - 6),* except hours worked after 10 hours on Saturday *(7th character).* Work done after 10 hours must be paid at the double time rate. Work done on Sunday or holidays must be paid double time *(character 8).* The Y *(character 9)* indicates that 4 ten-hour days is an acceptable alternative workweek at regular pay.

HHHHHHHHY means that the 1½ rate must be used for time worked after 8 hours worked Monday thru Friday *(characters 1-3);* and for any hours worked on Saturdays, Sundays or holidays *(characters 4-8)*. The Y *(character 9)* indicates that 4 ten-hour days is an acceptable alternative workweek at regular pay.

XXHXXXHDY this example allows 4 ten hour days Monday thru Saturday to be worked. Hours worked beyond ten Monday thru Saturday OR hours worked after 40 hours in one week must be paid at time and one half. Sunday or holiday hours must be paid at double.

RICK. SNYDER
GOVERNOR

STATE OF MICHIGAN

Prevailing Wages
PO Box 30476
Lansing, MI 48909
517-284-7800

Informational Sheet: Prevailing Wages on State Projects

REQUIREMENTS OF
THE PREVAILING WAGES ON STATE PROJECTS ACT, PUBLIC ACT 166 OF 1965

The State of Michigan determines prevailing rates pursuant to the Prevailing Wages on State Projects Act, Public Act 166 of 1965, as amended. The purpose of establishing prevailing rates is to provide minimum rates of pay that must be paid to workers on construction projects for which the state or a school district is the contracting agent and which is financed or financially supported by the state. By law, prevailing rates are compiled from the rates contained in collectively bargained agreements which cover the locations of the state projects. The official prevailing rate schedule provides an hourly rate which includes *wage and fringe benefit totals* for designated construction mechanic classifications. The overtime rates also include *wage and fringe benefit totals*. Please pay special attention to the overtime and premium pay requirements. Prevailing wage is satisfied when wages plus fringe benefits paid to a worker are equal to or greater than the required rate.

State of Michigan responsibilities under the law:

- The department establishes the prevailing rate for each classification of construction mechanic ***requested by a contracting agent*** prior to contracts being let out for bid on a state project.

Contracting agent responsibilities under the law:

- If a contract is not awarded or construction does not start within 90 days of the date of the issuance of rates, a re-determination of rates must be requested by the contracting agent.
- Rates for classifications needed but not provided on the Prevailing Rate Schedule, ***must*** be obtained ***prior*** to contracts being let out for bid on a state project.
- The contracting agent, by written notice to the contractor and the sureties of the contractor known to the contracting agent, may terminate the contractor's right to proceed with that part of the contract, for which less than the prevailing rates have been or will be paid, and may proceed to complete the contract by separate agreement with another contractor or otherwise, and the original contractor and his sureties shall be liable to the contracting agent for any excess costs occasioned thereby.

Contractor responsibilities under the law:

- Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing rates prescribed in a contract.
- Every contractor and subcontractor shall keep an accurate record showing the name and occupation of and the actual wages and benefits paid to each construction mechanic employed by him in connection including certified payroll, as used in the industry, with said contract. This record shall be available for reasonable inspection by the contracting agent or the department.
- Each contractor or subcontractor is separately liable for the payment of the prevailing rate to its employees.
- The prime contractor is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
- The prime contractor is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.
- A construction mechanic *shall only* be paid the apprentice rate if registered with the United States Department of Labor, Bureau of Apprenticeship and Training and the rate is included in the contract.

Enforcement:

A person who has information of an alleged prevailing wage violation on a state project may file a complaint with the State of Michigan. The department will investigate and attempt to resolve the complaint informally. During the course of an investigation, if the requested records and posting certification are not made available in compliance with Section 5 of Act 166, the investigation will be concluded and a referral to the Office of Attorney General for civil action will be made. The Office of Attorney General will pursue costs and fees associated with a lawsuit if filing is necessary to obtain records.

RICK. SNYDER
GOVERNOR

MIOSHA
Michigan Occupational Safety and Health Administration

STATE OF MICHIGAN

Prevailing Wages
PO Box 30476
Lansing, MI 48909
517-284-7800

Informational Sheet: Prevailing Wages on State Projects

General Information Regarding Fringe Benefits

Certain fringe benefits **may** be credited toward the payment of the Prevailing Wage Rate:

- If a fringe benefit is paid directly to a construction mechanic
- If a fringe benefit contribution or payment is made on behalf of a construction mechanic
- If a fringe benefit, which may be provided to a construction mechanic**,** is pursuant to a written contract or policy
- If a fringe benefit is paid into a fund, for a construction mechanic

When a fringe benefit is not paid by an hourly rate, the hourly credit will be calculated based on the annual value of the fringe benefit divided by 2080 hours per year (52 weeks @ 40 hours per week).

The following is an example of the types of fringe benefits allowed and how an hourly credit is calculated:

Vacation	40 hours X $14.00 per hour = $560/2080 =	$.27
Dental insurance	$31.07 monthly premium X 12 mos. = $372.84 /2080 =	$.18
Vision insurance	$5.38 monthly premium X 12 mos. = $64.56/2080 =	$.03
Health insurance	$230.00 monthly premium X 12 mos. = $2,760.00/2080 =	$1.33
Life insurance	$27.04 monthly premium X 12 mos. = $324.48/2080 =	$.16
Tuition	$500.00 annual cost/2080 =	$.24
Bonus	4 quarterly bonus/year x $250 = $1000.00/2080 =	$.48
401k Employer Contribution	$2000.00 total annual contribution/2080 =	$.96
Total Hourly Credit		$3.65

Other examples of the types of fringe benefits allowed:

- Sick pay
- Holiday pay
- Accidental Death & Dismemberment insurance premiums

The following are examples of items that **will not** be credited toward the payment of the Prevailing Wage Rate

- Legally required payments, such as:
  - Unemployment Insurance payments
  - Workers' Compensation Insurance payments
  - FICA (Social Security contributions, Medicare contributions)
- Reimbursable expenses, such as:
  - Clothing allowance or reimbursement
  - Uniform allowance or reimbursement
  - Gas allowance or reimbursement
  - Travel time or payment
  - Meals or lodging allowance or reimbursement
  - Per diem allowance or payment
- Other payments to or on behalf of a construction mechanic that are not wages or fringe benefits, such as:
  - Industry advancement funds
  - Financial or material loans

State of Michigan
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
MARTHA B. YODER
DIRECTOR

OVERTIME PROVISIONS for MICHIGAN PREVAILING WAGE RATE COMMERCIAL SCHEDULE

1. Overtime is represented as a nine character code. Each character represents a certain period of time after the first 8 hours Monday thru Friday.

	Monday thru Friday	Saturday	Sunday & Holidays	Four 10s
First 8 Hours		**4**	**8**	**9**
9th Hour	**1**	**5**		
10th Hour	**2**	**6**		
Over 10 hours	**3**	**7**		

Overtime for Monday thru Friday after 8 hours:
the 1st character is for time worked in the 9th hour *(8.1 - 9 hours)*
the 2nd character is for time worked in the 10th hour *(9.1 - 10 hours)*
the 3rd character is for time worked beyond the 10th hour *(10.1 and beyond)*

Overtime on Saturday:
the 4th character is for time worked in the first 8 hours on Saturday *(0 - 8 hours)*
the 5th character is for time worked in the 9th hour on Saturday *(8.1 - 9 hours)*
the 6th character is for time worked in the 10th hour *(9.1 - 10 hours)*
the 7th character is for time worked beyond the 10th hour *(10.01 and beyond)*

Overtime on Sundays & Holidays
The 8th character is for time worked on Sunday or on a holiday

Four Ten Hour Days
The 9th character indicates if an optional 4-day 10-hour per day workweek can be worked ***between Monday and Friday*** **without paying overtime after 8 hours worked, unless otherwise noted in the rate schedule. To *utilize a 4 ten workweek, notice is required from the employer to employee prior to the start of work on the project.***

2. Overtime Indicators Used in the Overtime Provision:
H - means TIME AND ONE-HALF due
X - means TIME AND ONE-HALF due after 40 HOURS worked
D - means DOUBLE PAY due
Y - means YES an optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked
N - means NO an optional 4-day 10-hour per day workweek *can not* be worked without paying overtime after 8 hours worked

3. EXAMPLES:
HHHHHHHDN - This example shows that the 1½ rate must be used for time worked after 8 hours Monday thru Friday *(characters 1 - 3);* for all hours worked on Saturday, 1½ rate is due *(characters 4 - 7).* Work done on Sundays or holidays must be paid double time *(character 8).* The N *(character 9)* indicates that 4 ten-hour days is not an acceptable workweek at regular pay.

XXXHHHHDY - This example shows that the 1½ rate must be used for time worked after 40 hours are worked Monday thru Friday *(characters 1-3);* for hours worked on Saturday, 1½ rate is due *(characters 4 – 7)*. Work done on Sundays or holidays must be paid double time *(character 8).* The Y *(character 9)* indicates that 4 ten-hour days is an acceptable alternative workweek.

ENGINEERS - CLASSES OF EQUIPMENT LIST

UNDERGROUND ENGINEERS

CLASS I

Backfiller Tamper, Backhoe, Batch Plant Operator, Clam-Shell, Concrete Paver (2 drums or larger), Conveyor Loader (Euclid type), Crane (crawler, truck type or pile driving), Dozer, Dragline, Elevating Grader, End Loader, Gradall (and similar type machine), Grader, Power Shovel, Roller (asphalt), Scraper (self propelled or tractor drawn), Side Broom Tractor (type D-4 or larger), Slope Paver, Trencher (over 8' digging capacity), Well Drilling Rig, Mechanic, Slip Form Paver, Hydro Excavator.

CLASS II

Boom Truck (power swing type boom), Crusher, Hoist, Pump (1 or more 6" discharge or larger gas or diesel powered by generator of 300 amps 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' digging capacity and smaller), Vac Truck.

CLASS III

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, ½ yard or larger), Elevator (other than passenger), Maintenance Man, Mechanic Helper, Pump (2 or more 4" up to 6" discharge, gas or diesel powered, excluding submersible pump), Pumpcrete Machine (and similar equipment), Wagon Drill Machine, Welding Machine or Generator (2 or more 300 amp or larger, gas or diesel powered).

CLASS IV

Boiler, Concrete Saw (40HP or over), Curing Machine (self-propelled), Farm Tractor (w/attachment), Finishing Machine (concrete), Firemen, Hydraulic Pipe Pushing Machine, Mulching Equipment, Oiler (2 or more up to 4", exclude submersible), Pumps (2 or more up to 4" discharge if used 3 hrs or more a day-gas or diesel powered, excluding submersible pumps), Roller (other than asphalt), Stump Remover, Vibrating Compaction Equipment (6' wide or over), Trencher (service) Sweeper (Wayne type and similar equipment), Water Wagon, Extend-a-Boom Forklift.

HAZARDOUS WASTE ABATEMENT ENGINEERS

CLASS I

Backhoe, Batch Plant Operator, Clamshell, Concrete Breaker when attached to hoe, Concrete Cleaning Decontamination Machine Operator, Concrete Pump, Concrete Paver, Crusher, Dozer, Elevating Grader, Endloader, Farm Tractor (90 h.p. and higher), Gradall, Grader, Heavy Equipment Robotics Operator, Hydro Excavator, Loader, Pug Mill, Pumpcrete Machines, Pump Trucks, Roller, Scraper (self-propelled or tractor drawn), Side Boom Tractor, Slip Form Paver, Slope Paver, Trencher, Ultra High Pressure Waterjet Cutting Tool System Operator, Vactors, Vacuum Blasting Machine Operator, Vertical Lifting Hoist, Vibrating Compaction Equipment (self-propelled), and Well Drilling Rig.

CLASS II

Air Compressor, Concrete Breaker when not attached to hoe, Elevator, End Dumps, Equipment Decontamination Operator, Farm Tractor (less than 90 h.p.), Forklift, Generator, Heater, Mulcher, Pigs (Portable Reagent Storage Tanks), Power Screens, Pumps (water), Stationary Compressed Air Plant, Sweeper, Water Wagon and Welding Machine.

State of Michigan

WHPWRequest@michigan.gov

General Request 349
Requestor: City of Owosso
Project Description: General Information
Project Number: MDOT 128988A: Attachment B

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name	Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
CARPENTERS							
CARPENTERS ZONE 1		RBCZ1	**WAGE**	$29.00	$43.50		X X H X X X H H Y
			FRINGE	$26.30	$35.35		
	Apprentice Rates:						
	1ST 6 MONTHS		**WAGE**	$12.76	$19.14		
			FRINGE	$16.17	$20.15		
	2ND 6 MONTHS		**WAGE**	$15.95	$23.92		
			FRINGE	$18.16	$23.14		
	YEAR 2		**WAGE**	$18.85	$28.28		
			FRINGE	$19.97	$25.85		
	YEAR 3		**WAGE**	$21.75	$32.62		
			FRINGE	$21.78	$28.57		
	YEAR 4		**WAGE**	$24.65	$36.98		
			FRINGE	$23.58	$31.27		

CARPENTERS ZONE 1
Wayne, Oakland, Macomb, Sanilac, St. Clair, Monroe and the following townships of Livingston County Brighton, Deerfield, Genoa, Hartland, Osceola and Tyrone

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
CARPENTERS ZONE 2	RBCZ2	**WAGE**	$26.16	$39.24		X X H X X X H H
Y		**FRINGE**	$18.45	$18.45		
Apprentice Rates:						
1ST YEAR		**WAGE**	$15.70	$23.55		
		FRINGE	$18.45	$18.45		
2ND YEAR		**WAGE**	$18.31	$27.46		
		FRINGE	$18.45	$18.45		
3RD YEAR		**WAGE**	$20.93	$31.40		
		FRINGE	$18.45	$18.45		
4TH YEAR		**WAGE**	$22.24	$33.36		
		FRINGE	$18.45	$18.45		

CARPENTERS ZONE 2
The entire state except those counties and townships listed in Zone 1

CEMENT MASONS

CEMENT MASONS ZONE 1	RBCMZ1	**WAGE**	$30.19	$45.29		X X H X X H H H
Y		**FRINGE**	$12.84	$12.84		
Apprentice Rates:						
1ST YEAR		**WAGE**	$17.71	$26.56		
		FRINGE	$12.84	$12.84		
2ND YEAR		**WAGE**	$21.84	$32.76		
		FRINGE	$12.84	$12.84		
3RD YEAR		**WAGE**	$25.98	$38.97		
		FRINGE	$12.84	$12.84		

CEMENT MASONS ZONE 1
Genesee, Oakland, Macomb, Monroe, Washtenaw, Wayne, Livingston and Saginaw Counties.

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name	Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
CEMENT MASONS ZONE 2		RBCMZ2	**WAGE**	$28.69	$43.04		X X H X X H H H Y
			FRINGE	$12.84	$12.84		
	Apprentice Rates:						
	1ST YEAR		**WAGE**	$16.88	$25.32		
			FRINGE	$12.84	$12.84		
	2ND YEAR		**WAGE**	$20.83	$31.24		
			FRINGE	$12.84	$12.84		
	3RD YEAR		**WAGE**	$25.00	$37.50		
			FRINGE	$12.84	$12.84		
CEMENT MASONS ZONE 2 All counties not listed in Zone 1							
IRONWORKER							
Metal Fence & Guard Rail		IR-55-MF	**WAGE**	$20.00	$30.00	$40.00	H H D H H H H D Y
			FRINGE	$19.87	$29.81	$39.74	

Lenawee Monroe

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
IRONWOKERS ZONE 1: Fence, sound barrier and guardrail erection/installation work, and exterior signage work.	RBIRZ1	**WAGE**	$24.00	$36.00	$48.00	X X H X X X H D Y
		FRINGE	$10.65	$10.65	$10.65	
Apprentice Rates:						
60%		**WAGE**	$14.40	$21.60	$28.80	
		FRINGE	$9.85	$9.85	$9.85	
65%		**WAGE**	$15.60	$23.40	$31.20	
		FRINGE	$9.95	$9.95	$9.95	
70%		**WAGE**	$16.80	$25.20	$33.60	
		FRINGE	$10.06	$10.06	$10.06	
75%		**WAGE**	$18.00	$27.00	$36.00	
		FRINGE	$10.15	$10.15	$10.15	
80%		**WAGE**	$19.20	$28.80	$38.40	
		FRINGE	$10.25	$10.25	$10.25	
85%		**WAGE**	$20.40	$30.60	$40.80	
		FRINGE	$10.35	$10.35	$10.35	

IRONWORKERS ZONE 1
Genesee, Oakland, Macomb, Washtenaw and Wayne Counties

IRONWORKERS ZONE 2: Fence, sound barrier and guardrail erection/installation work, and exterior signage work.	RBIRZ2	**WAGE**	$20.00	$30.00	$40.00	X X H X X X H D Y
		FRINGE	$10.71	$10.71	$10.71	
Apprentice Rates:						
60%		**WAGE**	$12.00	$18.00	$24.00	
		FRINGE	$8.35	$8.35	$8.35	
65%		**WAGE**	$13.00	$19.50	$26.00	
		FRINGE	$8.45	$8.45	$8.45	
70%		**WAGE**	$14.00	$21.00	$28.00	
		FRINGE	$8.56	$8.56	$8.56	
75%		**WAGE**	$15.00	$22.50	$30.00	
		FRINGE	$8.65	$8.65	$8.65	
80%		**WAGE**	$16.00	$24.00	$32.00	
		FRINGE	$8.75	$8.75	$8.75	
85%		**WAGE**	$17.00	$25.50	$34.00	
		FRINGE	$8.85	$8.85	$8.85	

IRONWORKERS ZONE 2
The entire state except those counties listed in Zone 1:Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne and Lenawee

General Request #: 349
Requestor: City of Owosso
Project Description: General Information
Project Number:

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS						
LABORERS CLASS 1 ZONE 1	RBLABC1Z1	**WAGE**	$22.10	$33.15		X X X X X X X H
Y						
		FRINGE	$15.96	$17.44		
	Apprentice Rates:					
	0-1000 WORK HOURS	**WAGE**	$16.58	$24.87		
		FRINGE	$15.96	$17.44		
	1001-2000 WORK HOURS	**WAGE**	$17.68	$26.52		
		FRINGE	$15.96	$17.44		
	2001-3000 WORK HOURS	**WAGE**	$18.78	$28.17		
		FRINGE	$15.96	$17.44		
	3001-4000 WORK HOURS	**WAGE**	$20.99	$31.48		
		FRINGE	$15.96	$17.44		
LABORERS ZONE 1 Genesee, Macomb, Monroe, Oakland, Washtenaw and Wayne						
LABORERS CLASS 1 ZONE 2	RBLABC1Z2	**WAGE**	$20.26	$30.39		X X X X X X X H
Y						
		FRINGE	$15.75	$17.15		
	Apprentice Rates:					
	0-1000 WORK HOURS	**WAGE**	$15.20	$22.80		
		FRINGE	$15.75	$17.15		
	1001-2000 WORK HOURS	**WAGE**	$16.21	$24.32		
		FRINGE	$15.75	$17.15		
	2001-3000 WORK HOURS	**WAGE**	$17.22	$25.83		
		FRINGE	$15.75	$17.15		
	3001-4000 WORK HOURS	**WAGE**	$19.25	$28.88		
		FRINGE	$15.75	$17.15		
LABORERS ZONE 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						

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 1 ZONE 3 & 4	RBLABC1Z3	**WAGE**	$19.51	$29.27		X X X X X X X H Y
		FRINGE	$15.75	$17.15		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$14.63	$21.94		
		FRINGE	$15.75	$17.15		
1001-2000 WORK HOURS		**WAGE**	$15.61	$23.42		
		FRINGE	$15.75	$17.15		
2001-3000 WORK HOURS		**WAGE**	$16.58	$24.87		
		FRINGE	$15.75	$17.15		
3001-4000 WORK HOURS		**WAGE**	$18.53	$27.80		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS ZONE 4
Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 2 ZONE 1	RBLABC2Z1	**WAGE**	$22.23	$33.35		X X X X X X X H Y
		FRINGE	$15.96	$17.44		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$16.67	$25.00		
		FRINGE	$15.96	$17.44		
1001-2000 WORK HOURS		**WAGE**	$17.78	$26.67		
		FRINGE	$15.96	$17.44		
2001-3000 WORK HOURS		**WAGE**	$18.90	$28.35		
		FRINGE	$15.96	$17.44		
3001-4000 WORK HOURS		**WAGE**	$21.12	$31.68		
		FRINGE	$15.96	$17.44		

LABORERS ZONE 1
Genesee, Macomb, Monroe, Oakland, Washtenaw and Wayne

General Request #: 349
Requestor: City of Owosso
Project Description: General Information
Project Number:

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 2 ZONE 2	RBLABC2Z2	**WAGE**	$20.46	$30.69		X X X X X X X H
Y		**FRINGE**	$15.75	$17.15		
	Apprentice Rates:					
	0-1000 WORK HOURS	**WAGE**	$15.34	$23.01		
		FRINGE	$15.75	$17.15		
	1001-2000 WORK HOURS	**WAGE**	$16.37	$24.56		
		FRINGE	$15.75	$17.15		
	2001-3000 WORK HOURS	**WAGE**	$17.39	$26.08		
		FRINGE	$15.75	$17.15		
	3001-4000 WORK HOURS	**WAGE**	$19.44	$29.16		
		FRINGE	$15.75	$17.15		
LABORERS ZONE 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						
LABORERS CLASS 2 ZONES 3 & 4	RBLABC2Z4	**WAGE**	$19.72	$29.58		X X X X X X X H
Y		**FRINGE**	$15.75	$17.15		
	Apprentice Rates:					
	0-1000 WORK HOURS	**WAGE**	$14.79	$22.18		
		FRINGE	$15.75	$17.15		
	1001-2000 WORK HOURS	**WAGE**	$15.78	$23.67		
		FRINGE	$15.75	$17.15		
	2001-3000 WORK HOURS	**WAGE**	$16.76	$25.14		
		FRINGE	$15.75	$17.15		
	3001-4000 WORK HOURS	**WAGE**	$18.73	$28.10		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS ZONE 4
Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 3 ZONE 1	RBLABC3Z1	**WAGE**	$22.41	$33.62		X X X X X X X H Y
		FRINGE	$15.96	$17.44		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$16.81	$25.22		
		FRINGE	$15.96	$17.44		
1001-2000 WORK HOURS		**WAGE**	$17.93	$26.90		
		FRINGE	$15.96	$17.44		
2001-3000 WORK HOURS		**WAGE**	$19.05	$28.58		
		FRINGE	$15.96	$17.44		
3001-4000 WORK HOURS		**WAGE**	$21.29	$31.94		
		FRINGE	$15.96	$17.44		
LABORERS ZONE 1 Genesee, Macomb, Monroe, Oakland, Washtenaw and Wayne						
LABORERS CLASS 3 ZONE 2	RBLABC3Z2	**WAGE**	$20.70	$31.05		X X X X X X X H Y
		FRINGE	$15.75	$17.15		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$15.52	$23.28		
		FRINGE	$15.75	$17.15		
1001-2000 WORK HOURS		**WAGE**	$16.56	$24.84		
		FRINGE	$15.75	$17.15		
2001-3000 WORK HOURS		**WAGE**	$17.60	$26.40		
		FRINGE	$15.75	$17.15		
3001-4000 WORK HOURS		**WAGE**	$19.66	$29.49		
		FRINGE	$15.75	$17.15		
LABORERS ZONE 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						

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 3 ZONES 3 & 4	RBLABC3Z3	**WAGE**	$20.01	$30.02		X X X X X X X H Y
		FRINGE	$15.75	$17.15		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$15.01	$22.52		
		FRINGE	$15.75	$17.15		
1001-2000 WORK HOURS		**WAGE**	$16.01	$24.02		
		FRINGE	$15.75	$17.15		
2001-3000 WORK HOURS		**WAGE**	$17.01	$25.52		
		FRINGE	$15.75	$17.15		
3001-4000 WORK HOURS		**WAGE**	$19.01	$28.52		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS ZONE 4
Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 4 ZONE 1	RBLABC4Z1	**WAGE**	$22.49	$33.74		X X X X X X X H Y
		FRINGE	$15.96	$17.44		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$16.87	$25.30		
		FRINGE	$15.96	$17.44		
1001-2000 WORK HOURS		**WAGE**	$17.99	$26.98		
		FRINGE	$15.96	$17.44		
2001-3000 WORK HOURS		**WAGE**	$19.12	$28.68		
		FRINGE	$15.96	$17.44		
3001-4000 WORK HOURS		**WAGE**	$21.37	$32.06		
		FRINGE	$15.96	$17.44		

LABORERS ZONE 1
Genesee, Macomb, Monroe, Oakland, Washtenaw and Wayne

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 4 ZONE 2	RBLABC4Z2	**WAGE**	$21.05	$31.58		X X X X X X X H
Y		**FRINGE**	$15.75	$17.15		
	Apprentice Rates:					
	0-1000 WORK HOURS	**WAGE**	$15.79	$23.68		
		FRINGE	$15.75	$17.15		
	1001-2000 WORK HOURS	**WAGE**	$16.84	$25.26		
		FRINGE	$15.75	$17.15		
	2001-3000 WORK HOURS	**WAGE**	$17.89	$26.84		
		FRINGE	$15.75	$17.15		
	3001-4000 WORK HOURS	**WAGE**	$20.00	$30.00		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS CLASS 4 ZONES 3 & 4	RBLABC4Z3	**WAGE**	$20.45	$30.68		X X X X X X X H
Y		**FRINGE**	$15.75	$17.15		
	Apprentice Rates:					
	0-1000 WORK HOURS	**WAGE**	$15.34	$23.01		
		FRINGE	$15.75	$17.15		
	1001-2000 WORK HOURS	**WAGE**	$16.36	$24.54		
		FRINGE	$15.75	$17.15		
	2001-3000 WORK HOURS	**WAGE**	$17.38	$26.07		
		FRINGE	$15.75	$17.15		
	3001-4000 WORK HOURS	**WAGE**	$19.43	$29.14		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS ZONE 4
Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name	Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 5 ZONE 1		RBLABC5Z1	**WAGE**	$22.70	$34.05		X X X X X X X H
Y			**FRINGE**	$15.96	$17.44		
	Apprentice Rates:						
	0-1000 WORK HOURS		**WAGE**	$17.02	$25.53		
			FRINGE	$15.96	$17.44		
	1001-2000 WORK HOURS		**WAGE**	$18.16	$27.24		
			FRINGE	$15.96	$17.44		
	2001-3000 WORK HOURS		**WAGE**	$19.29	$28.94		
			FRINGE	$15.96	$17.44		
	3001-4000 WORK HOURS		**WAGE**	$21.56	$32.34		
			FRINGE	$15.96	$17.44		
LABORERS ZONE 1 Genesee, Macomb, Monroe, Oakland, Washtenaw and Wayne							
LABORERS CLASS 5 ZONE 2		RBLABC5Z2	**WAGE**	$20.92	$31.38		X X X X X X X H
Y			**FRINGE**	$15.75	$17.15		
	Apprentice Rates:						
	0-1000 WORK HOURS		**WAGE**	$15.69	$23.54		
			FRINGE	$15.75	$17.15		
	1001-2000 WORK HOURS		**WAGE**	$16.74	$25.11		
			FRINGE	$15.75	$17.15		
	2001-3000 WORK HOURS		**WAGE**	$17.78	$26.67		
			FRINGE	$15.75	$17.15		
	3001-4000 WORK HOURS		**WAGE**	$19.87	$29.80		
			FRINGE	$15.75	$17.15		
LABORERS ZONE 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							

General Request #: 349
Requestor: City of Owosso
Project Description: General Information
Project Number:

2015 Road Builder Prevailing Wage Rates for State Funded Projects

GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 5 ZONES 3 & 4	RBLABC5Z3	**WAGE**	$20.07	$30.11		X X X X X X X H Y
		FRINGE	$15.75	$17.15		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$15.05	$22.58		
		FRINGE	$15.75	$17.15		
1001-2000 WORK HOURS		**WAGE**	$16.06	$24.09		
		FRINGE	$15.75	$17.15		
2001-3000 WORK HOURS		**WAGE**	$17.06	$25.59		
		FRINGE	$15.75	$17.15		
3001-4000 WORK HOURS		**WAGE**	$19.07	$28.60		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS ZONE 4
Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 6 ZONE 1	RBLABC6Z1	**WAGE**	$23.00	$34.50		X X X X X X X H Y
		FRINGE	$15.96	$17.44		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$17.25	$25.88		
		FRINGE	$15.96	$17.44		
1001-2000 WORK HOURS		**WAGE**	$18.40	$27.60		
		FRINGE	$15.96	$17.44		
2001-3000 WORK HOURS		**WAGE**	$19.55	$29.32		
		FRINGE	$15.96	$17.44		
3001-4000 WORK HOURS		**WAGE**	$21.85	$32.78		
		FRINGE	$15.96	$17.44		

LABORERS ZONE 1
Genesee, Macomb, Monroe, Oakland, Washtenaw and Wayne

General Request #: 349
Requestor: City of Owosso
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2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 6 ZONE 2	RBLABC6Z2	**WAGE**	$21.26	$31.89		X X X X X X X H
Y		**FRINGE**	$15.75	$17.15		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$15.94	$23.91		
		FRINGE	$15.75	$17.15		
1001-2000 WORK HOURS		**WAGE**	$17.01	$25.52		
		FRINGE	$15.75	$17.15		
2001-3000 WORK HOURS		**WAGE**	$18.07	$27.10		
		FRINGE	$15.75	$17.15		
3001-4000 WORK HOURS		**WAGE**	$20.20	$30.30		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS CLASS 6 ZONES 3 & 4	RBLABC6Z3	**WAGE**	$20.50	$30.75		X X X X X X X H
Y		**FRINGE**	$15.75	$17.15		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$15.38	$23.07		
		FRINGE	$15.75	$17.15		
1001-2000 WORK HOURS		**WAGE**	$16.40	$24.60		
		FRINGE	$15.75	$17.15		
2001-3000 WORK HOURS		**WAGE**	$17.42	$26.13		
		FRINGE	$15.75	$17.15		
3001-4000 WORK HOURS		**WAGE**	$19.47	$29.20		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS ZONE 4
Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
LABORERS CLASS 7 ZONES 2, 3, 4	RBLABC72	**WAGE**	$23.83	$35.75		X X X X X X X H
Y		**FRINGE**	$15.75	$17.15		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$17.87	$26.80		
		FRINGE	$15.75	$17.15		
1001-2000 WORK HOURS		**WAGE**	$19.06	$28.59		
		FRINGE	$15.75	$17.15		
2001-3000 WORK HOURS		**WAGE**	$20.26	$30.39		
		FRINGE	$15.75	$17.15		
3001-4000 WORK HOURS		**WAGE**	$22.64	$33.96		
		FRINGE	$15.75	$17.15		

LABORERS ZONE 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

LABORERS ZONE 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

LABORERS ZONE 4
Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

LABORERS CLASS 7 ZONE 1	RBLABC7Z1	**WAGE**	$24.07	$36.11		X X X X X X X H
Y		**FRINGE**	$15.96	$17.44		
Apprentice Rates:						
0-1000 WORK HOURS		**WAGE**	$18.05	$27.08		
		FRINGE	$15.96	$17.44		
10001-2000 WORK HOURS		**WAGE**	$19.26	$28.89		
		FRINGE	$15.96	$17.44		
2001-3000 WORK HOURS		**WAGE**	$20.46	$30.69		
		FRINGE	$15.96	$17.44		
3001-4000 WORK HOURS		**WAGE**	$22.87	$34.30		
		FRINGE	$15.96	$17.44		

LABORERS ZONE 1
Genesee, Macomb, Monroe, Oakland, Washtenaw and Wayne

General Request #: 349
Requestor: City of Owosso
Project Description: General Information
Project Number:

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name	Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
OPERATING ENGINEERS							
OPERATING ENGINEERS CLASS I ZONE 1& 2 Y		RBOEC1Z1	**WAGE**	$27.10	$40.65		H H H H H H H H
			FRINGE	$26.57	$28.60		
	Apprentice Rates:						
	1ST 6 MONTHS		**WAGE**	$18.97	$28.46		
			FRINGE	$25.57	$27.60		
	2ND 6 MONTHS		**WAGE**	$20.32	$30.48		
			FRINGE	$25.57	$27.60		
	3RD 6 MONTHS		**WAGE**	$21.68	$32.52		
			FRINGE	$25.57	$27.60		
	4TH 6 MONTHS		**WAGE**	$23.04	$34.56		
			FRINGE	$25.57	$27.60		
	5TH 6 MONTHS		**WAGE**	$24.39	$36.58		
			FRINGE	$25.57	$27.60		
	6TH 6 MONTHS		**WAGE**	$25.74	$38.61		
			FRINGE	$25.57	$27.60		
OPERATING ENGINEERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne counties	OPERATING ENGINEERS ZONE 2 The entire state except those counties listed in Zone 1:Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne						
OPERATING ENGINEERS CLASS II ZONE 1 Y		RBOEC2Z1	**WAGE**	$21.24	$31.86		H H H H H H H H
			FRINGE	$25.70	$27.30		
OPERATING ENGINEERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne counties							
OPERATING ENGINEERS GREASE TRUCK CLASS II ZONE Y 1		RBOEC2Z1GT	**WAGE**	$22.37	$33.56		H H H H H H H H
			FRINGE	$25.87	$27.55		
OPERATING ENGINEERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne counties							

General Request #: 349
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2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
OPERATING ENGINEERS CLASS 2 ZONE 2 Y	RBOEC2Z2	**WAGE**	$21.11	$31.67		H H H H H H H H
		FRINGE	$25.68	$27.27		
OPERATING ENGINEERS ZONE 2 The entire state except those counties listed in Zone 1:Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne						
OPERATING ENGINEERS GREASE TRUCK CLASS 2 ZONE Y 2	RBOEC2Z2GT	**WAGE**	$22.24	$33.36		H H H H H H H H
		FRINGE	$25.85	$27.52		
OPERATING ENGINEERS ZONE 2 The entire state except those counties listed in Zone 1:Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne						
OPERATING ENGINEERS CLASS III ZONE 1 Y	RBOEC3Z1	**WAGE**	$20.76	$31.14		H H H H H H H H
		FRINGE	$25.62	$27.18		
OPERATING ENGINEERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne counties						
OPERATING ENGINEERS CLASS III ZONE 2 Y	RBOEC3Z2	**WAGE**	$20.63	$30.95		H H H H H H H H
		FRINGE	$25.60	$27.15		
OPERATING ENGINEERS ZONE 2 The entire state except those counties listed in Zone 1:Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne						
OPERATING ENGINEERS CLASS IV ZONE 1 Y	RBOEC4Z1	**WAGE**	$20.61	$30.92		H H H H H H H H
		FRINGE	$25.60	$27.15		
OPERATING ENGINEERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne counties						

General Request #: 349
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Project Description: General Information
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2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
OPERATING ENGINEERS CLASS IV ZONE 2 Y	RBOEC4Z2	**WAGE**	$20.35	$30.53		H H H H H H H H
		FRINGE	$25.56	$27.09		
OPERATING ENGINEERS ZONE 2 The entire state except those counties listed in Zone 1:Genesee, Oakland, Macomb, Monroe, Washtenaw and Wayne						
Pipe and Manhole Rehab General Laborer for rehab work or normal cleaning and cctv N work-top man, scaffold man, CCTV assistant, jetter-vac assistant	TM247	**WAGE**	$19.99	$29.99		H H H H H H H H
		FRINGE	$8.21	$8.21		
Statewide						
Tap cutter/CCTV Tech/Grout Equipment Operator: unit driver N and operator of CCTV; grouting equipment and tap cutting equipment	TM247-2	**WAGE**	$24.49	$36.74		H H H H H H H H
		FRINGE	$8.21	$8.21		
Statewide						
CCTV Technician/Combo Unit Operator: unit driver and N operator of cctv unit or combo unit in connection with normal cleaning and televising work	TM247-3	**WAGE**	$23.24	$34.86		H H H H H H H H
		FRINGE	$8.21	$8.21		
Statewide						
Boiler Operator: unit driver and operator of steam/water heater N units and all ancillary equipment associated	TM247-4	**WAGE**	$24.99	$37.49		H H H H H H H H
		FRINGE	$8.21	$8.21		
Statewide						

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
Combo Unit driver & Jetter-Vac Operator	TM247-5	**WAGE**	$24.99	$37.49		H H H H H H H H N
		FRINGE	$8.21	$8.21		
Statewide						
Pipe Bursting & Slip-lining Equipment Operator	TM247-6	**WAGE**	$25.99	$38.99		H H H H H H H H N
		FRINGE	$8.21	$8.21		
Statewide						
Roadway Electrical						
Signal Tech, Communication Tech, Tower Tech, Fiber Optic Splicer	EC-17	**WAGE**	$36.97	$55.46	$73.94	H H H H H H H D Y
		FRINGE	$15.61	$20.79	$25.97	
Apprentice Rates:						
1st 6 months		**WAGE**	$22.18	$33.27	$44.36	
		FRINGE	$11.47	$14.58	$17.69	
2nd 6 months		**WAGE**	$24.03	$36.04	$48.06	
		FRINGE	$11.98	$15.35	$18.71	
3rd 6 months		**WAGE**	$25.88	$38.82	$51.76	
		FRINGE	$12.50	$16.13	$19.75	
4th 6 months		**WAGE**	$27.73	$41.60	$55.46	
		FRINGE	$13.02	$16.91	$20.79	
5th 6 months		**WAGE**	$29.58	$44.37	$59.16	
		FRINGE	$13.54	$17.69	$21.83	
6th 6 months		**WAGE**	$33.27	$49.90	$66.54	
		FRINGE	$14.58	$19.25	$23.91	
Statewide						

General Request #: 349
Requestor: City of Owosso
Project Description: General Information
Project Number:

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name / Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
Operator A - operates at least 3 of the following: backhoe, excavator, directional bore or boom/digger truck.	EC-17A	**WAGE**	$31.32	$46.98	$62.64	H H H H H H H D Y
		FRINGE	$14.03	$18.42	$22.81	
Road Builder Statewide						
Operator B - operates any 2 of the following: backhoe, excavator, directional bore or boom/digger truck	EC-17B D	**WAGE**	$29.27	$43.91	$58.54	H H H H H H H Y
		FRINGE	$13.46	$17.57	$21.67	
Apprentice Rates:						
		WAGE	$0.00	$0.00		
		FRINGE		$0.00		
Road Builder Statewide						
Groundman	EC-17G	**WAGE**	$27.24	$40.86	$54.48	H H H H H H H D Y
		FRINGE	$12.89	$16.71	$20.53	
TRUCK DRIVERS						
TRUCK DRIVERS ZONE 1 EUCLID TYPE EQUIPMENT	TD1	**WAGE**	$25.15	$37.73		H H H H H H H H Y
		FRINGE	$18.43	$10.99		
TRUCK DRIVERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Livingston, Washtenaw and Wayne						
TRUCK DRIVERS ZONE 2 EUCLID TYPE EQUIPMENT	TD2	**WAGE**	$25.05	$37.58		H H H H H H H H Y
		FRINGE	$18.43	$10.99		
TRUCK DRIVERS ZONE 2 The entire state except those counties listed in Zone 1: Genesee, Oakland, Macomb, Monroe, Livingston, Washtenaw and Wayne						

General Request #: 349
Requestor: City of Owosso
Project Description: General Information
Project Number:

2015 Road Builder Prevailing Wage Rates for State Funded Projects
GENERAL INFORMATION

Classification Name	Description			Straight Hourly	Time and a Half	Double Time	Overtime Provision
TRUCK DRIVERS ZONE 1	8 YARD CAPACITY OR Y GREATER	TD81	**WAGE**	$25.00	$37.50		H H H H H H H H
			FRINGE	$18.43	$10.99		
TRUCK DRIVERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Livingston, Washtenaw and Wayne							
TRUCK DRIVERS ZONE 2	8 YARD CAPACITY OR Y GREATER	TD82	**WAGE**	$24.90	$37.35		H H H H H H H H
			FRINGE	$18.43	$10.99		
TRUCK DRIVERS ZONE 2 The entire state except those counties listed in Zone 1: Genesee, Oakland, Macomb, Monroe, Livingston, Washtenaw and Wayne							
TRUCK DRIVERS ZONE 1	ALL TRUCKS OF 8 CUBIC Y YARD CAPACITY OR LESS (except dump trucks of 8 cubic yard capacity or over, tandem axle trucks, transit mix and semis, euclid type equipment, double bottoms and low boys)	TD91	**WAGE**	$24.90	$37.35		H H H H H H H H
			FRINGE	$18.43	$10.99		
TRUCK DRIVERS ZONE 1 Genesee, Oakland, Macomb, Monroe, Livingston, Washtenaw and Wayne							
TRUCK DRIVERS ZONE 2	8 CUBIC YARD CAPACITY OR Y LESS (except dump trucks of 8 cubic yard capacity or over, tandem axle trucks, transit mix and semis, euclid type equipment, double bottoms and low boys)	TD92	**WAGE**	$24.80	$37.20		H H H H H H H H
			FRINGE	$18.43	$10.99		
TRUCK DRIVERS ZONE 2 The entire state except those counties listed in Zone 1: Genesee, Oakland, Macomb, Monroe, Livingston, Washtenaw and Wayne							

SPECIAL PROVISION
FOR
TECHNICAL SPECIFICATIONS

GENERAL REQUIREMENT

The 2012 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION shall govern all technical specifications for this project. The following parts of the Contract will prevail over all other parts in the following order:

A. Special Provisions.
B. Supplemental Specifications.
C. Project Plans and Drawings.
D. MDOT Standard Plans.
E. 2012 MDOT Standard Specifications.
F. City of Owosso Standard Specifications for Construction.

The Contractor shall not take advantage of any apparent error or omission in the contract documents. If any uncertainty, inconsistency, omission, or conflict is discovered in the contract documents, the Engineer will solely decide as to the true intent of the language.

PROGRESS CLAUSE

Start work within ten (10) days after receiving Notice of Award of Contract, or on the date agreed upon with the Engineer. In no case shall any work be commenced prior to receipt of formal notice of award by the City of Owosso.

Completion Dates:

All contract work shall begin no earlier than June 13, 2016 after the conclusion of the 2015-2016 school year.

All contract work including turf establishment seeding must be completed and fully open to traffic no later than July 29, 2016.

The entire project, including the acceptance of turf establishment, must be completed on or before the final project completion date of October 14, 2016.

The Low Bidder for the work covered by this proposal will be required to prepare and submit Form 1130, Progress Schedule to the Engineer within seven (7) calendar days of confirmation by the City of Owosso, of the low bid. The progress schedule must be approved by the Project Engineer.

The Progress Schedule shall include, as a minimum, the controlling work items for the completion of the project and the planned dates that these work items will be controlling operations. When specified in the bidding Proposal, the date the project is to be opened to traffic, as well as the final project completion date, shall also be included in the Project Schedule.

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

The Project Engineer will arrange the time and place for the preconstruction meeting after contract award.

The named subcontractor(s) for Designated and/or Specialty Items, as shown in the Proposal, is recommended to be at 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.

NOTICE TO BIDDERS

UTILITY COORDINATION

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 Michigan Department of Transportation 2012 Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 109.05.E of the Michigan Department of Transportation 2012 Standard Specifications for Construction.

The following Public Utilities have facilities located in the road right-of-way or project area:

NAME AND ADDRESS OF OWNER	KIND OF UTILITY	PHONE NUMBER
Charter Communication 737 W. Main Street Owosso, Michigan 48867	Cable Television	(810) 725-0520 David Kelly
Frontier 224 W. Exchange Street Owosso, Michigan 48867	Telephone	(989) 723-0373 Mark Stevens
Consumers Energy 530 West Willow Street Lansing, Michigan 48906	Gas	(517) 374-2375 Doug Furman
Consumers Energy 530 West Willow Street Lansing, Michigan 48906	Electric	(517) 374-2329 Jacob Chalut
City of Owosso Water Dept. 301 W. Main Street Owosso, Michigan 48867	Water	(989) 725-0520 Gary Burk
City of Owosso Sewer Dept. 301 W. Main Street Owosso, Michigan 48867	Sanitary Sewer	(989) 725-0520 Gary Burk
Great Lakes Central Railroad 600 Oakwood Avenue Owosso, MI 48867	Railroad	(989) 666-2706 Mark Russell msrussell@ glcrailroad.com
City Engineer 301 W. Main Street Owosso, Michigan 48867	Road and Storm Drainage	(989) 725-0553 Randy Chesney, P.E.

The owners of existing service facilities that are within grading or structure limits and in conflict will move them to locations designated by the Construction Engineer or will remove them entirely from the highway Right-of-Way. Owners of Public Utilities will not be required by the City of Owosso to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Construction 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 item.

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.

UTILITY REPLACEMENTS

Consumers Energy anticipates replacing their existing 4" S-MP main near the easterly curb line of Gould Street between Jerome Avenue and East Main Street (M-21). All work is anticipated to be completed prior to the contract work start date identified in the progress clause.

The City of Owosso anticipates water main replacement of the Jerome Avenue, Grover Street, and East Comstock Street connections to the City's supply main beneath Gould Street. All work is anticipated to be completed prior to the contract work start date identified in the progress clause.

CITY OF OWOSSO

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

GENERAL

Advance construction warning signs shall be established and placed in accordance with Sections 104.07, 104.11 and 812 of the Michigan Department of Transportation's *Standard Specifications for Construction*, 2012 edition, including any *Supplemental Specifications,* and in accordance with the 2011 *Michigan Manual of Uniform Traffic Control Devices*, as stated in the plans and as herein specified.

CONSTRUCTION INFLUENCE AREA

The Construction Influence Area (CIA) shall consist of existing right of way and shall extend from the POB to the POE and ½ mile southerly and northerly of the project to warn of the construction ahead. The CIA shall also extend 150 feet along all intersection side streets.

TRAFFIC RESTRICTIONS

The Contractor shall not be permitted to have full width road closure at any time. A minimum of one lane shall be open to traffic in each direction.

Single lane closures for the removal and replacement of concrete curb and gutter, sidewalks, sidewalk ramps, and restoration shall be in accordance with Maintaining Traffic Typical M0250a. The Contractor shall not be permitted to work on both sides of the road at the same time.

Contractor shall maintain access to all driveways for commercial businesses at all times.

Any equipment stored on site shall be outside the traveled way for local traffic and clearly demarcated with plastic drums or other means as necessary. The Contractor shall provide written authorization from any private property owner prior to staging materials or equipment on private property.

No work shall be performed during the July 4th holiday period.

All work shall be conducted during day time hours only between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday. Night work shall be permitted only at the direction of the Construction Engineer. Any additional costs for maintaining traffic during night time hours and additional equipment needed for night work shall be borne by the Contractor.

Rubbish collection is done by private contractors between the hours of 7:00 a.m. and 7:00 p.m. according to the following schedule: All residential customers north of Main Street are serviced on Thursdays. All residential customers south of Main Street are serviced on Tuesdays. Rubbish collected at commercial properties is collected any time/day. The Contractor shall

schedule work to allow and provide access for refuse contractors to provide their service to the residential and commercial properties. If the refuse contractors are unable to collect materials due to construction operations, then the Contractor shall coordinate with the refuse contractors the moving of containers to a collection site and returning same containers to the property owner.

SPECIAL CONSIDERATIONS AT RAILROAD CROSSING

The Contractor must contact Great Lakes Central Railroad in accordance with the COORDINATION OF WORK NEAR RAILROAD CROSSINGS special provision prior to starting work in the vicinity of the tracks.

CONSTRUCTION SEQUENCE

The following construction staging sequence has been developed.

Before beginning construction, the Contractor shall implement temporary erosion control measures and traffic control. Temporary erosion control and traffic control shall be maintained for the duration of the project.

Phase I
Close westerly most lane (outer south bound traffic) in accordance with MDOT Maintaining Traffic Typical M0250a. Complete curb and gutter repair, sidewalk repair, driveway replacement, guardrail improvements, berm removal, and turf establishment.

Phase II
Close easterly most lane (outer north bound traffic) in accordance with MDOT Maintaining Traffic Typical M0250a. Complete curb and gutter repair, sidewalk repair, driveway replacement, storm sewer installation, guardrail improvements, Allendale Avenue intersection improvements, berm removal, and turf establishment.

Phase III
Setup detour route for through traffic in accordance with detour route plan. Maintain local traffic by shifting all traffic to westerly side of road (existing south bound traffic) and maintaining one lane of traffic in each direction in accordance with MDOT Maintaining Traffic Detail M0310a. Complete cold milling, joint repairs, structure adjustments, and HMA leveling course on easterly one-half of roadway.

Phase IV
Maintain detour route for through traffic in accordance with detour route plan. Maintain local traffic by shifting all traffic to easterly side of road (existing north bound traffic) and maintaining one lane of traffic in each direction in accordance with MDOT maintaining traffic detail M0310a. Complete cold milling, joint repairs, structure adjustments, and HMA leveling course on westerly one-half of roadway.

Phase V
Maintain one lane of traffic in each direction and complete HMA top course through the use of traffic regulator control. Complete paving of all lanes on one side of bridge and then the other. Complete pavement markings, permanent signing, and remove temporary soil erosion control measures.

TRAFFIC CONTROL DEVICES

All traffic control devices and their usage shall conform to the *Michigan Manual of Uniform Traffic Control Devices* (MMUTCD), 2011 edition and as amended and shown on the plans or proposal.

Provide temporary construction signing as indicated in the plans. All diamond-shaped warning signs shall be (48 in by 48 in) mounted at a 7-foot minimum bottom height.

Sign posts shall be 3 pounds per foot. Cost for sign posts shall be included in the sign item.

Channelizing devices shall be plastic drums at 50 foot spacing in parallel areas and 25 foot spacing in taper areas or as directed by the Construction Engineer.

All open excavations shall be delineated with plastic drums as directed by the Construction Engineer.

Flashing lights shall be used to call attention to advance warning signs.

Traffic shall not be allowed on milled surfaces.

Distances shown between construction warning, regulatory and guide signs shown on the typicals are approximate and may require field adjustment, as directed by the Construction Engineer. The Contractor is responsible for staking the location of the signs.

The following MDOT Maintaining Traffic Typicals are to be followed on this project:

WZD-100-A:	Ground Driven Sign Supports for Temporary Signs
WZD-125-E:	Temporary Traffic Control Devices
M0020a:	Tables for 'L', 'D' and 'B' Values
M0040a:	G20 series, Injure Kill, Double Fine Advance Signing Treatment on an undivided roadway
M0250a:	One-lane closure on an undivided multi-lane roadway using a single step down in speed limit in one direction only.
M0310a:	Typical temporary traffic control for closing one-half of a four-lane undivided roadway using a single step down in speed limit.

The Contractor shall remove, salvage and reinstall street signs, along with their supports, that presently exist within the construction limits of this project and conflict with improvements unless otherwise indicated. The Contractor shall maintain critical traffic control signs, such as stop signs, during construction as directed by Construction Engineer. This work shall be included in the pay item “Minor Traf Devices”.

Signage locations shown in the plans are schematic. The Contractor shall stake sign locations based on standard offsets and spacing as modified to avoid obstructions for review by the Construction Engineer and adjustment as needed by the Contractor prior to contacting Miss Dig.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The completed work as measured for all the contract items included in maintaining traffic described above will be paid for at the contract unit prices per Section 812.04 of the MDOT 2012 Standard Specifications for Construction.

The cost of constructing commercial driveways part width to maintain access shall be considered included in the contract prices for all contract items pertaining to maintaining traffic as herein specified.

Payment for temporary signs, plastic drums, and barricades will be made on the maximum number of units in place at any one time during the entire project, as determined by the Construction Engineer.

The contract items will be measured by units either per foot, per each, per square foot, or per lump sum, which price shall be payment in full for all material, labor, and equipment needed to accomplish the work as detailed on the traffic control plan, as herein specified, and as directed by the Construction Engineer.

CITY OF OWOSSO
MDOT MAINTAINING TRAFFIC TYPICALS

9/22/15

At a minimum the following Michigan Department of Transportation Maintaining Traffic Typicals shall be followed for this project (others may be necessary as directed by the Construction Engineer at no additional cost to the project):

MINIMUM MERGING TAPER LENGTH "L" (FEET)

OFFSET	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
FEET	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	TAPER LENGTH
UPSTREAM TAPERS	
MERGING TAPER	L - MINIMUM
SHIFTING TAPER	1/2 L - MINIMUM
SHOULDER TAPER	1/3 L - MINIMUM
TWO-WAY TRAFFIC TAPER	100 ' - MAXIMUM
DOWNSTREAM TAPERS (USE IS OPTIONAL)	100 ' - MINIMUM (PER LANE)

MDOT Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC TYPICAL

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

DRAWN BY: CON:AE:djf	JUNE 2006 PLAN DATE:	M0020a	SHEET 1 OF 2
CHECKED BY: BMM			
FILE: K:/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.

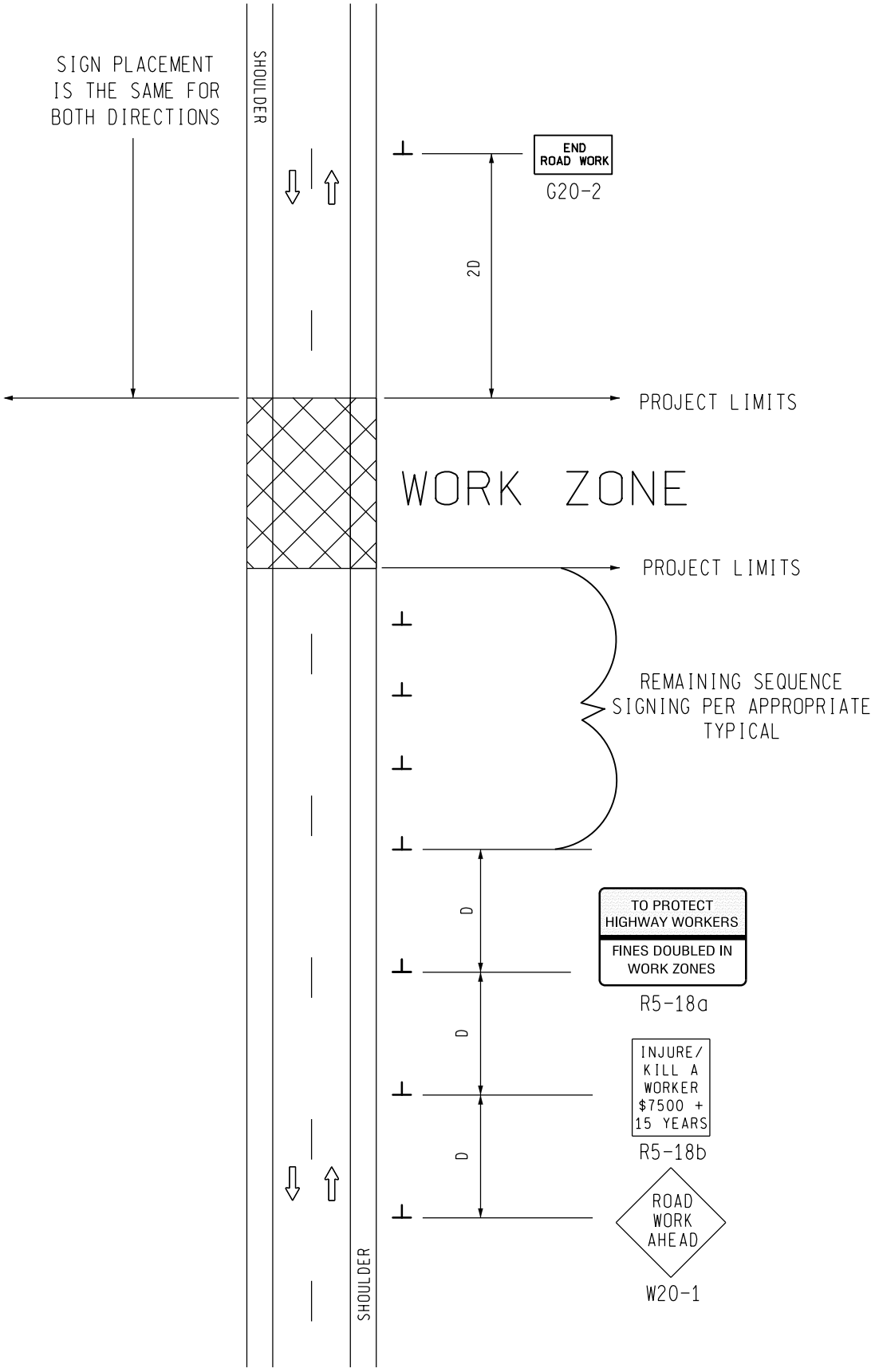
MDOT Michigan Department of Transportation

TRAFFIC AND SAFETY

MAINTAINING TRAFFIC TYPICAL

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

DRAWN BY: CON:AE:djf	JUNE 2006	M0020a	SHEET 2 OF 2
CHECKED BY: BMM	PLAN DATE:		
FILE: K:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn	REV. 08/21/2006		



SIGN = 68 ft2 - TYPE B
FOR ONE DIRECTION OF TRAFFIC
W20-1 QUANTITY INCLUDED
WITH APPROPRIATE TYPICAL
FOR SEQUENCE SIGNING

NOT TO SCALE

MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF LESS THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0040a	SHEET 1 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 10/13/2011			

NOTES

30. THE APPROPRIATE ADVANCE SIGNING SEQUENCE(S), (M0030a THROUGH M0080a) SHALL BE USED ON ALL PROJECTS.

32. THESE SIGNS SHALL BE LEFT IN PLACE AT THEIR PRESCRIBED LOCATIONS FOR THE DURATION OF THE PROJECT AND UNTIL ALL TEMPORARY TRAFFIC CONTROL HAS BEEN REMOVED.

35. THESE SIGNS ARE INTENDED TO BE USED WITHIN THE LIMITS OF THE TEMPORARY SEQUENCE SIGNING AS IS SHOWN ON 1 OF 2. THESE SIGNS ARE NOT TO BE INTERMINGLED WITH ANY OTHER TEMPORARY SEQUENCE SIGNING EXCEPT AS SHOWN.

SIGN SIZES

G20-2	-	48" x 24"
R5-18a	-	96" x 60"
R5-18b	-	48" x 60"
W20-1	-	48" x 48"

NOT TO SCALE

MDOT Michigan Department of Transportation

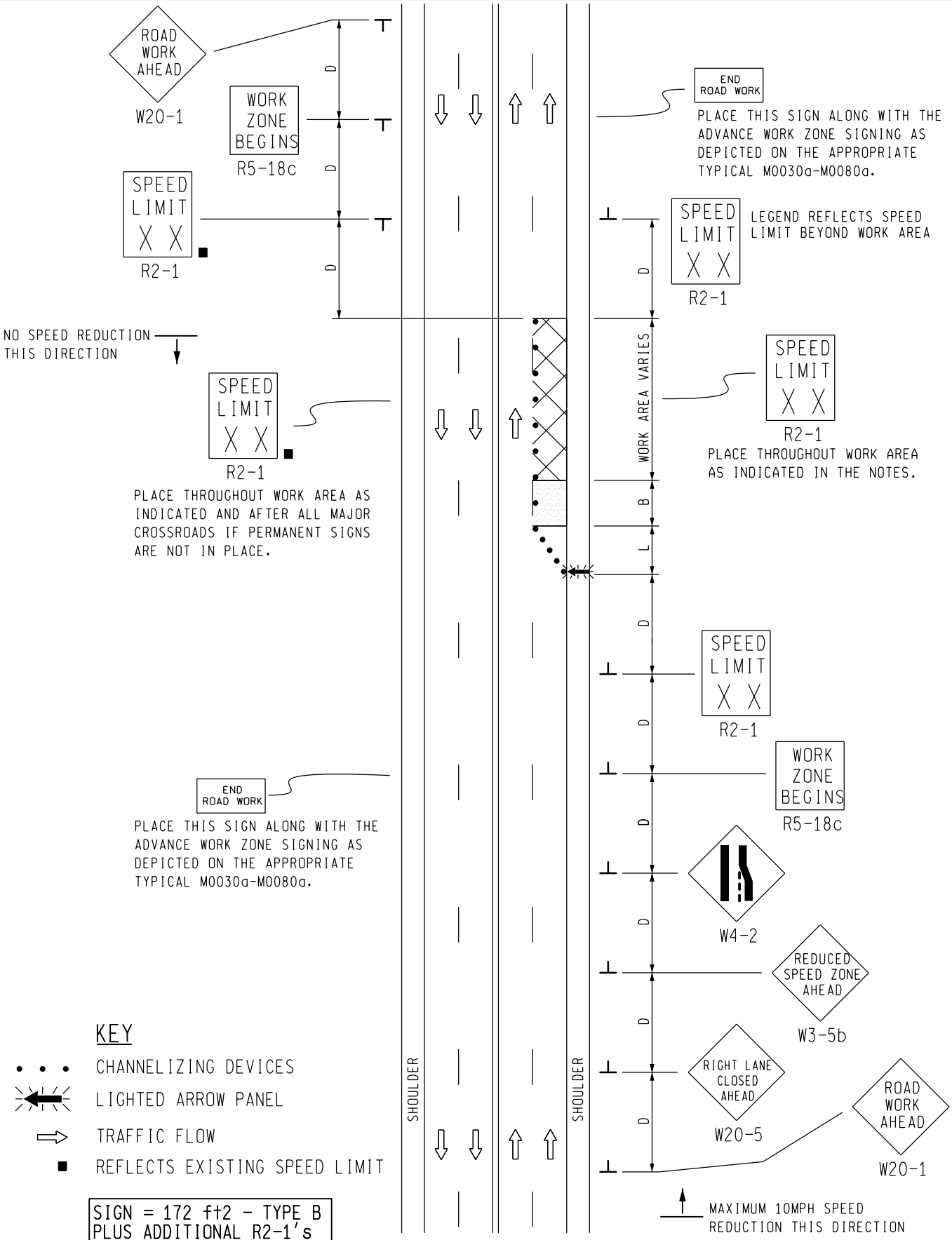
TRAFFIC AND SAFETY

MAINTAINING TRAFFIC TYPICAL

TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF LESS THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0040a	SHEET 2 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 10/13/2011



MDOT Michigan Department of Transportation

TRAFFIC AND SAFETY

MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR A ONE-LANE CLOSURE ON AN UNDIVIDED MULTI-LANE ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0250a	SHEET 1 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0250a.dgn REV. 10/11/2011

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.

16A. ADDITIONAL SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED SHALL BE PLACED AFTER EACH MAJOR CROSSROAD THAT INTERSECTS THE WORK AREA WHERE THE REDUCED SPEED IS IN EFFECT, AND AT INTERVALS ALONG THE ROADWAY SUCH THAT NO SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED ARE MORE THAN TWO MILES APART.

16B. WHEN REDUCED SPEED LIMITS ARE UTILIZED IN THE WORK AREA, ADDITIONAL SPEED LIMIT SIGNS RETURNING TRAFFIC TO ITS NORMAL SPEED SHALL BE PLACED BEYOND THE LIMITS OF THE REDUCED SPEED AS INDICATED.

16E. WHEN EXISTING SPEED LIMITS ARE REDUCED MORE THAN 10 MPH, THE SPEED LIMIT SHALL BE STEPPED DOWN IN NO MORE THAN 10 MPH INCREMENTS.

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"
RECTANGULAR REGULATORY	- 48" x 60"
R5-18c REGULATORY	- 48" x 48"

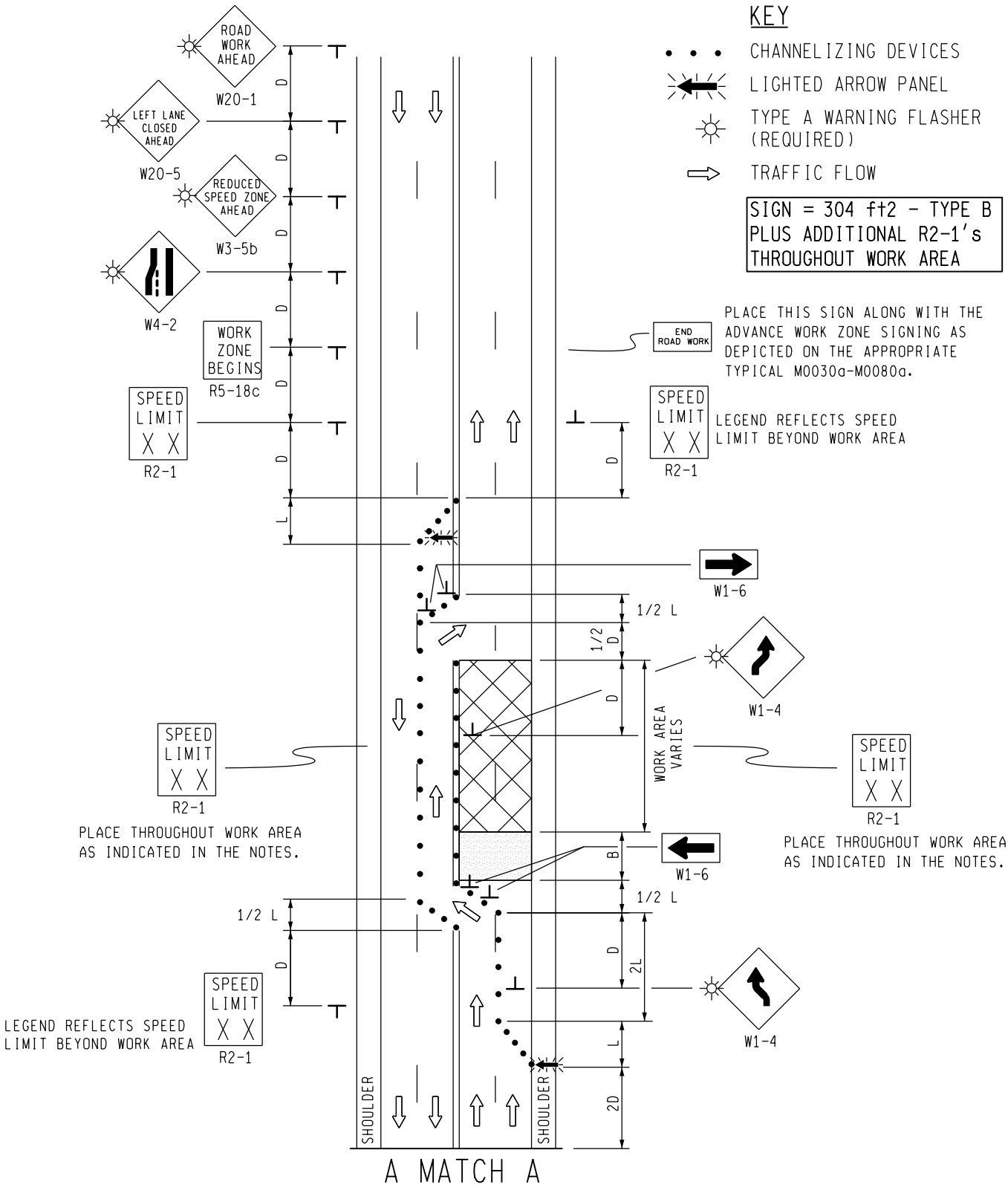
NOT TO SCALE

MDOT Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR A ONE-LANE CLOSURE ON AN UNDIVIDED MULTI-LANE ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0250a	SHEET 2 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0250a.dgn REV. 10/11/2011

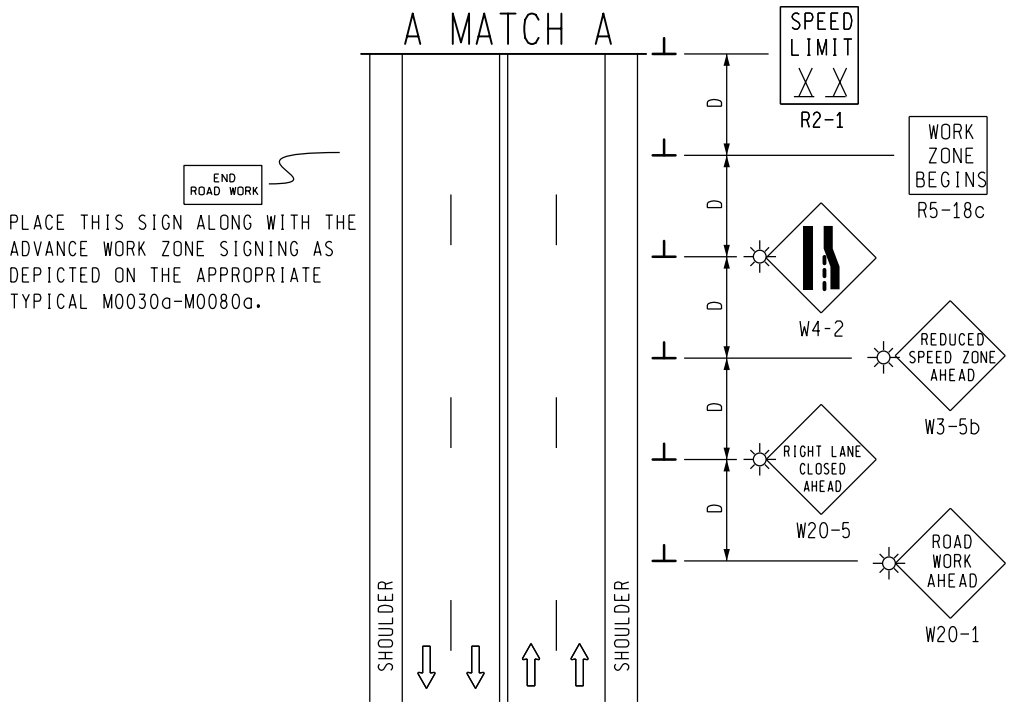


NOT TO SCALE

MDOT Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE-HALF OF A FOUR-LANE UNDIVIDED ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0310a	SHEET 1 OF 3
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: K:-DGN-TSR-STDS-ENGLISH-MNTTRF-M0310a.dgn	REV. 10/18/2011		



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

NOT TO SCALE

MDOT Michigan Department of Transportation

TRAFFIC AND SAFETY

MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE-HALF OF A FOUR-LANE UNDIVIDED ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0310a	SHEET 2 OF 3
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: K:-DGN-TSR-STDS-ENGLISH-MNTTRF-M0310a.dgn	REV. 10/18/2011		

NOTES

1C. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
L & 1/2 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. 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.

16A. ADDITIONAL SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED SHALL BE PLACED AFTER EACH MAJOR CROSSROAD THAT INTERSECTS THE WORK AREA WHERE THE REDUCED SPEED IS IN EFFECT, AND AT INTERVALS ALONG THE ROADWAY SUCH THAT NO SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED ARE MORE THAN TWO MILES APART.

16B. WHEN REDUCED SPEED LIMITS ARE UTILIZED IN THE WORK AREA, ADDITIONAL SPEED LIMIT SIGNS RETURNING TRAFFIC TO ITS NORMAL SPEED SHALL BE PLACED BEYOND THE LIMITS OF THE REDUCED SPEED AS INDICATED.

16E. WHEN EXISTING SPEED LIMITS ARE REDUCED MORE THAN 10 MPH, THE SPEED LIMIT SHALL BE STEPPED DOWN IN NO MORE THAN 10 MPH INCREMENTS.

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"
W1-6 WARNING	- 48" x 24"
RECTANGULAR REGULATORY	- 48" x 60"
R5-18c REGULATORY	- 48" x 48"

NOT TO SCALE

MDOT Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE-HALF OF A FOUR-LANE UNDIVIDED ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0310a	SHEET 3 OF 3
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: K:-DGN-TSR-STDS-ENGLISH-MNTTRF-M0310a.dgn	REV. 10/18/2011		

SIGN MATERIAL SELECTION TABLE

	SIGN MATERIAL TYPE		
SIGN SIZE	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 IOR IISIGNS.
VERTICAL JOINTS ARE NOT PERMITTED.
HORIZONTIAL JOINTS THROUGH SIGN LEGEND OR SYMBOLS ARE NOT PERMITTED.

POST SIZE REQUIREMENTS TABLE

	POST TYPE		
SIGN AREA (ft^2)	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.

NOT TO SCALE

File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY SUPPORT AREA

DRAWN BY: CON/ECH

CHECKED BY: AUG

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

PENDING
FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS

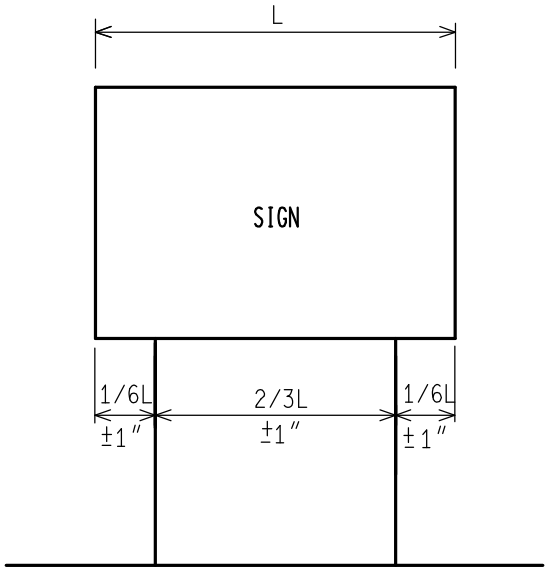
8/2006
PLAN DATE

WZD-100-A

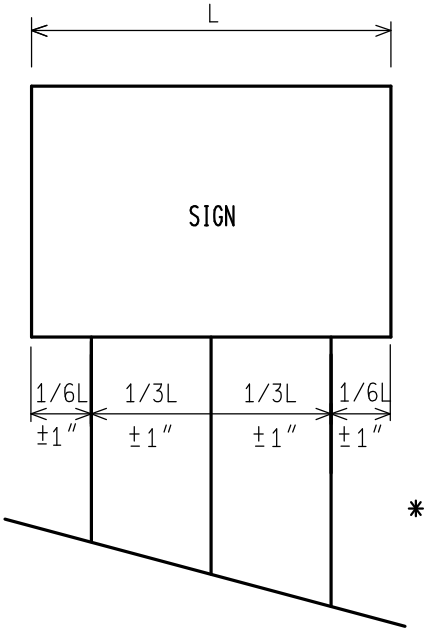
SHEET 1 of11

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

2 POST SIGN SUPPORT SPACING



3 POST SIGN SUPPORT SPACING

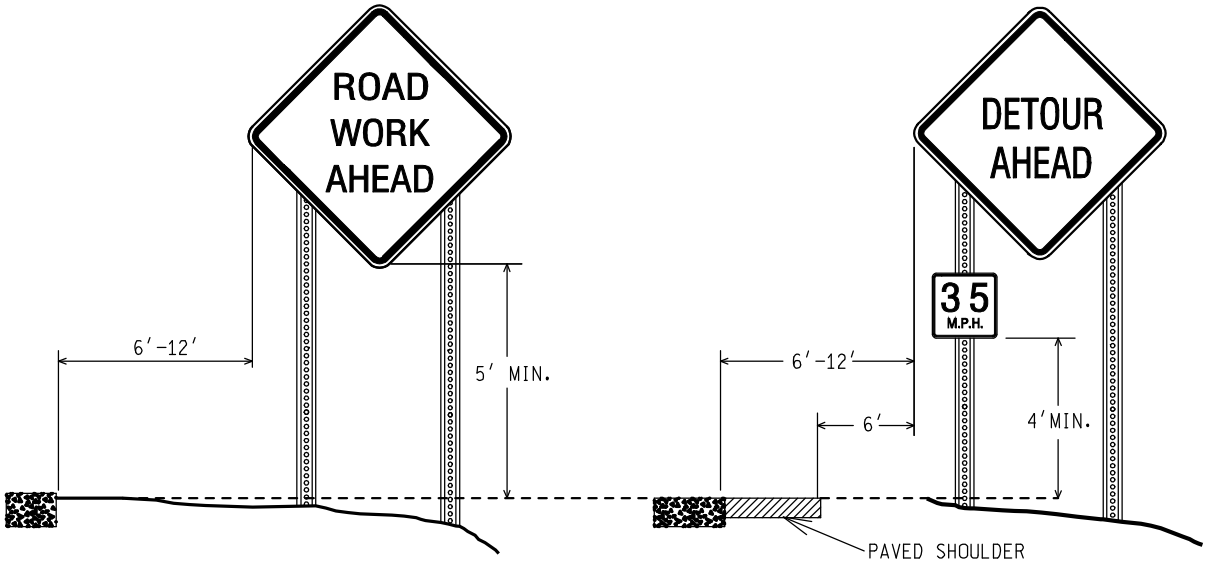


* FOR ALL 11' AND 12' LONG SIGNS ON 3 WOOD SUPPORTS, SPREAD POSTS SO AS TO HAVE A 8' MIN. TO 9' MAX. DISTANCE BETWEEN OUTSIDE POSTS.

NOT TO SCALE

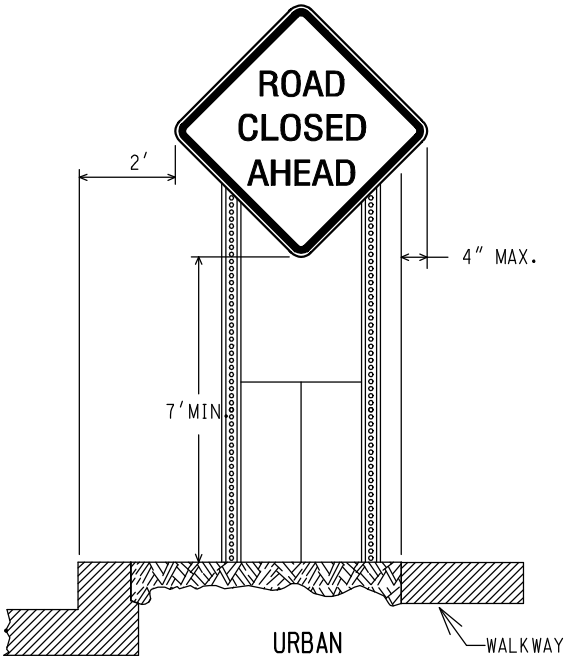
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 2 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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

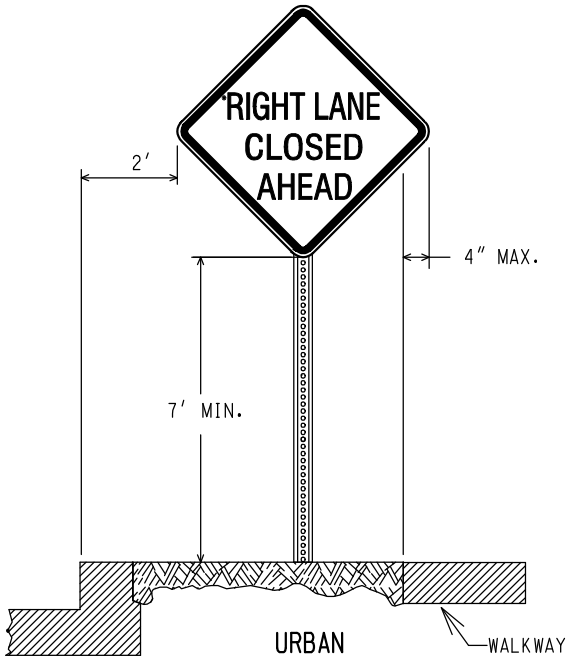


RURAL

RURAL WITH ADVISORY
SPEED PLATE



(CURBED AREAS OR WHERE
WALKWAYS ARE PRESENT)



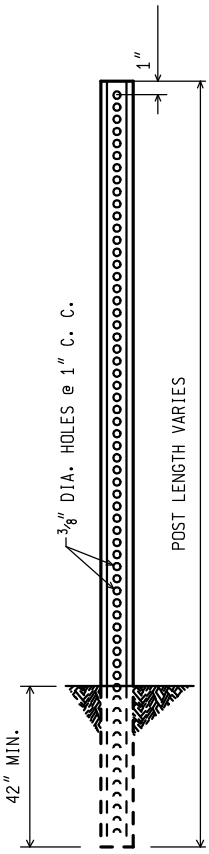
(CURBED AREAS OR WHERE
WALKWAYS ARE PRESENT)

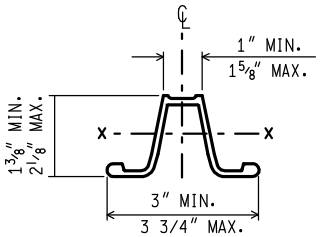
BOTTOM HEIGHT AND OFFSET

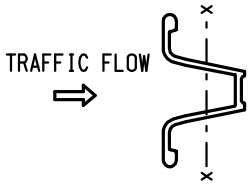
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 3 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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







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 HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 4 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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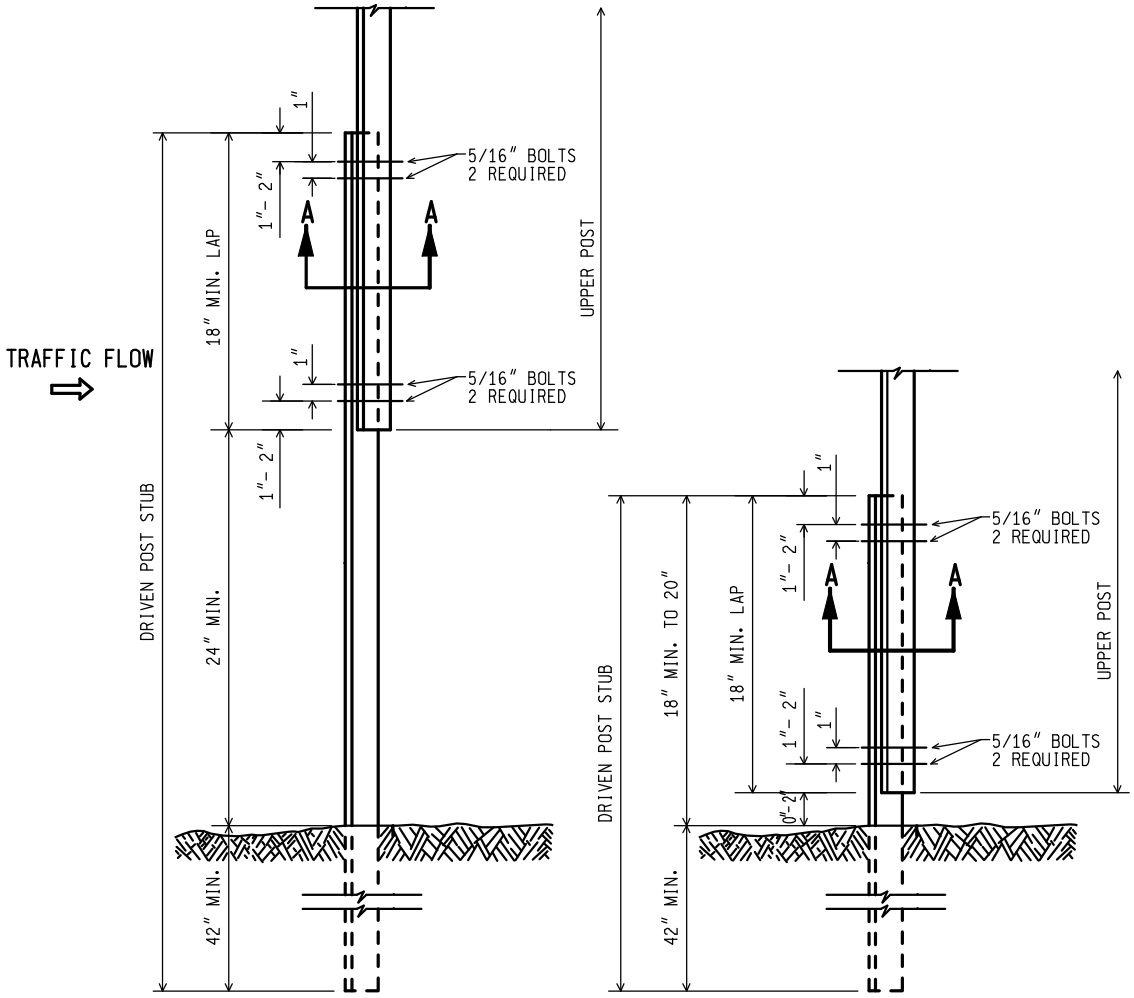


UPPER SPLICE

LOWER SPLICE

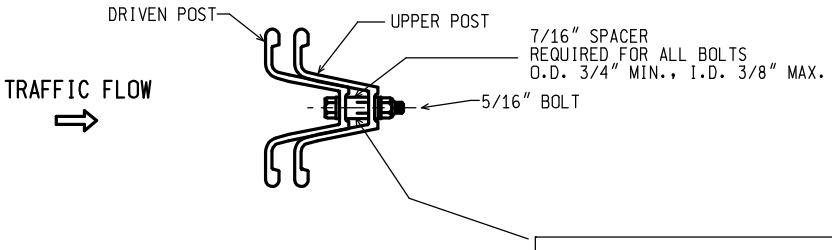
3 lb. U - CHANNEL STEEL POST
(WITH SPLICE)

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

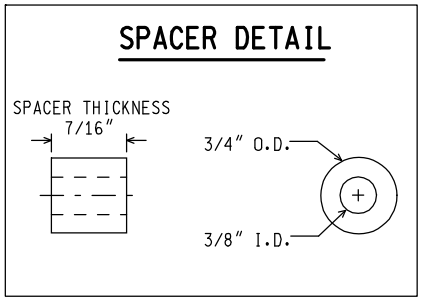
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 5 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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



SECTION A-A



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.

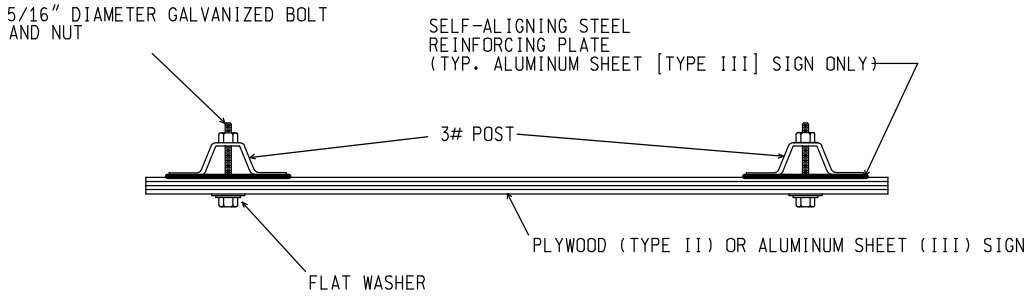
3. THE INTERIOR BOLT (FARTHEST FROM LAP), SPACER, WASHER, AND NUT SHALL BE INSTALLED IN THE NEXT PREPUNCHED HOLE.

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.

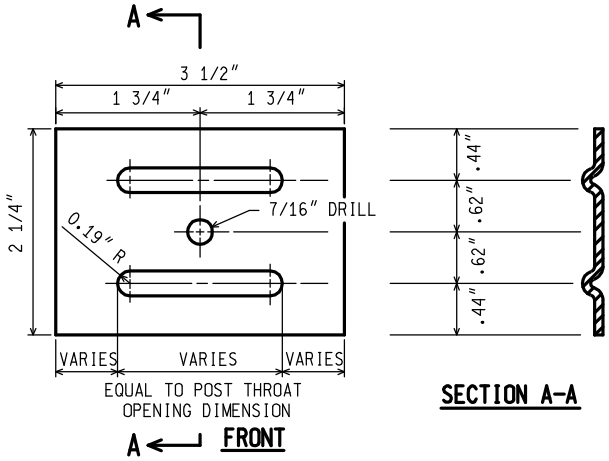
5. THE SPLICE LAP SHALL BE FASTENED BY FOUR-5/16" DIA. GALVANIZED A449 BOLTS (SAE J429 GRADE 5) OR GALVANIZED A325 BOLTS.

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

NOT TO SCALE



SIGN TO 3 lb. POST CONNECTION



SECTION A-A

NOTES: (FOR STEEL SIGN REINF' PLATE)

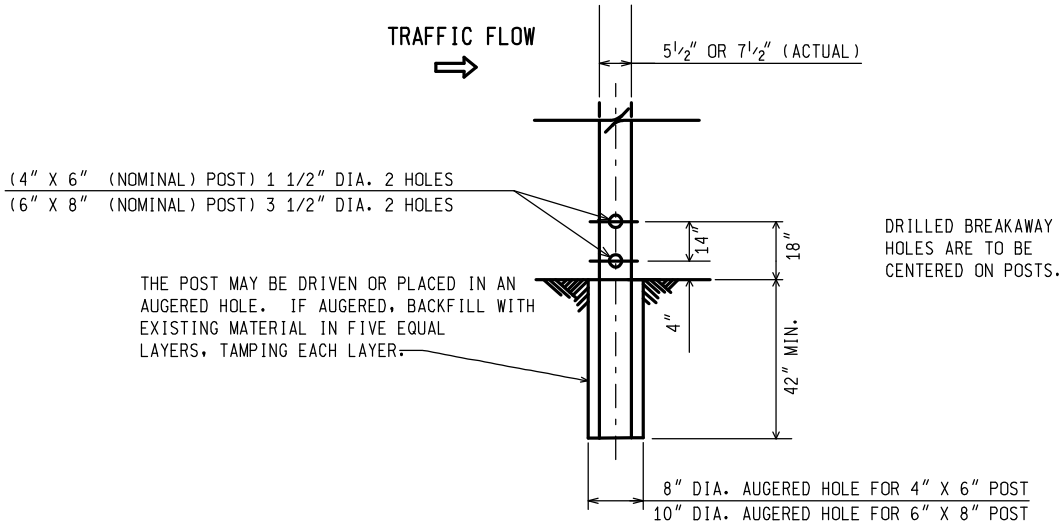
1. MATERIAL: 12 GAUGE CARBON STEEL.
2. TOLERANCE ON ALL DIMENSIONS ± 0.0625"
3. FINISH-AFTER STAMPING AND PUNCHING, GALVANIZE ACCORDING TO CURRENT SPECIFICATIONS FOR ZINC (HOT GALVANIZE) COATINGS ON PRODUCTS FABRICATED FROM PLATES OR STRIPS

STEEL SIGN REINFORCING PLATE
REQUIRED FOR TYPE III SIGNS ONLY

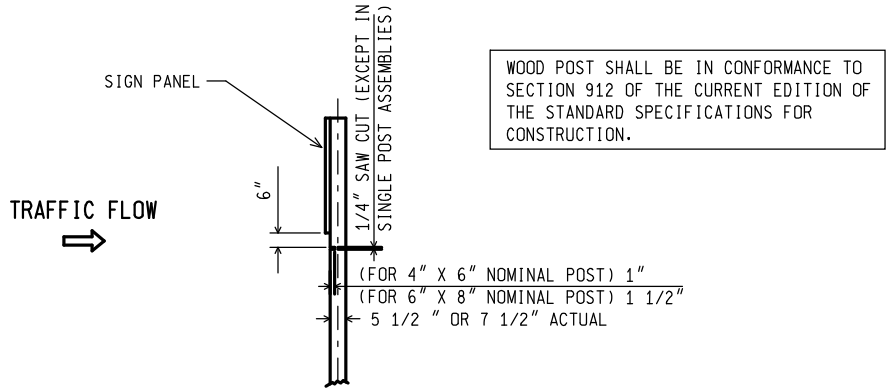
3 lb. U - CHANNEL STEEL POST SIGN CONNECTION

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 7 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				



WOOD POST BREAKAWAY HOLES/ DIRECT EMBEDMENT DETAILS



SAW CUT DETAIL (MULTIPLE POST INSTALLATIONS)

WOOD POST DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 8 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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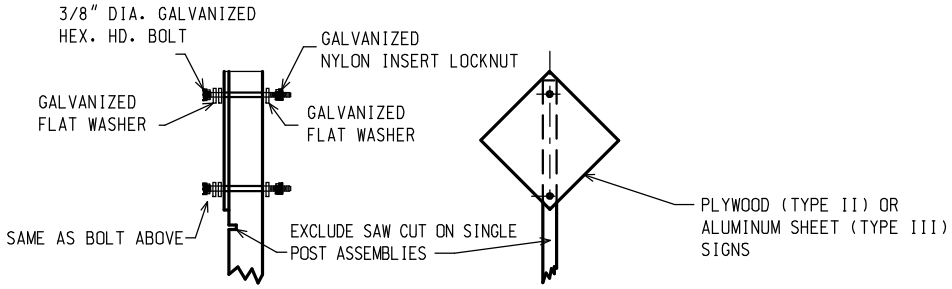
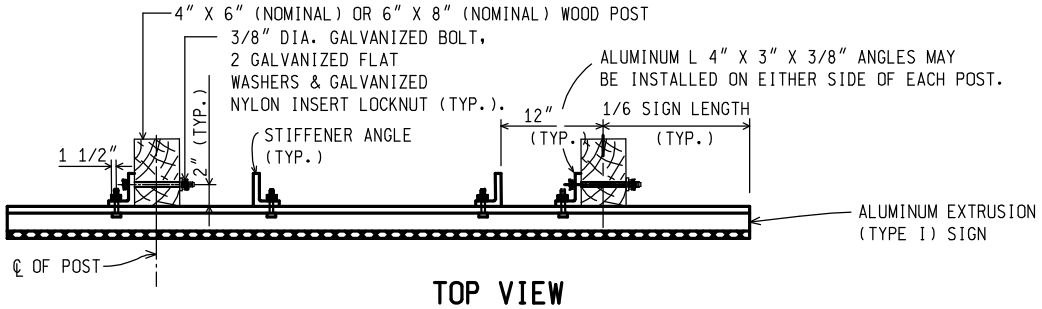
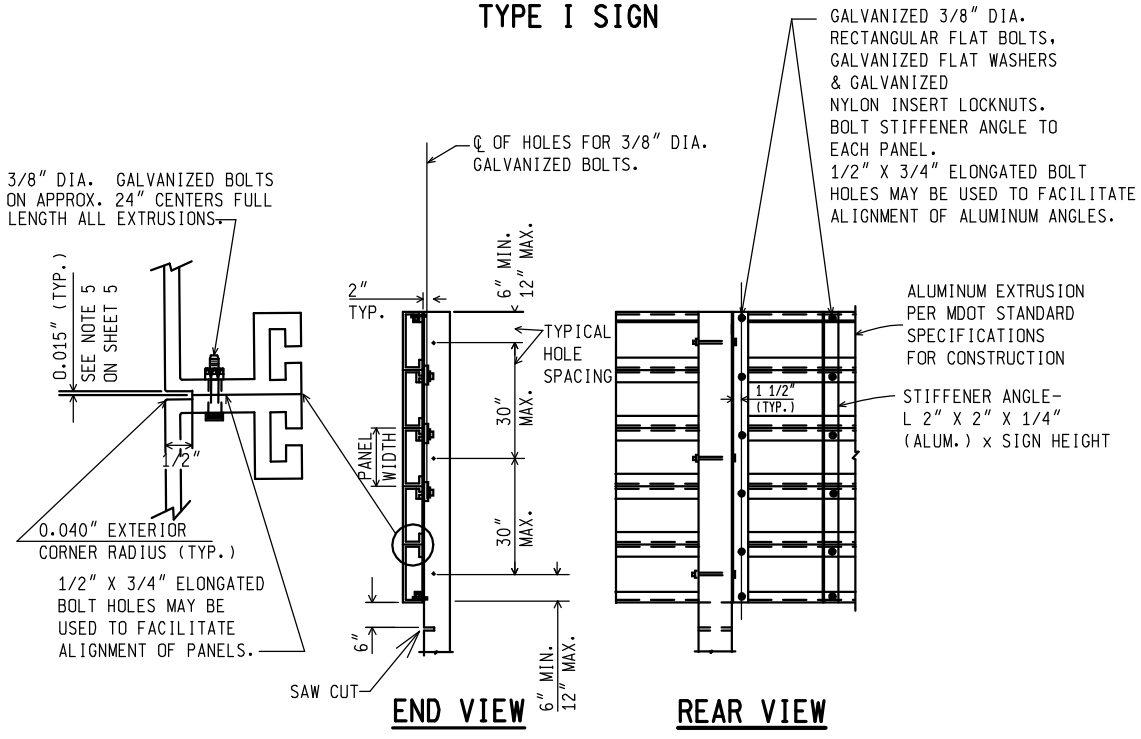


TYPE II AND TYPE III SIGNS



TOP VIEW
TYPE I SIGN



END VIEW
REAR VIEW

TYPE I SIGN - ERECTION DETAILS

WOOD POST CONNECTIONS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 9 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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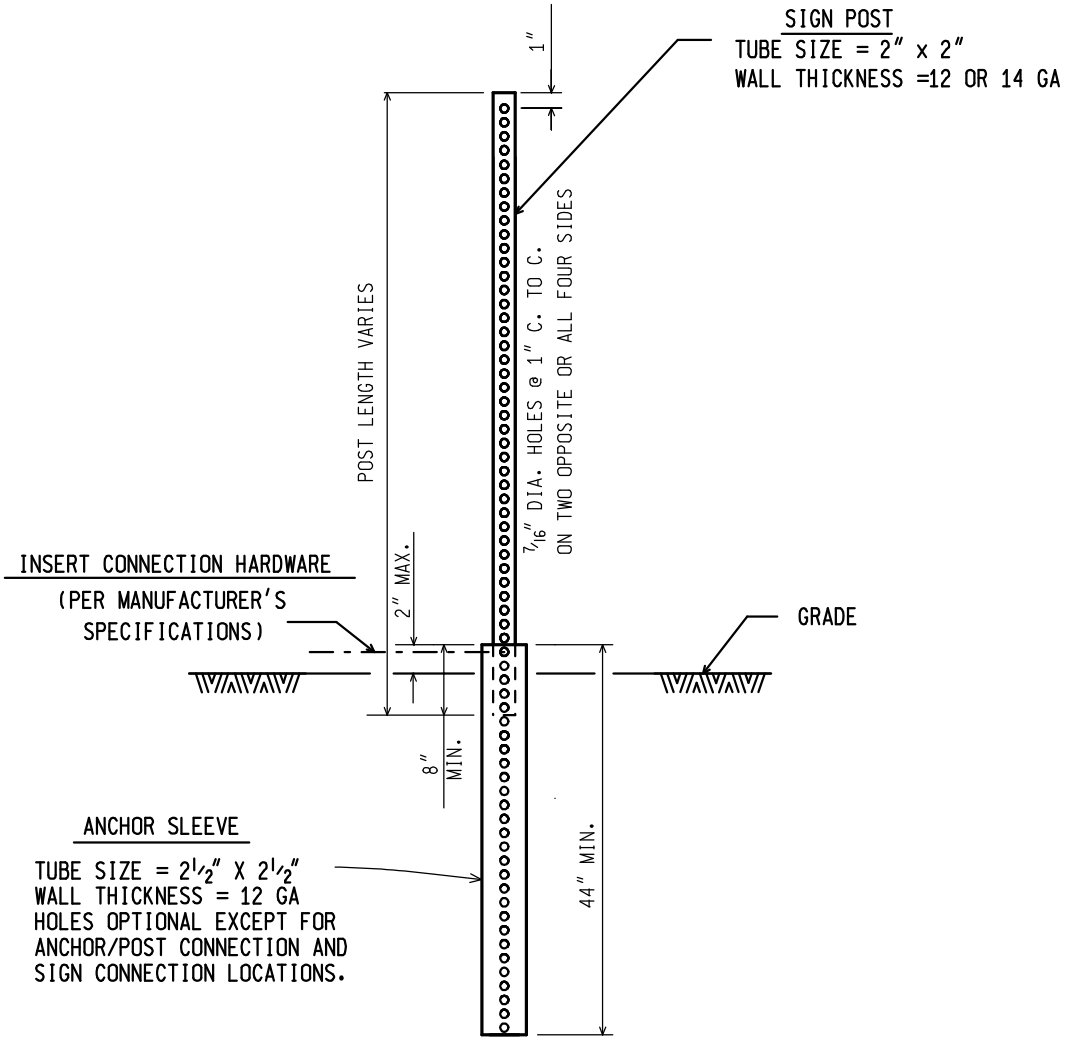


SQUARE TUBULAR STEEL POST

NOT TO SCALE

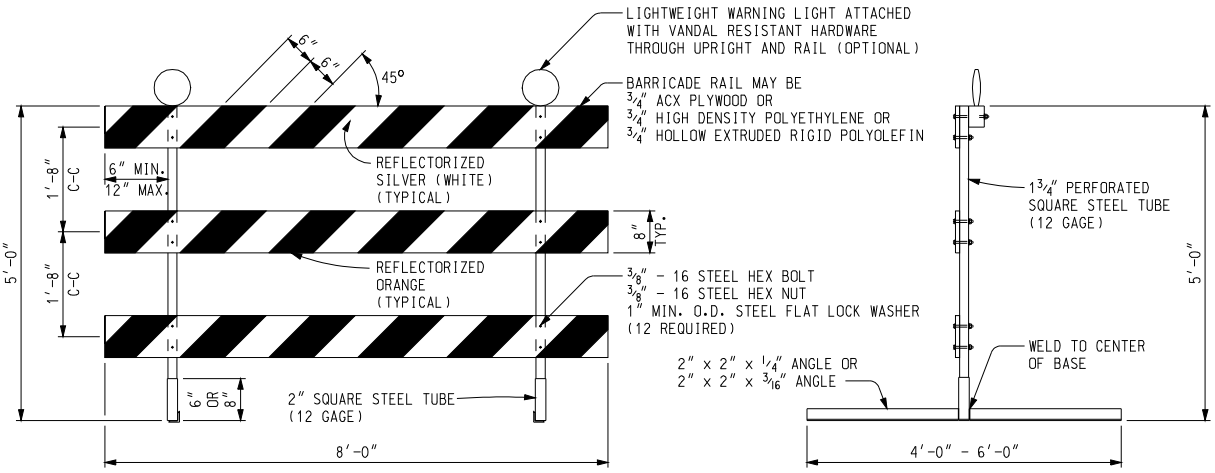
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 10 of 11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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

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 HORIZONTIAL 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, COVER, 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.

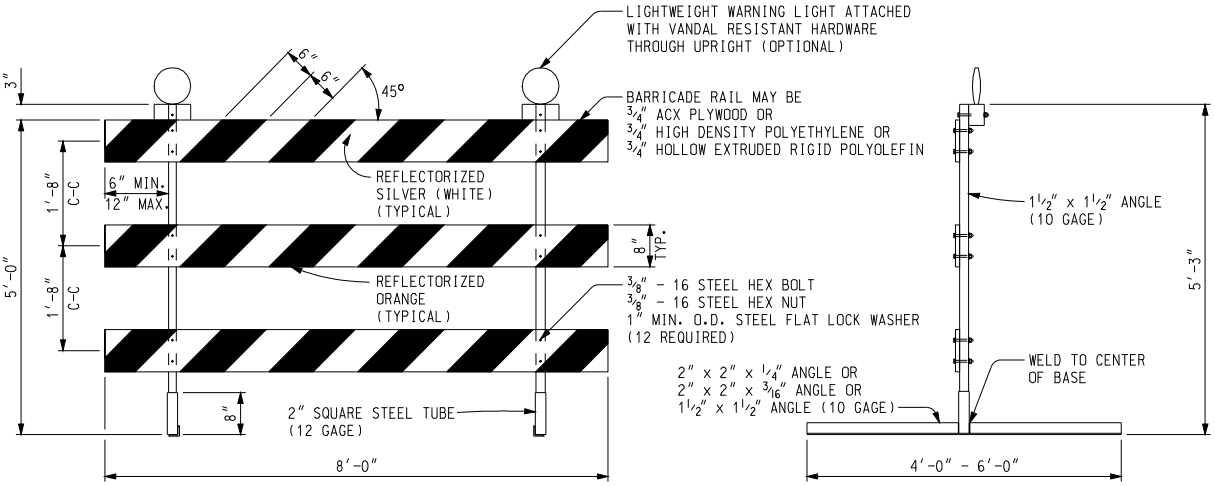
NOT TO SCALE



FRONT ELEVATION

SIDE VIEW

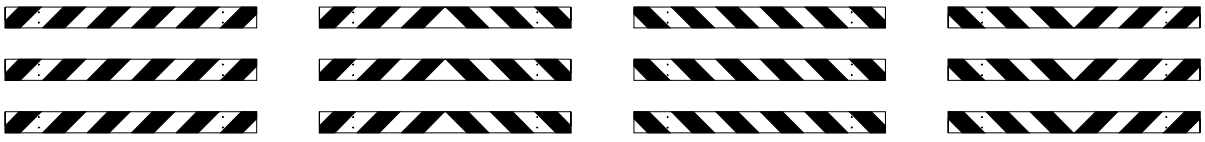
PERFORATED SQUARE STEEL TUBE OPTION



FRONT ELEVATION

SIDE VIEW

ANGLE IRON OPTION



LEFT DIRECTIONAL | BI-DIRECTIONAL | RIGHT DIRECTIONAL | CLOSURES

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

NOT TO SCALE

File: T&S/Typ/Signs/WorkZones/wzd 125 d Rev. 09/22/09 PJ

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: ECH

CHECKED BY: MWB

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

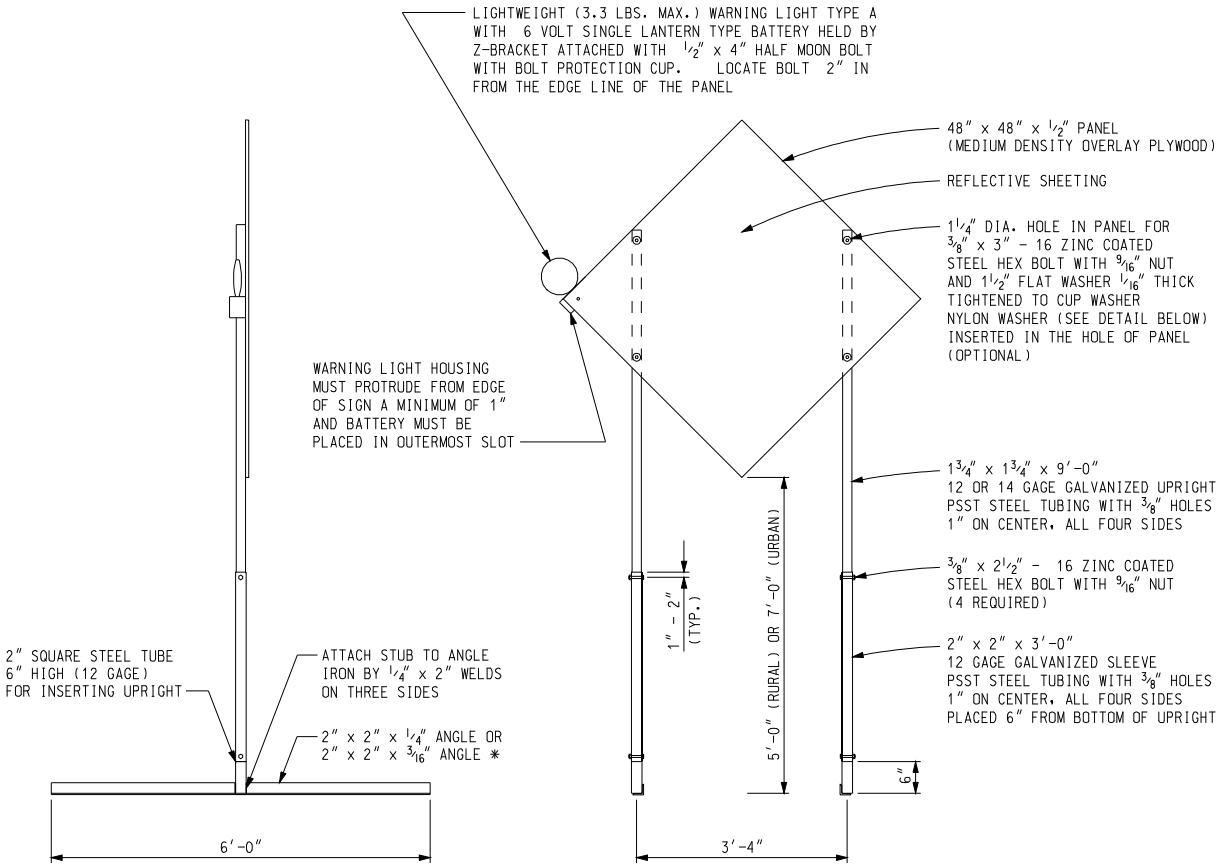
Temporary Traffic Control Devices

9/22/09
PLAN DATE

WZD-125-E

SHEET 1 of 3

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



SIDE VIEW

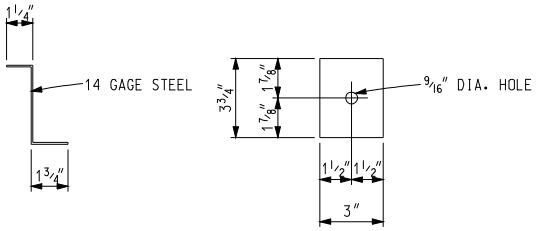
FRONT ELEVATION

TEMPORARY SIGN SUPPORT

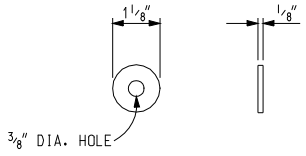
(WARNING LIGHT PLACED ON SIDE CLOSEST TO TRAFFIC)

* 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

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	9/22/09 PLAN DATE	WZD-125-E	SHEET 2 of 3
File: T&S/Typ/Signs/WorkZones/wzd 125 d	Rev. 09/22/09 PJ			

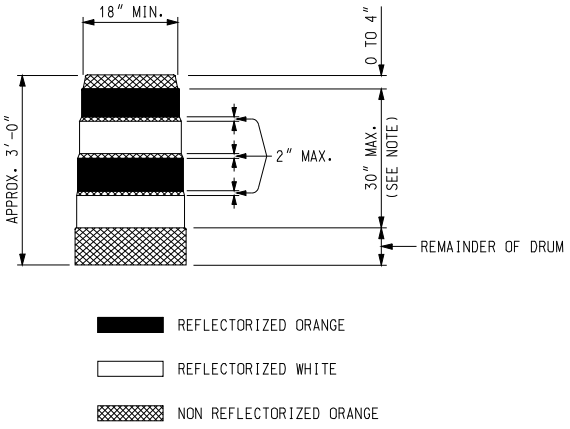
NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

PLASTIC DRUM

PROPOSED TYPE III BARRICADE

EXISTING TYPE III BARRICADE

SYMBOLS TO BE USED ON PLANS



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 BARICADE.

WARNING LIGHTS SHALL BE PLACED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL OTHER PROVISIONS IN THE CONTRACT WHEN THEY ARE USED 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 TEMORARY 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 HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	9/22/09 PLAN DATE	WZD-125-E	SHEET 3 of 3
File: T&S/Typ/Signs/WorkZones/wzd 125 d	Rev. 09/22/09 PJ			

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

CITY OF OWOSSO

SPECIAL PROVISION
FOR
DR STRUCTURE, RECONSTRUCT, ADD DEPTH, SPECIAL

F&V/GLR 1 of 1 11/24/15

DESCRIPTION

Dr Structure, Reconstruct, Add Depth, Special shall consist of repairing or reconstructing existing drainage structures at a depth greater than 6 inches below the bottom of the casting at the locations shown on the plans or as directed by the Construction Engineer. All work shall be done in accordance with the requirements of Section 403 of the Michigan Department of Transportation 2012 Standard Specifications for Construction, as shown on the plans, and as specified below.

MATERIALS

The materials to be used for Dr Structure, Reconstruct, Add Depth, Special shall meet the requirements specified in Section 403.02 of the Michigan Department of Transportation 2012 Standard Specifications for Construction.

CONSTRUCTION

Dr Structure, Reconstruct, Add Depth, Special shall consist of reconstructing existing drainage structures from the point 6 inches below the bottom of casting and deeper. Remove all damaged or unsound portions of the structure and reconstruct by placing new precast masonry units, blocks, bricks, and mortar. The additional depth of structure shall be sealed by placing new mortar on the interior and exterior of the structure.

MEASUREMENT AND PAYMENT

The completed work as measured for Dr Structure, Reconstruct, Add Depth, Special will be paid for at the contract unit price for the following contract item (pay item).

Pay Item	Pay Unit
Dr Structure, Reconstruct, Add Depth, Special	Foot

Dr Structure, Reconstruct, Add Depth, Special will be measured by the foot beginning 6 inches below the bottom of casting and continuing to the bottom of the repair work. Payment for this work shall include all labor, material, and equipment required to reconstruct additional depth of the drainage structure.

CITY OF OWOSSO

SPECIAL PROVISION
FOR
DR STRUCTURE COVER, ADJ, CASE 1, MODIFIED

F&V/GLR 1 of 1 11/24/15

DESCRIPTION

Dr Structure Cover, Adj, Case 1, Modified shall consist of adjusting and/or performing repairs to existing drainage structures at the locations shown on the plans or as directed by the Engineer. All work shall be done in accordance with the requirements of Section 403 of the Michigan Department of Transportation 2012 Standard Specifications for Construction, as shown on the plans and as specified below.

MATERIALS

The materials to be used for Dr Structure Cover, Adj, Case 1, Modified shall meet the requirements specified in Section 403.02 of the Michigan Department of Transportation 2012 Standard Specifications for Construction.

CONSTRUCTION

Dr Structure Cover, Adj, Case 1, Modified shall consist of adjusting existing drainage structure to the required line and elevation where the elevation of the cover is changed less than 6 inches, and/or completing repairs to existing structures within 6 inches of the bottom of the casting. Where called for on the plans as Dr Structure Cover, Adj, Case 1, Modified or as directed by the Engineer, the existing drainage structure shall be adjusted with block, bricks, and mortar. The structure shall be sealed by placing new mortar on the interior and exterior of the structure. Drainage structure covers shall be set in a full bed of mortar.

MEASUREMENT AND PAYMENT

The completed work as measured for Dr Structure Cover, Adj, Case 1, Modified will be paid for at the contract price for the following contract pay items and includes all material, equipment, and labor to complete this item.

Pay Item	Pay Unit
Dr Structure Cover, Adj, Case 1, Modified	Each

Dr Structure Cover, Adj, Case 1, Modified will be measured as a unit each. Payment for this work shall include all work required to adjust and seal the drainage structure. When a new cover is required, it will be paid for separately as Dr Structure Cover, Type__. Pavement and curb and gutter removal and replacement will be paid for separately. Repairs deeper than 6" below the bottom of casting will be paid for separately as Drainage Structure, Reconstruct, Add Depth, Special.

CITY OF OWOSSO

SPECIAL PROVISION
FOR
PAVEMENT JOINT AND CRACK REPAIR

F&V/GLR 1 of 1 11/24/15

DESCRIPTION

Pavt Joint and Crack Repr, Detail 7, Modified & Pavt Joint and Crack Repr, Detail 8 Modified shall consist of repairing transverse and longitudinal cracks in HMA pavement in accordance with the detail shown on the plans. The Construction Engineer will identify the pavement joints and cracks for repair.

MATERIALS

HMA shall be the material as specified on the plans.

CONSTRUCTION METHODS

Pavt Joint and Crack Repr, Detail 7, Modified shall consist of milling the existing unstable asphalt material to a depth directed by the Construction Engineer. Pavt Joint and Crack Repr, Detail 8, Modified shall consist of removing the existing unstable asphalt material to a full depth. All crack repair trenches shall be filled by the end of the day that the HMA material is removed.

MEASUREMENT AND PAYMENT

The completed work as measured for Pavt Joint and Crack Repr, Detail 7, Modified & Pavt Joint and Crack Repr, Detail 8, Modified will be paid for at the contract price for the following contract pay items and includes all milling. HMA top course material to complete the repair shall be considered included in the pay item for Hand Patching.

PAY ITEM	PAY UNIT
Pavt Joint and Crack Repr, Detail 7, Modified	Foot
Pavt Joint and Crack Repr, Detail 8, Modified	Foot

CITY OF OWOSSO

SPECIAL PROVISION
FOR
GUARDRAIL APPROACH TERMINAL, TYPE 2B, SALVAGE AND REINSTALL

F&V/GLR 2 of 2 11/24/15

DESCRIPTION

This work shall consist of removing, salvaging, transporting, temporary storing, and reinstalling existing guardrail approach terminals, beam elements, cables, anchorages, and terminal hardware at new locations designated in the plans or as directed by the Engineer. New locations will be in the general vicinity of the existing terminals. Work shall include furnishing and placing new posts, sleeves, blocks, beam elements, anchorages, soil plates, miscellaneous hardware, and incidentals required to complete the installation. Work shall also include the backfilling of existing postholes.

All work shall be performed in accordance with Section 807 of the Michigan Department of Transportation's 2012 Standard Specifications for Construction as modified herein and in the plans.

MATERIALS

Provide materials and equipment as needed for the removal, salvaging, transporting, temporary storing, and reinstalling the guardrail approach terminal. All materials shall be in accordance with Section 807.02 of the Standard Specifications for Construction.

CONSTRUCTION

Remove and salvage the guardrail approach terminal without damaging the unit. Any parts not salvageable shall be replaced with new hardware in accordance with Section 807.02 of the Standard Specifications for Construction.

Construct guardrail approach terminal in accordance with Section 807.03.F.

Any damage to the guardrail approach terminal during removal, disassembly, storage, reassembly, or reinstallation due to Contractor's operations must be repaired by the Contractor as the Contractor's expense.

MEASUREMENT AND PAYMENT

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

Pay Item	**Pay Unit**
Guardrail Approach Terminal, Type 2B, Salvage and Reinstall, Special	Each

Guardrail Approach Terminal, Type 2B, Salvage and Reinstall, Special will be measured and paid for by the individual unit for each complete approach terminal. Payment shall include all labor, materials, and equipment required to remove and reinstall the guardrail approach terminal in the locations shown on the plans or as directed by the Engineer.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TURF ESTABLISHMENT, PERFORMANCE

DES:JLB 1 of 5 C&T:APPR:DMG:LML:08-16-11

a. Description. Delete section 816 of the Standard Specifications for Construction and replace with this special provision. The Contractor is responsible for the performance and quality of turf growth in the areas indicated 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, weed-free, 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 items and devices, 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. Weed control must be done by a commercial herbicide applicator, licensed by the State of Michigan and certified by the Michigan Department of Agriculture (MDA) in the appropriate category to apply herbicides. Use application procedures and materials according to federal, state and local regulations. Use of restricted use chemicals is prohibited. The Contractor must provide appropriate documentation and secure approval from the Engineer before application of herbicides.

At least 10 work days prior to 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 blankets and any other unique erosion control materials as necessary to fulfill this specification, as detailed in 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. Topsoil must be humus bearing and placed at least 4 inches deep. It must be 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-Fults 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. The seed must be legally saleable in Michigan. The seed product must not contain more than 10 percent inert materials. The seed source must be from an MDOT approved certified vender.

B. The species and varieties of seed must be adapted 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. At least two of the species in the mixture proposed to be planted within 15 feet behind the curb or the shoulder must be 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 MDA weed control application, the Contractor is required to make proper notifications and/or postings as per label and MDA requirements for all locations that will be sprayed. Notify the Engineer 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 MDOT 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 their 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. Erosion must be controlled at all times according to section 208 of the Standard Specifications for Construction. Control of soil erosion is the responsibility of the Contractor. However, sedimentation controls must be placed as indicated on the plans or as directed by the Engineer. The site must be continuously monitored by the Contractor for needed erosion repair from any cause as addressed in the contract documents. All eroded areas must be returned to original grade as detailed in the contract documents.

If sedimentation occurs in drainage structures or any watercourse or water containment area, corrective action must be taken immediately and all disturbed areas contributing to this

sedimentation must be stabilized within 24 hours after the erosion occurrence. Sediment deposited as a result of the Contractor's inability to control the soil erosion must be removed at the Contractor's expense.

The Contractor must 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.

All erosion occurrences and the repairs made by the Contractor must be reported to the Engineer in the format and at the frequency required by the Engineer. Any erosion, displacement or disturbance to ongoing or completed work by any cause must be repaired by the Contractor 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. Any eroded area that may affect the support of the roadbed or safety of the public must be repaired within 24 hours of the erosion occurrence.

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

4. Mowing and Weeding. Turf must be maintained 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. Before final acceptance of the turf establishment work, all of the following minimum parameters must be 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, weed free, 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. All expert fees and expenses charged by the third party must be paid by the Contractor.

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. The supplemental performance bond must be in all respects satisfactory and acceptable to MDOT and executed by a surety company authorized to do business with the State of Michigan.

The bond must be in an amount equal to 50 percent of the turf establishment work items covered by this special provision. The bond must remain 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 MDOT right-of-way using Form 2205. 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

1. **Turf Establishment, Performance** will be measured in place by area in square yards. All materials, labor and equipment required or selected by the Contractor to install, maintain, inspect, repair and meet the acceptance parameters for turf establishment specified in this special provision, including preparation, updating and submittal of the Contractor's Daily Reports, are included in the contract unit price bid for **Turf Establishment, Performance**.

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 according to 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 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.**

CITY OF OWOSSO

SPECIAL PROVISION
FOR
HMA APPLICATION ESTIMATE

F&V/GLR 1 of 1 11/24/15

DESCRIPTION

This work shall be done in accordance with the requirements of Division 5 of the *MDOT 2012 Standard Specifications for Construction*, except as herein specified.

MATERIALS

HMA, 5E3 shall have a minimum average yield of 165 pounds/square yard.

HMA, 4E3 shall have a minimum average yield of 275 pounds/square yard.

The performance grade asphalt binder range for the HMA, 5E3 and 4E3 shall be 64-28.

HMA, 13A shall have a minimum average yield of 550 pounds/square yard for residential drives and 1100 pounds/square yard for commercial drives.

The Performance Grade asphalt binder range for the HMA, 13A mix shall be 58-28.

Hand Patching (HMA, 5E3) shall have a maximum average yield of 220 pounds/square yard/lift.

Hand Patching (HMA, 3E3) shall have a maximum average yield of 410 pounds/square yard/lift.

The Bond Coat material shall be per Section 502.02. The uniform rate of application shall be 0.05 to 0.10 gallon/square yard. No separate payment shall be made for the bond coat material.

Aggregate Wear Index (AWI) for the top course shall be a minimum AWI of 260 for HMA, 5E3 and 220 for HMA, 13A.

MEASUREMENT AND PAYMENT

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

Pay Item	Pay Unit
HMA, 5E3	Ton
HMA, 4E3	Ton
HMA, 13A	Ton
Hand Patching	Ton

CITY OF OWOSSO

SPECIAL PROVISION
FOR
COORDINATION OF WORK NEAR RAILROAD CROSSINGS

a. **Description.** This work consists of the Contractor notifying the Railroad prior to performing work.

b. **Materials.** None specified.

c. **Construction.** The Contractor's attention is directed to the requirements for cooperation with others as covered in subsection 104.08 of the Standard Specifications for Construction.

   Initiate contact via e-mail or hard copy letter with the Railroad person identified in the Notice to Bidders – Utility Coordination, 30 calendar days, excluding Saturdays, Sundays and Holidays, prior to starting work in the vicinity of their tracks. Copy the Engineer in all correspondence to the Railroad.

   Do not work or place equipment within 10 feet of the nearest rail.

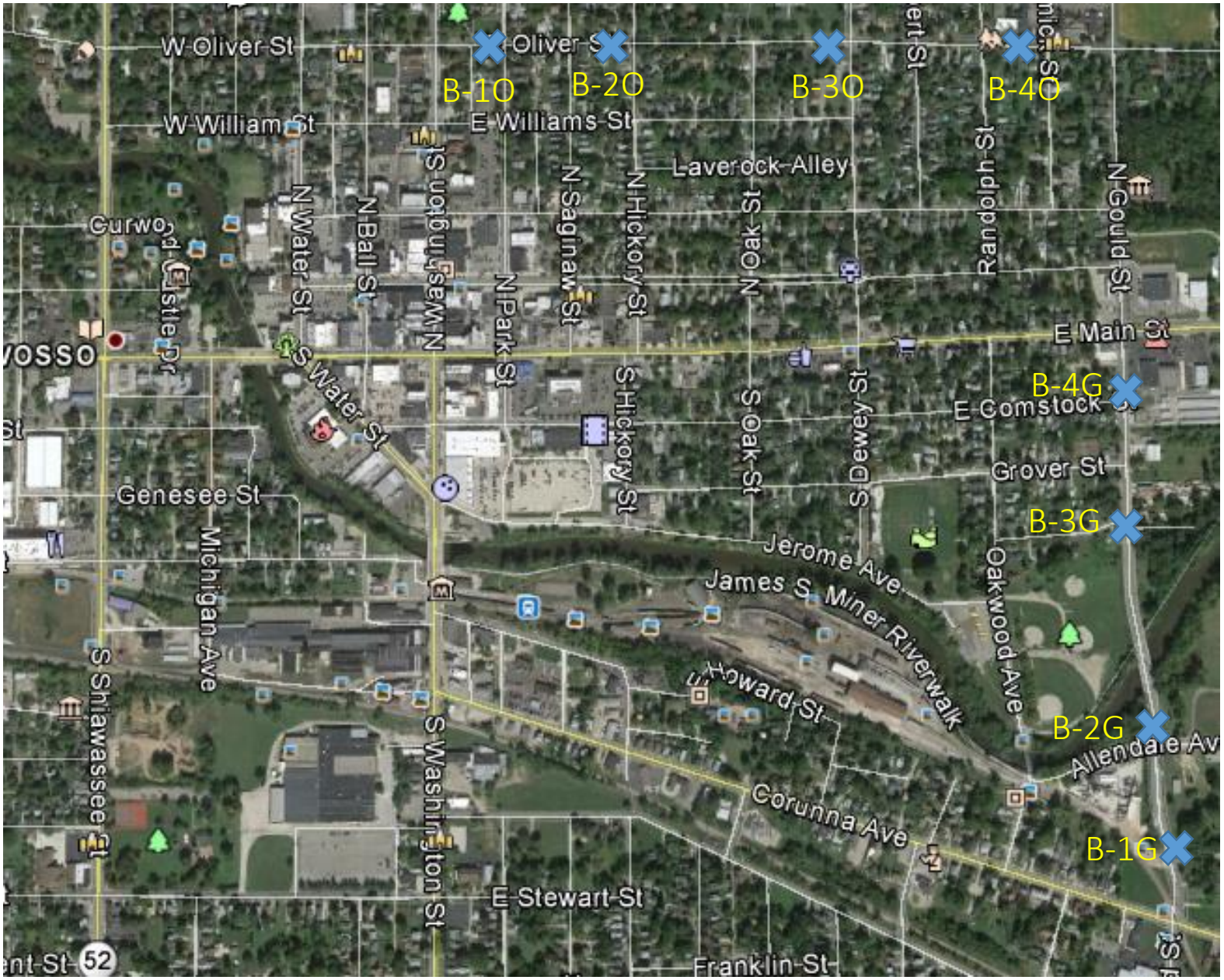
d. **Measurement and Payment.** None specified.

CITY OF OWOSSO
LOG OF SOIL BORINGS

9-22-15

The following data is being provided for information only and is not assumed to be continuous soil and/or pavement thicknesses throughout the project. The Contractor shall make his/her own investigations by permission of road authority (City of Owosso) for clarification and assurance of pavement and soil thickness and type. Neither the City of Owosso, nor Fleis & VandenBrink shall be held responsible for the accuracy of the following information.

Soil Boring



BORING LOCATION DIAGRAM

Owosso Road Improvement Projects
Gould St and Oliver St
Owosso, Michigan

FIGURE NO. 2

PSI PROJECT NO. 0408-1195
PREPARED BY: MCF
PREPARED ON: 7/15/2015

psi Information To Build On
Engineering • Consulting • Testing

BORING B-01 Gould

DATE STARTED:	6/29/15
DATE COMPLETED:	6/29/15
COMPLETION DEPTH	3.9 ft
BENCHMARK:	N/A
ELEVATION:	N/A
LATITUDE:	
LONGITUDE:	
STATION:	N/A **OFFSET:** N/A
DRILL COMPANY:	PSI
DRILLER:	E. Motcheck **LOGGED BY:** E. Motcheck
DRILL RIG:	CME-55
DRILLING METHOD:	3 1/4" HSA
SAMPLING METHOD:	SS
HAMMER TYPE:	Automatic
EFFICIENCY	N/A
REVIEWED BY:	M. Fucinari

REMARKS: None

Water		
	While Drilling	N/A
	Upon Completion	N/A
	Cave Depth	N/A

BORING LOCATION:
See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0 25 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 2.0 4.0)	Additional Remarks
	0					10.75" ASPHALT					
						Mottled brown and gray SANDY CLAY, trace Gravel, moist, stiff (FILL)					
				1	18	SLAG (FILL)		5-5-4 N=9		◎	
						Mottled brown and gray SANDY CLAY, trace Gravel, moist, stiff (CL)					
				2	18		CL	3-4-4 N=8	17	◎ × ✳	
						Boring terminated 3.9 feet below existing ground surface.					

Professional Service Industries, Inc.
3120 Sovereign Drive, Suite C
Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0408-1195
PROJECT: Road Improvement Projects
LOCATION: Gould Street (Corunna to Main)
Oliver Street (Washington to Gould)
Owosso, Michigan

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

BORING B-02 Gould

DATE STARTED:	6/29/15
DATE COMPLETED:	6/29/15
COMPLETION DEPTH	3.7 ft
BENCHMARK:	N/A
ELEVATION:	N/A
LATITUDE:	
LONGITUDE:	
STATION:	N/A **OFFSET:** N/A
DRILL COMPANY:	PSI
DRILLER:	E. Motcheck **LOGGED BY:** E. Motcheck
DRILL RIG:	CME-55
DRILLING METHOD:	3 1/4" HSA
SAMPLING METHOD:	SS
HAMMER TYPE:	Automatic
EFFICIENCY	N/A
REVIEWED BY:	M. Fucinari

REMARKS: None

Water		
	While Drilling	N/A
	Upon Completion	N/A
	Cave Depth	N/A

BORING LOCATION:
See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0 25 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 2.0 4.0)	Additional Remarks
	0					8.75" ASPHALT					
				1	18	Mottled brown and gray SANDY CLAY, trace Gravel, moist, stiff (FILL)		5-5-7 N=12		◎	
				2	18	Mottled gray and brown SANDY CLAY, trace Gravel, trace buried topsoil, moist, very stiff (FILL)		6-7-7 N=14	14	⊗ ✳	
						Boring terminated 3.7 feet below existing ground surface.					

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Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0408-1195
PROJECT: Road Improvement Projects
LOCATION: Gould Street (Corunna to Main)
Oliver Street (Washington to Gould)
Owosso, Michigan

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

BORING B-03 Gould

DATE STARTED:	6/29/15
DATE COMPLETED:	6/29/15
COMPLETION DEPTH	3.9 ft
BENCHMARK:	N/A
ELEVATION:	N/A
LATITUDE:	
LONGITUDE:	
STATION:	N/A **OFFSET:** N/A
DRILL COMPANY:	PSI
DRILLER:	E. Motcheck **LOGGED BY:** E. Motcheck
DRILL RIG:	CME-55
DRILLING METHOD:	3 1/4" HSA
SAMPLING METHOD:	SS
HAMMER TYPE:	Automatic
EFFICIENCY	N/A
REVIEWED BY:	M. Fucinari

REMARKS: None

Water		
	While Drilling	N/A
	Upon Completion	N/A
	Cave Depth	N/A

BORING LOCATION:
See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0, 25, 50) STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
	0					11" ASPHALT					
						5" Mottled gray and brown SANDY CLAY, trace Gravel, moist, stiff (FILL)					
				1	18	Mottled brown and gray SANDY CLAY, trace Gravel, moist, stiff (FILL)		5-6-8 N=14			
				2	18	Gray SANDY CLAY, trace organics, moist, very stiff (CL)	CL	3-4-5 N=9	22		
						Boring terminated 3.9 feet below existing ground surface.					

Professional Service Industries, Inc.
3120 Sovereign Drive, Suite C
Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0408-1195
PROJECT: Road Improvement Projects
LOCATION: Gould Street (Corunna to Main)
Oliver Street (Washington to Gould)
Owosso, Michigan

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

BORING B-04 Gould

DATE STARTED:	6/29/15
DATE COMPLETED:	6/29/15
COMPLETION DEPTH	3.9 ft
BENCHMARK:	N/A
ELEVATION:	N/A
LATITUDE:	
LONGITUDE:	
STATION:	N/A **OFFSET:** N/A
REMARKS:	None

DRILL COMPANY:	PSI
DRILLER:	E. Motcheck **LOGGED BY:** E. Motcheck
DRILL RIG:	CME-55
DRILLING METHOD:	3 1/4" HSA
SAMPLING METHOD:	SS
HAMMER TYPE:	Automatic
EFFICIENCY	N/A
REVIEWED BY:	M. Fucinari

Water		
	While Drilling	N/A
	Upon Completion	N/A
	Cave Depth	N/A

BORING LOCATION:
See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0, 25, 50) STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
	0					10.5" ASPHALT					
				1	18	Mottled gray and brown fine to medium CLAYEY SAND, trace Gravel, trace buried topsoil, moist, medium dense (FILL) Dark brown fine to medium SAND, trace Gravel, trace buried topsoil, moist, medium dense (FILL)		6-6-5 N=11			
				2	18	Dark gray SANDY CLAY, trace Gravel, trace organics, moist, stiff (FILL) Gray SILTY CLAY, trace Gravel, trace Sand, moist, stiff (CL-ML)	CL-ML	3-4-4 N=8	30		
						Boring terminated 3.9 feet below existing ground surface.					

Professional Service Industries, Inc.
3120 Sovereign Drive, Suite C
Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0408-1195
PROJECT: Road Improvement Projects
LOCATION: Gould Street (Corunna to Main)
Oliver Street (Washington to Gould)
Owosso, Michigan

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

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:06-18-14
FHWA:APPR:06-27-14

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.** Effective November 24, 2008, all workers within the right-of-way who are exposed to traffic or to construction equipment within the work area, must wear high visibility clothing.

   High visibility clothing or high visibility safety apparel is personal protective safety clothing that is intended to provide conspicuity during both daytime and nighttime usage. High Visibility safety apparel must meet the Performance Class 2 or 3 requirements of the American National Standards Institute/International Safety Equipment Association (ANSI/ISEA) 107-2004 for High-Visibility Safety Apparel and subsequent revisions thereof.

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

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SOURCE OF STEEL AND IRON (BUY AMERICA)

CFS:JJG 1 of 3 APPR:RJC:DBP:01-08-13
FHWA:APPR:01-08-13

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 Federal Code of 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.

The miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above components (or manufactured products that are not predominantly (90 percent) steel or iron) are not subject to Buy America coverage. Examples include, but are not limited to, cabinets, covers, shelves, clamps, fittings, sleeves, washers, bolts, nuts, screws, tie wire, spacers, chairs, lifting hooks, faucets, door hinges, etc.

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

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 the following documentation must be provided by the Contractor to verify this value and 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 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
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
LABOR COMPLIANCE

CFS:AS 1 of 2 APPR:JJG:RJC:07-01-14
FHWA:APPR:07-09-14

a. Description. This special provision details the requirements for labor compliance. Ensure all levels of contracting (prime, sub, sub-sub, etc.) comply with all labor compliance requirements in this contract as well as with the current MDOT procedure for prevailing wage oversight. All contractors must insert this special provision in each subcontract and further require its inclusion in all lower tier subcontracts. The Contractor must advise all 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. The Contractor is responsible for all subcontractors and lower tier subcontractor labor compliance. Ensure labor compliance posters and the project specific prevailing wage rates are posted on the construction site, in a conspicuous place, prior to the commencement of work. Resolve all labor compliance issues within 60 days of receiving the Department's first documented notice. The 60 day requirement may be extended based on documented mutual agreement between the Department and the Contractor. A violation of state and/or federal prevailing wage rates or laws may result in the debarment of a Contractor from being awarded a contract or subcontract for a period of up to 8 years. Other actions, including but not limited to the reconciliation of records and restitution for employees, included in state and federal laws, may be required of the Contractor or subcontractor.

1. Record Keeping. Maintain payrolls and basic records relating thereto (i.e. W2, canceled checks, bank statements, payroll software etc.) by all levels of contractors during the course of work and preserved for a period of 3 years thereafter for all employees working on the site of work as outlined in 29 Code of Federal Regulations part 5.5 (29 CFR 5.5). Make these records available for inspection, copying, or transcription by the Department or its representative.

2. Certified Payroll Submittal Requirements. Subcontractors (all tiers) must submit their certified payrolls to the prime Contractor. The submitted payrolls must set out accurately and completely all of the information required on MDOT Form CP-347, Certified Payroll. The required weekly payroll information may be submitted on any contractor generated form, but must contain all information required on Form CP-347. Review all lower tier subcontractor certified payrolls prior to submission to the Engineer. The review must ensure the certified payroll complies with the submittal requirements as set forth in the current MDOT procedure for prevailing wage oversight. Complete Form 1955, Contractor's Certified Payroll Report, and submit to the Engineer along with the certified payrolls on a weekly basis. Forms 1955 and CP-347 are available on the MDOT forms webpage.

A. 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 in excess of $2,000. All contractors and subcontractors are required to comply with 29 Code of Federal Regulations Parts 1, 3, and 5.

B. State Prevailing Wage Projects. 1965 PA 166 applies to all contractors, and subcontractors (all tiers) performing work on contracts which are sponsored or financed in whole by the State of Michigan. On contracts involving two or more job numbers where the type of funding is mixed, and where one source of funding is federal, the Department inserts only the wage rates issued by the U.S. Department of Labor in the proposal and the federal requirements apply.

3. Short Duration Projects. The following modifications apply to the prevailing wage oversight procedure if the project is less than 75 calendar days in duration.

A. Submittal Requirements. The first certified payroll is to be received by the Engineer within 2 weeks from the end of the work week in which the work is started by the Contractor and/or subcontractors. The 2 week period is to allow for the processing and review of the certified payrolls by the Contractor. The first pay estimate can be made prior to the submission of the first certified payroll. The 2 week grace period allows the first estimate to be paid assuming the Contractor and subcontractor 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.

B. Contractor Notices. When certified payrolls are determined to be deficient or delinquent as defined in the current MDOT procedures for prevailing wage oversight the Engineer is to provide the prime Contractor with documented notice.

All labor compliance issues are to be resolved within 30 days after receiving the Department's first documented notice. The notification timeframe will be modified from 30 calendar days per notification to 15 calendar days per notification for short duration projects.

b. Materials. None specified.

c. Construction. None specified.

d. 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
NON-COMPLIANCE WITH SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS

CFS:DMG 1 of 2 APPR:TWK:HZ:07-02-14
FHWA:APPR:07-09-14

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 of precipitation events which result in off-site runoff. 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. Sedimentation of a drainage structure or 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. 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
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 (≥ 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:10-15-15
FHWA:APPR:11-02-15

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	±9.0
		# 30 Sieve	±4.0	±6.0	±6.0	±9.0
		# 200 Sieve	±1.0	±2.0	±2.0	±3.0
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 all mixtures, field regress air void content to 3.5 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 Contractors 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: _____

_____

_____

_____

_____

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
QUALITY CONTROL AND ACCEPTANCE OF PORTLAND CEMENT CONCRETE (FOR LOCAL AGENCY PROJECTS ONLY)

a. Description. The Contractor must administer quality control (QC) and the Agency 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.

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 Agency. Agency 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 T 23/ASTM C 31* and tested according to *AASHTO T 22/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.

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 T 23/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 location for use of each JMF on the project.

U. The frequency of sampling and testing.

V. Handling, protection, initial curing, and transporting of strength test specimens (*AASHTO T 23/ASTM C 31*).

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 Agency'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 Agency 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.

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.

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 slag cement (Grade 100 minimum) or fly ash. Do not exceed 40 percent total replacement of the Portland cement if both slag cement and fly ash are 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/yd3) (d)	470-564	517-611	517-658	517-611	517-611	517-611	489-517
Air Content (percent) (f)	5.5-8.0						
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

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.

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.

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.

d. Type III cement is not permitted.

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.

f. For action, suspension, and specification limits, see Tables 2 and 3, where applicable. Air content of fresh concrete less than 5.5 percent for concrete that lies in the finished work at least 3 feet below the surface of the ground or entirely under water will not be cause for rejection or air content of fresh concrete pay factor PFac reduction.

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.

h. Section Number Reference:

401 Culverts
402 Storm Sewers
403 Drainage Structures
602 Concrete Pavement
603 Concrete Pavement Restoration
705 Foundation Piling
706 Structural Concrete Construction
711 Bridge Railings
712 Bridge Rehabilitation-Concrete
713 Bridge Rehabilitation-Steel
718 Drilled Shafts
801 Concrete Driveways
802 Concrete Curb, Gutter and Dividers
803 Concrete Sidewalk, Sidewalk Ramps, and Steps
804 Concrete Barriers and Glare Screens
806 Shared Use Paths
808 Fencing
810 Permanent Traffic Signs and Supports
813 Slope Protection
814 Paved Ditches
819 Electrical and Lighting

A. Alkali-Silica Reactivity. Provide documentation to the Engineer that the concrete mixture does not present the potential for excessive 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 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 requirements specified in subsection c.5.A of this special provision are 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 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.

(2) Method 2. *ASTM C 1293*. Concrete Prism Test.

(a) 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 concrete without the need for ASR mitigation.

(b) If the expansion of concrete prisms is greater than 0.040 percent, but not exceeding 0.120 percent (rounded to the nearest 0.001 percent) after 1 year, the fine aggregate is considered moderately deleterious to ASR and mitigation is required, as follows. A low-alkali cement with Na2O equivalent alkalies (Na2O + 0.658 × percent K2O) not exceeding 0.60 percent must be used in the concrete mixture to mitigate the potential for ASR. Slag cement or fly ash may be used in conjunction with the low-alkali cement. The total alkali content for the cementitious materials combination must not exceed 3.0 pounds per cubic yard of Na2O equivalent.

(3) Method 3. *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 either Method 1 or 2, above, replace 25 to 40 percent of the Portland cement in the concrete mixture with slag cement (Grade 100 minimum) or fly ash. A blended cement meeting the requirements of *ASTM C 595* containing Portland cement and slag cement or fly ash may also be used.

Demonstrate the ability of the fly ash or slag cement 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.

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.

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 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, above. 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 plant 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. Agency 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 excessive mortar bar expansion as a result of deleterious reactivity between the aggregates and cementitious materials 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 follows:

(1) At least once during each week of production.

(2) Whenever the concrete pump is relocated, where applicable.

(3) Whenever there is a significant change in the boom angle of the concrete pump during concrete placement, where applicable.

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 (after vibration), 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 > 8.5
Air Content Loss (percent)	As Defined in the Contractor QC Plan	Greater than 2.0
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 > 8.0		

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 Agency 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. Agency Administered Quality Assurance (Acceptance).

1. Agency 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. The testing equipment and associated testing personnel for both the Engineer's QA testing and Contractor's QC testing must be used to conduct side by side correlation testing of the same concrete from the first load to verify correlation of both the Agency's and the Contractor's test results for temperature and air content of fresh concrete. Side by side testing correlation must be conducted whenever there is a change in QC or QA equipment and/or personnel for the project, or as directed by the Engineer. The temperature measuring devices used for QC and QA must correlate relative to each other within 2 degrees F. If the air content results of two tests conducted between the Engineer's and the Contractor's testers differ by more than 0.8 percent air by volume of concrete, an 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 of concrete placement in efforts to resolve issues relative to non-correlation.

C. Laboratory Facilities. The testing laboratory with responsibility for acceptance testing on this project is the Agency 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 Agency'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 will be taken from the concrete at the location as close to its final placement into the forms or on the grade as practical. If sampling from the discharge of the haul unit, the sample will be taken from approximately the middle one-third of the load.

Samples for acceptance will not be taken at the concrete production facility (batch plant), nor prior to discharge from a concrete pump (excluding tremie seal placement applications). 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.

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 T 23/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 Agency. Each initial curing facility must be capable of being locked, using an Agency 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 Agency 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 Agency'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 subsection c.5.E of this special provision.

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 will not be applied to small incidental quantities provided the concrete is of acceptable quality and all other provisions are met for the contract item. 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 – 8.0
Rejection Limit (percent)	<5.0 or >8.5
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).

$$PFs = \frac{\text{Tested Strength}}{\text{LSL}}$$

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 – 8.0	1.00
5.0 – 5.4	0.50
Below 5.0	Rejection
8.1 – 8.5	0.75
Above 8.5	Rejection

If the air content of fresh concrete is below 5.0 or above 8.5 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.

$$OLPF = (0.60 \times PFs) + (0.40 \times PFac)$$

$$ADJ = (OLPF - 1)(Price)$$

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 Agency.

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
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

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

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TRAFFIC CONTROL QUALITY AND COMPLIANCE

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
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
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
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
LONGITUDINAL PAVEMENT MARKING REMOVAL

OFS:CGB 1 of 2 APPR:MWB:JJG:02-26-14
FHWA:APPR:03-13-14

Delete subsection 812.03.F, on pages 615 and 616 of the Standard Specifications for Construction, in its entirety and replace it with the following:

F. Pavement Marking Removal. Remove pavement markings that conflict with proposed temporary traffic markings before making any changes in the traffic pattern. Place temporary pavement markings when pavement markings are removed or obscured for more than 24 hours before a change in the traffic pattern. Type R markings must be placed according to subsection 812.03.D.11 before the close of the workday.

Remove pavement markings using self-propelled truck mounted removal equipment. Use equipment capable of continuously vacuuming up the removal debris as the operation progresses. Immediately clean up and remove any debris that is generated. If the amount of debris generated during the removal process is greater than the vacuuming capability of the removal truck, a self-propelled sweeper operating immediately behind the removal equipment is required. Use a removal truck capable of eliminating the airborne dust while operating.

Remove pavement markings causing as little damage as possible to the surface texture of the pavement and by methods approved by the Engineer. Methods and equipment that may provide acceptable results are: shot blasting; water blasting; mechanical devices such as grinders, scarifiers, and wire brushes.

1. Asphalt Surfaces. Use any Engineer approved type of self-propelled truck mounted removal equipment except water blasting, provided that the equipment is capable of continually vacuuming the removal debris.

2. Concrete Surfaces to be Removed During Construction. Use any Engineer approved type of self-propelled truck mounted removal equipment provided that the equipment is capable of continually vacuuming the removal debris.

3. Concrete Surfaces to Remain in Place. Use an Engineer approved self-propelled truck mounted water blaster to minimize the scarring of the concrete surface. Use equipment capable of continually vacuuming the removal debris as approved by the Engineer.

Do not use paint or bituminous bond coat to cover existing and not applicable pavement markings. Use Type R markings only when authorized by the Engineer.

Add the following pay items to the Pay Item list in subsection 812.04, on pages 622 and 623 of the Standard Specifications for Construction:

Pavt Mrkg, Longit, Water Blasting, 6 inch or less Width, Rem.....Foot
Pavt Mrkg, Longit, Water Blasting, Greater than 6 inch Width, Rem .....Foot

Delete the first paragraph of subsection 812.04.N.1, on pages 628 and 629 of the Standard Specifications for Construction, in its entirety and replace it with the following:

1. **General.** The Department will pay for the removal of longitudinal markings as directed by the Engineer on all HMA surfaces and on concrete surfaces to be removed as **Pavt Mrkg, Longit, Rem**, of the width required. The unit prices for **Pavt Mrkg, Longit, Rem** pay items include the cost of removing existing longitudinal permanent markings and temporary Type NR markings, including tapers and transitions.

The Department will pay for the removal of longitudinal markings on concrete surfaces to remain in place as **Pavt Mrkg, Longit, Water Blasting, Rem**, of the width required. The unit prices for **Pavt Mrkg, Longit, Water Blasting, Rem** pay items include the cost of removing existing longitudinal permanent markings and temporary Type NR markings, including tapers, and transitions.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY WET REFLECTIVE LIQUID APPLIED PAVEMENT MARKINGS

OFS:CGB 1 of 2 APPR:MWB:MB:07-10-15
FHWA:APPR:08-04-15

a. Description. This work consists of furnishing and installing wet night retro reflective (WR) optics and temporary liquid applied pavement markings.

b. Materials.

1. Wet Night Retro Reflective Optics. Select WR optics from one of the following Manufacturers or a Department approved alternative that meets or exceeds the requirements in Table 1:

3M Corporation
Potter's Industries
Swarco

Table 1: Temporary Wet Reflective Liquid Applied Pavement Markings

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 according to the construction methods herein, the glass beads and optics will meet the minimum requirements shown in Table 1.

2. Binder Material for Temporary Wet Reflective Liquid Applied Pavement Markings. Select the liquid applied pavement marking from one of the following materials from section 811 of the Qualified Products List to use as a binder for the WR 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

c. Construction. Place liquid applied pavement marking material with equipment which meets subsection 811.03.A of the Standard Specifications for Construction. Place the material at a thickness of 18 mils while driving at a maximum rate of 8 miles per hour. Drop WR optics from the forward most bead applicator gun at a rate of 4 pounds per gallon. Drop glass beads at a rate of 6 pounds per gallon from the rear bead applicator gun.

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 Mrkg, Wet Retrflec Type NR, Paint, 4 inch, (color), Temp	Foot

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY WET REFLECTIVE TYPE R TAPE

OPR:CRB 1 of 1 APPR:MWB:MB:07-10-15
FHWA:APPR:07-28-15

a. Description. This work consists of furnishing, installing, maintaining and then removing a wet reflective temporary pavement marking system, in accordance with the contract and as directed by the Engineer.

b. Materials. Select one of the two temporary pavement marking systems listed below or an approved equal:

1. 3M. 3M Starmark Wet Reflective Removable Tape Series.

2. Brite-Line Technologies. Deltaline TWR (Temporary Wet Reflective).

c. Construction. Apply the selected tape in accordance with the Manufacturer's recommendations. Place as shown on the plans or as directed by the Engineer.

Ensure prior to installing either system the pavement surface is air blown or brushed to remove surface dust and dirt.

Ensure damaged or missing tape of more than 50 cumulative feet on solid lines and more than 2 consecutive skip lines, is replaced at no cost to the Department within 24 hours after notification by the Engineer. Failure to replace the tape within the given time period will result in a contract price adjustment as described in the Special Provision for Traffic Control Quality and Compliance.

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 Mrkg, Wet Reflective Type R, Tape, (color), Temp	Foot

Pavt Mrkg, Wet Reflective Type R, Tape, (color), Temp includes providing materials, placing, maintaining, removing, and disposing of the temporary pavement marking system. Payment will be per foot measured along the length of the placed pavement marking except for 8 inch gore markings and double solid lines which will be two times their measured length.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY PAVEMENT MARKING, TYPE R

OFS:CGB 1 of 1 APPR:MWB:MB:07-10-15
FHWA:APPR:07-28-15

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 – Type R.** Use temporary 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. Select Type R markings from the Qualified Products List.

When Type R tape is used as a 4-foot dash to temporarily mark finished pavement prior to the placement of permanent markings, offset it one foot from the permanent marking so that the permanent markings can be placed prior to the removal of the 4-foot dashes. Do not use 4-foot dashes to temporarily mark a solid edgeline.

i. Between April 15 and November 1, place Type R tape not used as a 4-foot dash according to the Manufacturer's specifications for existing temperature and pavement condition. Replace Type R tape that fails, as directed by the Engineer, at no additional cost to the Department.

ii. From November 2 to December 1 and March 15 to April 14, place Type R tape for all temporary shifts and tapers when pavement surfaces are dry and air temperatures are 40 degrees Fahrenheit and rising. All Type R tape placed during these times must be placed during approved daytime hours negotiated between the Engineer and the Contractor or daytime hours required in the contract. Do not place 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 pavement marking Type NR for all tapers and shifts when ambient air temperature is less than 40 degrees Fahrenheit. To remove the 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. Type R tape is not be placed between December 2 and March 14.

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
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
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
SUPERPAVE FINAL AGGREGATE BLEND REQUIREMENTS

CFS:KPK 1 of 2 APPR:JFS:CJB:04-03-15
FHWA:APPR:04-07-15

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

	Percent Passing Criteria (control points)					
	Mixture Number					
Standard Sieve	**5**	**4**	**3 Leveling Course**	**3 Base Course**	**2**	**LVSP** (a)
1½ inch	—	—	—	—	100	—
1 inch	—	—	100	100	90–100	—
3/4 inch	—	100	90–100	90–100	≤90	100
1/2 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	35–49	23–49	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
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

SUPPLEMENTAL SPECIFICATION
FOR
ERRATA TO THE 2012 STANDARD SPECIFICATIONS

Page	Subsection	Errata
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 MDEQ Michigan Department of Environmental Quality 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 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 "MDEQ" in this subsection.

Page	Subsection	Errata
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 "MDEQ" 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.
83	108.10.C.1	In Table 108-1 delete the last row of the table and replace it with the following: ≥50,000,000 4,500
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.
150	208.01	Change "MDNRE" to "MDEQ" 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."

Page	Subsection	Errata
		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."
190	401.04	Change the fourth pay item from the end of the list to read as follows: “Steel Casing Pipe, __ inch, Tr Det __.”
200	402.04	Change the third pay item from the top of the list to read as follows: “Sewer, Cl __, __ inch, Jacked in Place”
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 **Minor Traf Devices** or **Traf Regulator Control**."
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.

Page	Subsection	Errata
		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: "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."

Page	Subsection	Errata
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 **HMA Surface, Rem**." 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 **Pavt, Rem** 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 **Micro-Surface**, 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."

Page	Subsection	Errata
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.
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."
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 forming of succeeding portions may occur, provided the wet cure is maintained.”

Page	Subsection	Errata
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.”
414	707.01.B	Change the last sentence of the first paragraph to read "For horizontally curved or continuous span or cantilevered span girders the Engineer will consider intermediate cross frames and connection plates and stiffeners as primary members."
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 A 325 Bolts"
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 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”.

Page	Subsection	Errata
		Change the first sentence to read: "Submit shop drawings in accordance with subsection 104.02." Change the fourth sentence to read: "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 **Bridge Barrier Railing** 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 "**Reflective Marker, Permanent Barrier.**"
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

Page	Subsection	Errata
		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: "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. **Structural Steel for Retrofitting and Welded Repairs.** 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 **Field Repair of Damaged Coating (Structure No.)** 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."

Page	Subsection	Errata
521	717.04.B	This subsection should read "The unit price for **Drain Casting Assembly** includes the cost of providing and installing the downspout and, if necessary, the lower bracket to the drain casting."
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: “2. **Permanent Casing.”**
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 **Railing for Steps** 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 **Guardrail Salv** and **Guardrail, Mult, Salv** 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 **Field Office, Cl** __ 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 **Field Office, Utility Fees** 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

Page	Subsection	Errata
		"K. **Drilled Piles for Cantilever and Truss Foundations.** Construct drilled piles for cantilever and truss foundations in accordance with section 718."
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
596	811.03.G	Delete this subsection in its entirety.
597*	811.03.H	Rename this subsection as follows: "G. **Raised Pavement Marker (RPM) Removal."**
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, 2nd 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" Change the last item in the list to read: "Witness, Log, Layout, $1000.00"
599	811.04.B	Delete this subsection in its entirety.
599	811.04	Rename the following subsections as follows: "B. **Call Back.** C. **Pavement Marking Removal.** D. **Material Deficiency."**
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."

Page	Subsection	Errata
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	Add the following sentence after the first paragraph of this subsection: “Use an NCHRP 350, Test Level 3, or MASH accepted attenuation system.”
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.d	Add the following sentence after the first paragraph of this subsection: “Use an NCHRP 350, Test Level 3, or MASH accepted attenuation system.”
610	812.03.D.11.a	Change "Type R tape" to read "Type R marking" in three locations in this subsection.
613	812.03.D.14.a.iii	Change the sentence in this subsection to read "Place an ET Type or SKT Type extruder guardrail ending on both blunt guardrail ends."
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."

Page	Subsection	Errata
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 **Conc Barrier Ending, Temp, Relocated** 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."
634	813.03.C.3	Change the reference "903.07.A" in the paragraph of this subsection to read "907.07.B".

Page	Subsection	Errata
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 **(Botanical Name)** 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."
663*	819.01	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

Page	Subsection	Errata
		Safety Code, and the MDLARA for those items not identified in the contract." 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."
671	819.03.F.1	Change the paragraph to read: "Install light standard foundations as shown on the plans and the standard plans, as applicable."
673	819.03.G.4.b	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."
673	819.03.G.4.b	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."
678*	819.04	Delete the last item in the list on this page reading: "DB Cable, in Conduit, 600 Volt, (number) 1/C# (size) ..... Foot"
680	819.04	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, 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 **Conduit, Rem** 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 **Conduit, (type), __ inch** and **Conduit, DB, (number), __ inch** 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 **DB Cable, in Conduit, Rem** 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:

Page	Subsection	Errata
		"The unit prices for **Cable, Rem** and **Cable, (type), Rem** 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 **Cable, Pole, (type), Disman** 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 "**Fdns**" to read "**Fdn**" in four instances in this subsection.
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: "http://www.ngs.noaa.gov/heightmod/GuidelinesPublications.shtml"
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."
720	823.04	Change the pay item seventh from the bottom of the list to read: "Water Shutoff, Adj, Temp, Case __"

Page	Subsection	Errata
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: “**Percent of Original Contract Amount Earned”**
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.”
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".

Page	Subsection	Errata
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 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:

Page	Subsection	Errata
		"High-strength bolt fasteners for structural joints must meet the requirements of ASTM 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."
772	906.08	Change the last sentence of the first paragraph to read "Washers must be made from austenitic stainless steel ASTM A 276 UNS designation S31600 or S31603."
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."
783*	908.09.A	Change the title of this subsection and the first sentence to read "A. **Base Plates, Angle, and Non-Tubular Post Elements.** Galvanized base plates, angle, rail splice elements, and non-tubular post elements must meet the requirements of ASTM A 36 and ASTM A 123".
783*	908.09.B	Change the title of this subsection and the first sentence to read “B. **Rail Elements and Tubular Post Elements.** Rail elements and tubular post elements must meet the requirements of ASTM A 500, for Grade B and subsection 908.09.B and be galvanized in accordance with ASTM A 123”.
784	908.09.C	Change the second sentence to read: "Heavy hex nuts must meet the requirements of ASTM A 563." Change the third sentence to read: "Bolts, used as rail fasteners, washers and nuts must meet the requirements of ASTM A 325, Type 1." Change the sixth sentence to read:

Page	Subsection	Errata
		"All flat washers must meet the requirements of ASTM F 436." Add the following sentence to the end of the subsection: "Bolts, nuts, washers and other hardware must be hot-dip galvanized in accordance with AASHTO M 232."
785	908.11.B	Change the second paragraph to read: "Bolts, nuts, and round washers for guardrail, other than at bridge barrier railings, must meet the requirements of ASTM A 307, ASTM A 563 (Grade A with Supplementary Requirements S1 of ASTM A 563), and ASTM F 436, respectively." Change the third paragraph to read: "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." Change the fifth paragraph to read: "Bolts, nuts, and washers for connections at bridge barrier railings must conform to ASTM A 325 Type 1 galvanized high-strength structural bolts with suitable nuts and hardened washers."
787	908.14.B	Add the following sentence to the end of the third paragraph of this subsection: "Exposed threaded ends of anchor bolts must be galvanized a minimum of 20 inches." Change the sixth paragraph in this subsection to read: "Provide washers meeting the requirements of ASTM F 436 for circular washers."
787	908.14.B	Change the second sentence of the fourth paragraph to read “After coating, the maximum limit of pitch and major diameter for bolts with a 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."

Page	Subsection	Errata
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."
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: "C. **Lubricant-Adhesive for Neoprene Joint Seals**. The lubricant-adhesive must be a single-component moisture-curing polyurethane and aromatic hydrocarbon solvent mixture meeting ASTM D 2835, Type 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	914.12	In the first sentence of this subsection change "AASHTO Division II" to read "AASHTO LRFD Bridge Construction Specifications".

Page	Subsection	Errata
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. **Class A.** 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 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.”

Page	Subsection	Errata
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.”
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".
953*	Pay Item Index	Delete the following pay item reading: “DB Cable, in Conduit, 600 Volt, (number) 1/C# (size) .....678 819”

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

Page	Subsection	Errata
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, 2nd 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: "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	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"

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

Page	Subsection	Errata
969	Pay item Index	Change the following pay item in the list to read: "Witness, Log, Layout, $1000.00"
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) lb	Cement Content per cyd (b,c) sack	Slump (inches) Type A, D or no Admixture	Slump (inches) Type MR, F, or G Admixtures (g) Before Admixture	Slump (inches) Type MR, F, or G Admixtures (g) After Admixture (Type MR)	Slump (inches) Type MR, F, or G Admixtures (g) After Admixture (Type F or G)	Minimum Strength of Concrete (f) Flexural (psi) 7 Day	Flexural (psi) 14 Day	Flexural (psi) 28 Day (Class Design Strength)	Compressive (psi) 7 Day	Compressive (psi) 14 Day	Compressive (psi) 28 Day (Class Design Strength)
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
		526 (d)	5.6										
S3	402, 403, 803, 804, 806	517	5.5	0 - 3	0 - 3	0 - 6	0 - 7	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		

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

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	100/100	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.

Table 912-10
Minimum Retention Requirements

Preservative	Minimum Retention, (pcf)			AWPA Standard
	Guardrail Posts	Sign Posts	Blocks	
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 Recommendationsfor 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_2O_5/1000 ft.2)	Recommendation (lbs. P_2O_5/1000 ft.2)	Recommendation (lbs. P_2O_5/1000 ft.2)	Recommendation (lbs. P_2O_5/1000 ft.2)
0	0	4.4	3.4	2.5	
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	2.5 lbs. year (Maximum single application of 1.5 lbs.)
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	109 lbs/acre year (maximum single application of 65 lbs/acre)
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			
32	21.3	0.2			
34	22.7	0.0			

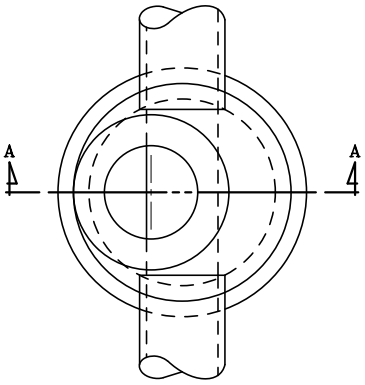
Web resources: www.turf.msu.edu or www.bephosphorussmart.msu.edu

CITY OF OWOSSO
GOULD STREET RESURFACING
M-71 TO M-21

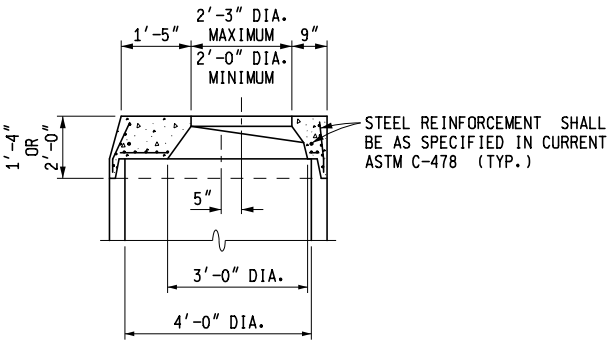
MDOT SPECIAL DETAILS

PLAN SERIES	TITLE
R-1-G	DRAINAGE STRUCTURES
R-62-H	GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)
R-83-C	UTILITY TRENCHES

FLEIS&VANDENBRINK
DESIGN. BUILD. OPERATE.
9475 Holly Rd, Suite 201
Grand Blanc, MI 48439
P: 810.743.9120
F: 810.743.1797

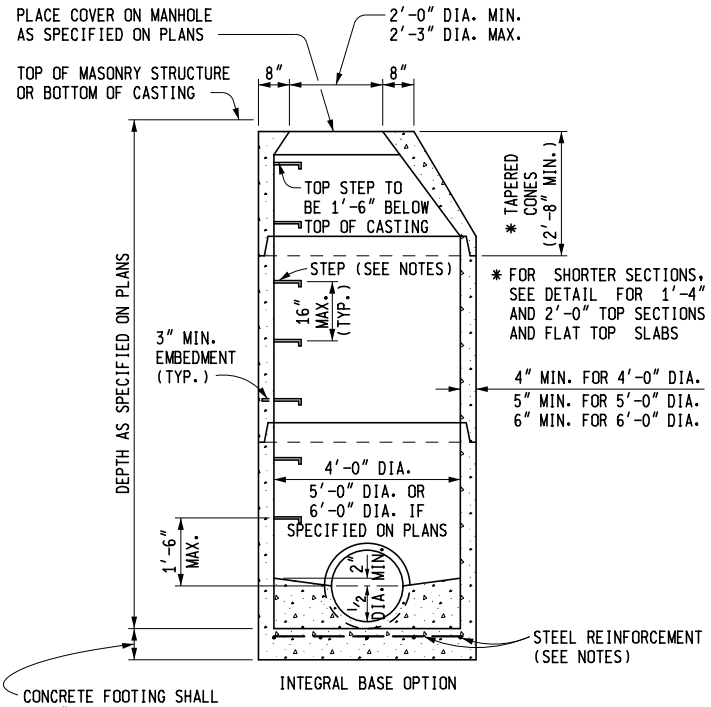


PLAN VIEW



DETAIL FOR 1′-4″ & 2′-0″ TOP SECTIONS

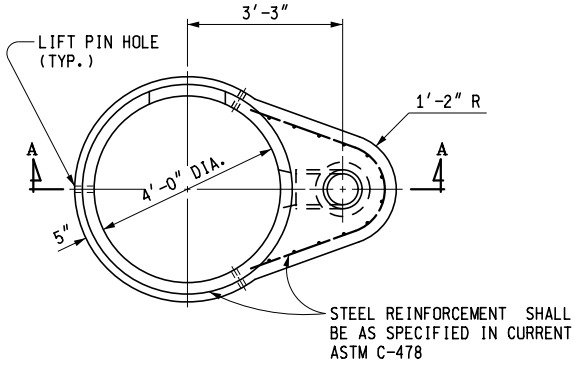
SHAPE MAY VARY FROM DETAIL SHOWN BUT MUST COMPLY WITH ASTM C-478 AND JOINTS SHALL BE COMPATIBLE WITH THE RISER

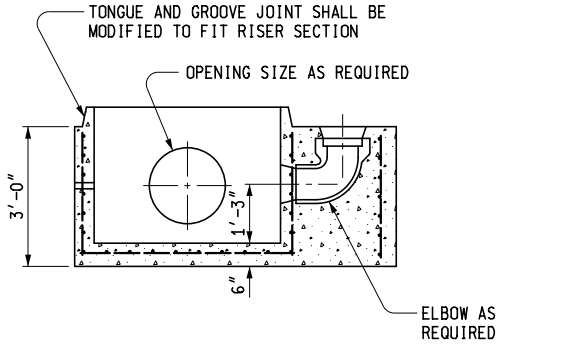


SECTION A - A

TYPICAL MANHOLE

PRECAST REINFORCED CONCRETE SHOWN
OTHER OPTIONS INCLUDE CONCRETE BLOCK, BRICK, OR CAST-IN-PLACE WALL SECTIONS
SEE TYPICAL WALL SECTIONS FOR WALL THICKNESS





SECTION A - A

TYPICAL PRECAST REINFORCED BOTTOM SECTION FOR DROP MANHOLE

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

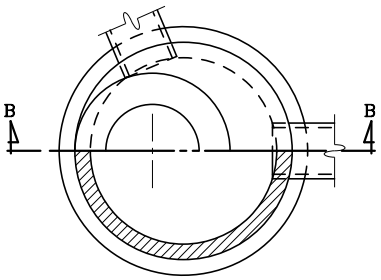
APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

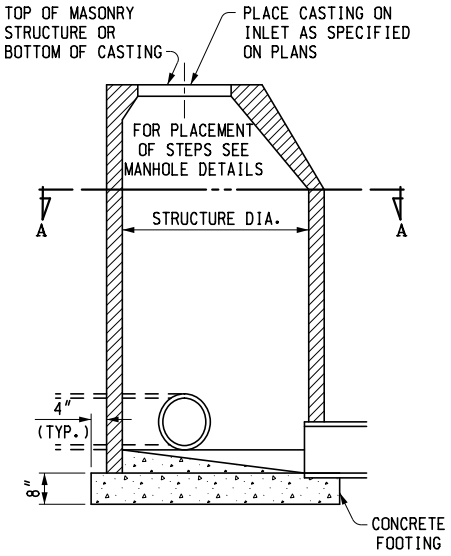
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 1 OF 9



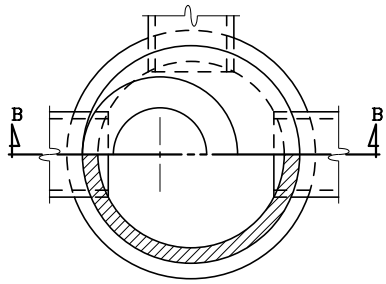
HALF SECTION A - A



SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS

SECTION B - B

INLET



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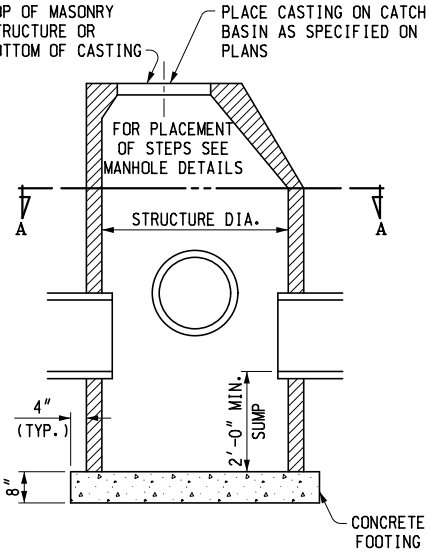
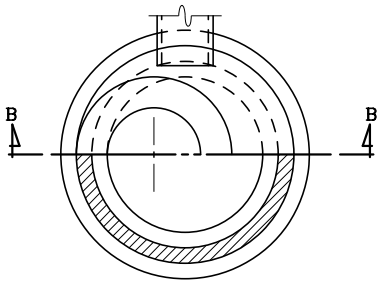


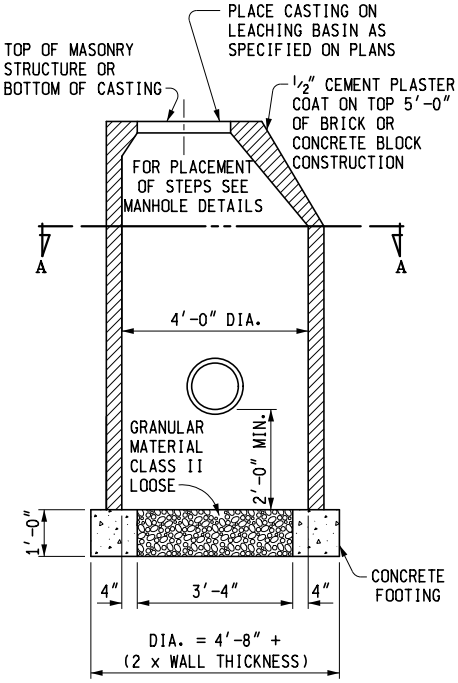
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS

SECTION B - B

CATCH BASIN



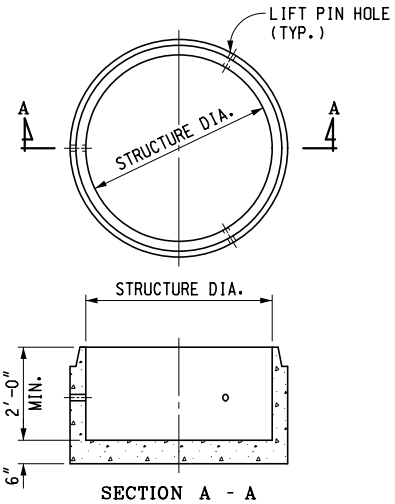
HALF SECTION A - A



SEE MANHOLE DETAILS FOR BASE OPTIONS

SECTION B - B

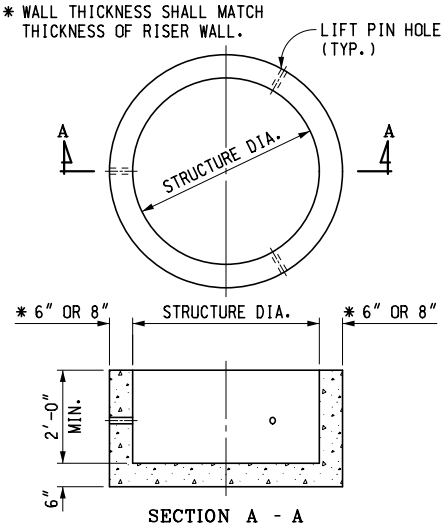
LEACHING BASIN



SECTION A - A

SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS

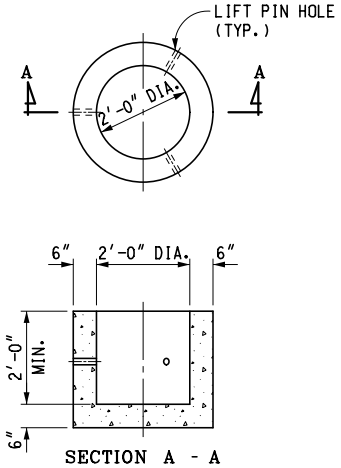
PRECAST SUMP FOR PRECAST RISERS



SECTION A - A

SEE TYPICAL BRICK AND BLOCK SECTION FOR SIZE AND BASE OPTIONS

PRECAST SUMP FOR BRICK OR BLOCK CONSTRUCTION



SECTION A - A

PRECAST SUMP FOR 2'-0" DIA. STRUCTURES

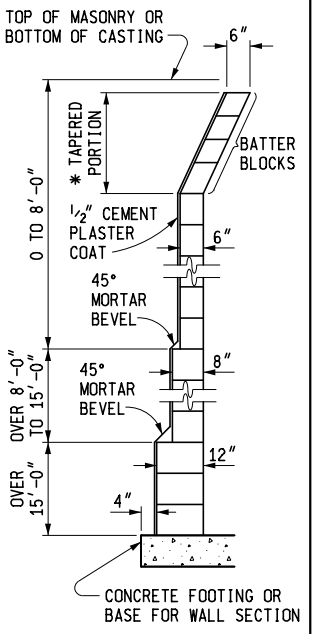
MICHIGAN DEPARTMENT OF TRANSPORTATION

BUREAU OF DEVELOPMENT STANDARD PLAN FOR

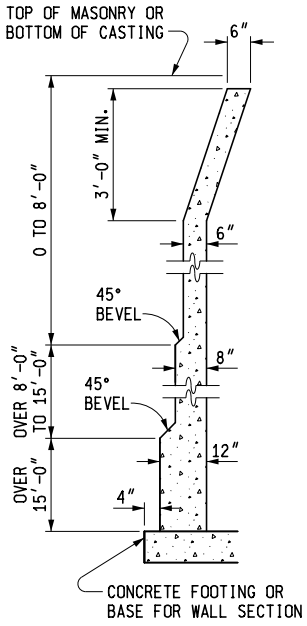
DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 2 OF 9

* 4 BLOCK MIN. FOR 4′-0″ DIA. STRUCTURE
6 BLOCK MIN. FOR 5′-0″ DIA. STRUCTURE
6 BLOCK MIN. FOR 6′-0″ DIA. STRUCTURE

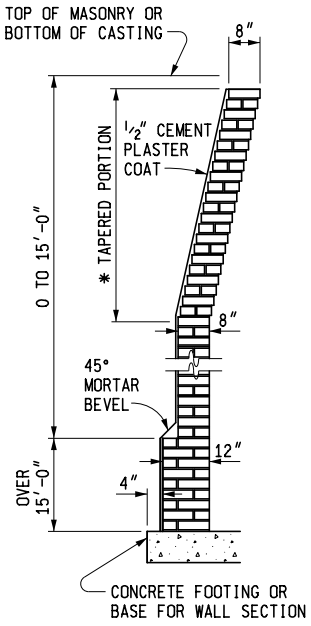


TYPICAL CONCRETE BLOCK WALL SECTION

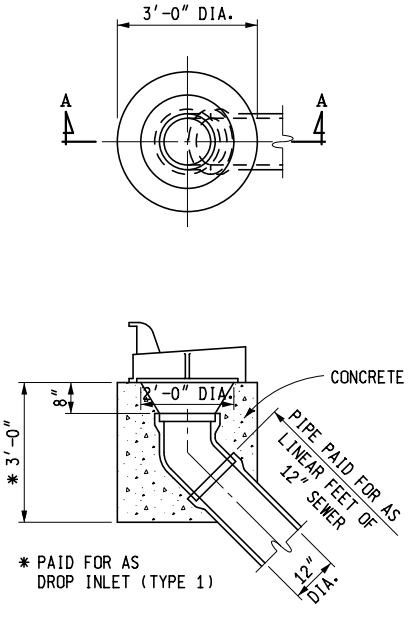


TYPICAL CAST-IN-PLACE CONCRETE WALL SECTION

* 5′-0″ MIN. FOR 4′-0″ DIA. STRUCTURE
6′-0″ MIN. FOR 5′-0″ DIA. STRUCTURE
6′-0″ MIN. FOR 6′-0″ DIA. STRUCTURE

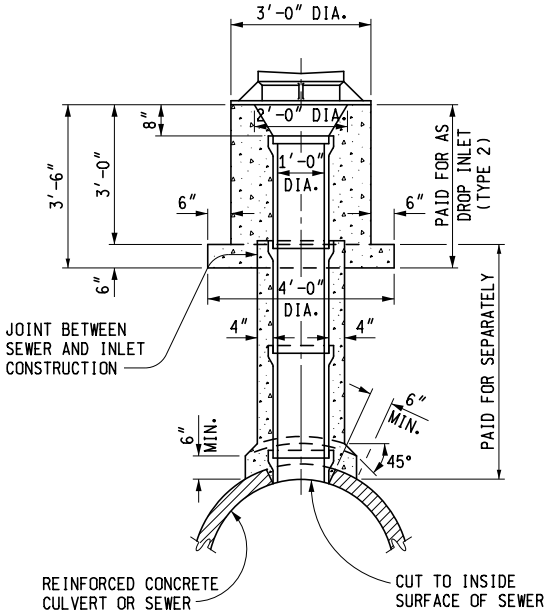


TYPICAL BRICK WALL SECTION



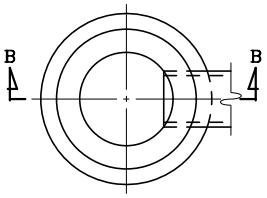
SECTION A - A

DROP INLET (TYPE 1)

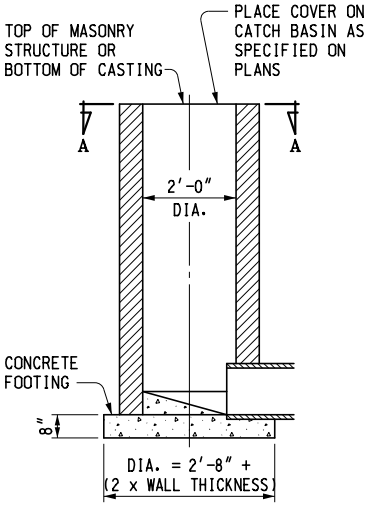


BACKFILL SHALL BE PLACED TO BOTTOM OF INLET AND COMPACTED BEFORE CONSTRUCTING THE INLET

DROP INLET (TYPE 2)

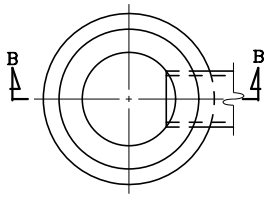


SECTION A - A

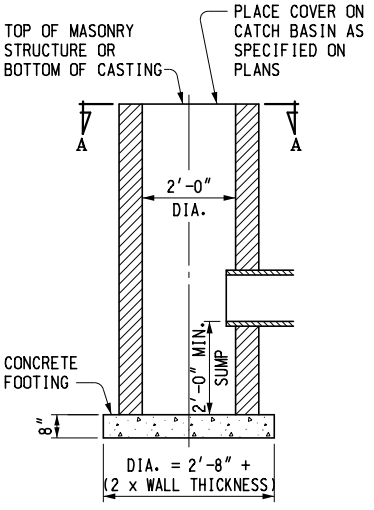


SECTION B - B

INLET



SECTION A - A



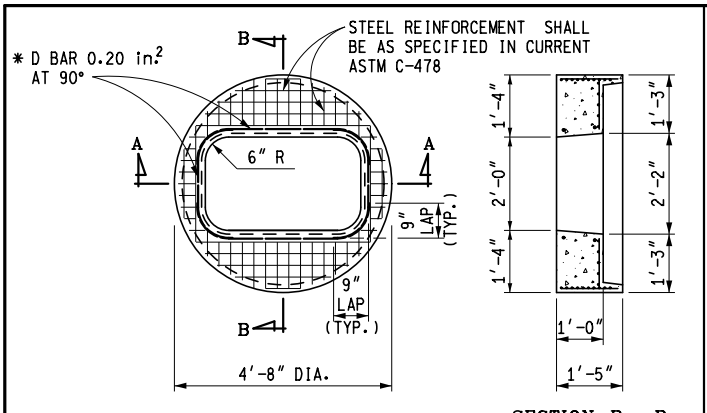
SECTION B - B

CATCH BASIN

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

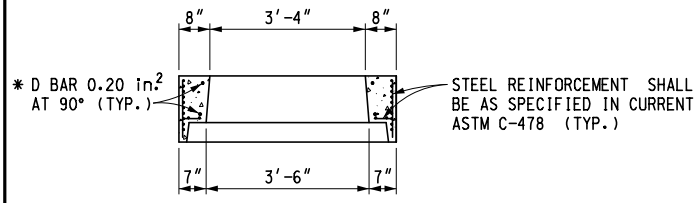
DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 3 OF 9



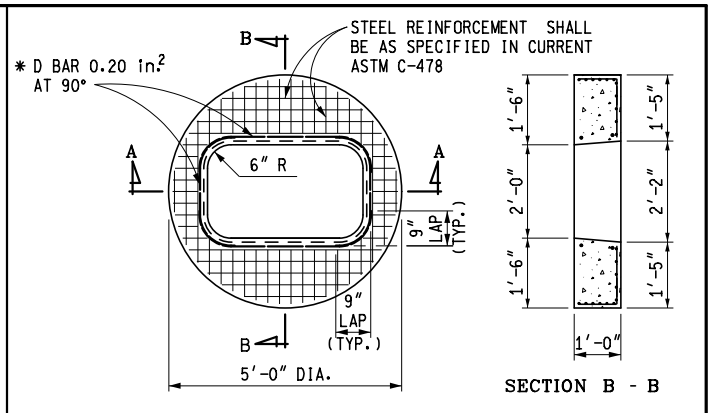
SECTION B - B

* D BARS MAY BE BENT AT A SMALLER RADIUS RATHER THAN PARALLELING THE RADIUS IN THE DRAIN OPENING



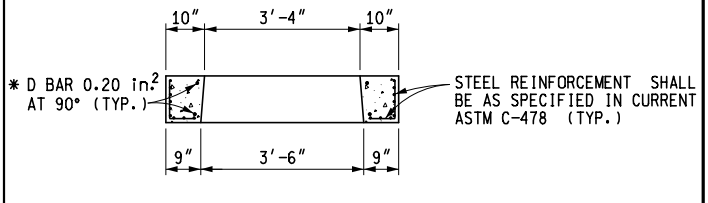
SECTION A - A

PRECAST FLAT SLAB TOP FOR PRECAST CONCRETE STRUCTURE, 2' x 4' CASTING



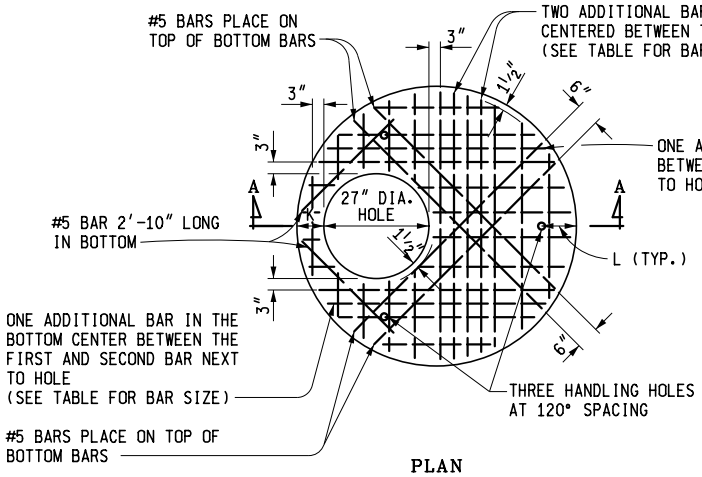
SECTION B - B

* D BARS MAY BE BENT AT A SMALLER RADIUS RATHER THAN PARALLELING THE RADIUS IN THE DRAIN OPENING

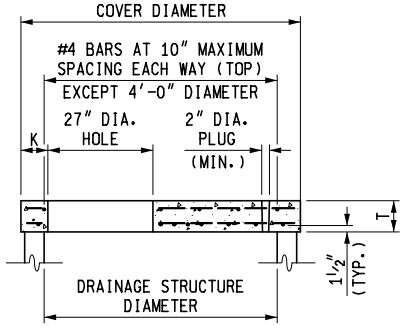


SECTION A - A

PRECAST FLAT SLAB TOP FOR MASONRY STRUCTURE, 2' x 4' CASTING



PLAN
(SHOWING BOTTOM LAYER OF REINFORCEMENT)



SECTION A - A

TABLE OF DIMENSIONS					
STRUCTURE DIAMETER	COVER DIAMETER	T	K	L	BAR MAXIMUM SPACING (BOTTOM EACH WAY)
* 4'-0"	58"	6"	6"	8"	#5 AT 6"
5'-0"	72"	8"	7"	9"	#5 AT 7"
6'-0"	86"	8"	8"	10"	#5 AT 6"
7'-0"	101½"	12"	8¾"	11"	#5 AT 5"
8'-0"	114"	12"	9"	11"	#6 AT 6"
9'-0"	128"	12"	10"	12"	#5 AT 6"
10'-0"	140"	12"	10"	13"	#5 AT 6"

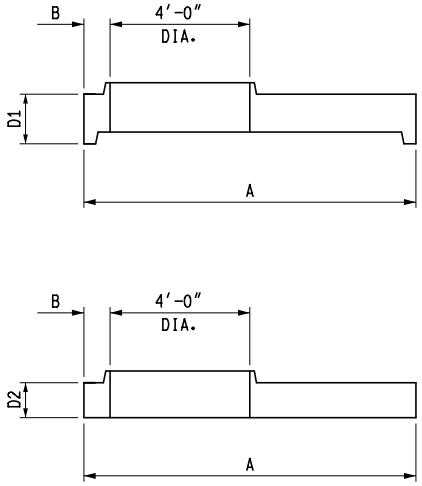
* ONLY BOTTOM LAYERS OF STEEL NECESSARY

PRECAST REINFORCED CONCRETE FLAT SLAB TOP

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

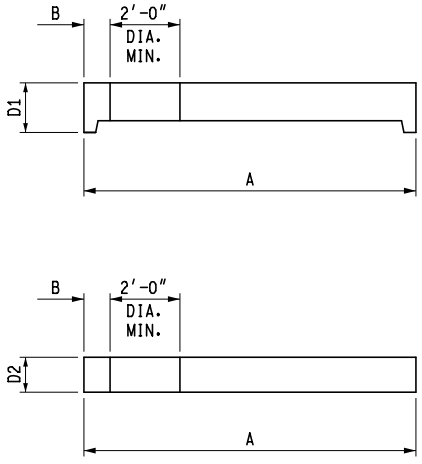
DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 4 OF 9



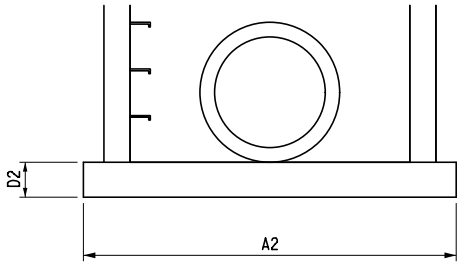
PRECAST REDUCER CAP

REDUCER CAP DIMENSIONS				
STRUCTURE DIAMETER	CAP DIAMETER "A"	B	CAP DEPTH "D1"	CAP DEPTH "D2"
7′-0″	101½″	8¾″	1′-5″	12″
8′-0″	114″	9″	1′-5″	12″
9′-0″	128″	10″	1′-5″	12″
10′-0″	140″	10″	1′-6″	12″



PRECAST FLAT SLAB TOP

FLAT SLAB TOP DIMENSIONS				
STRUCTURE DIAMETER	COVER DIAMETER "A"	B	COVER DEPTH "D1"	COVER DEPTH "D2"
7′-0″	101½″	8¾″	1′-5″	12″
8′-0″	114″	9″	1′-5″	12″
9′-0″	128″	10″	1′-5″	12″
10′-0″	140″	10″	1′-6″	12″



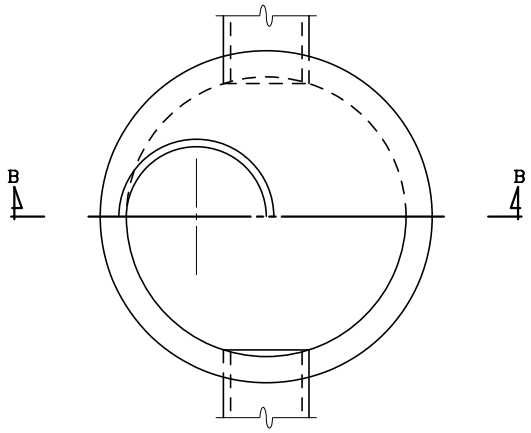
SEPARATE BASE OPTION

BASE AND RISER DIMENSIONS					
STRUCTURE DIAMETER	BASE DIAMETER "A1"	BASE DIAMETER "A2"	MIN. WALL THICKNESS "T"	BASE DEPTH "D1"	BASE DEPTH "D2"
7′-0″	101½″	108″	7″	8″	12″
8′-0″	114″	128″	8″	8″	12″
9′-0″	128″	140″	9″	8″	12″
10′-0″	140″	154″	10″	8″	12″

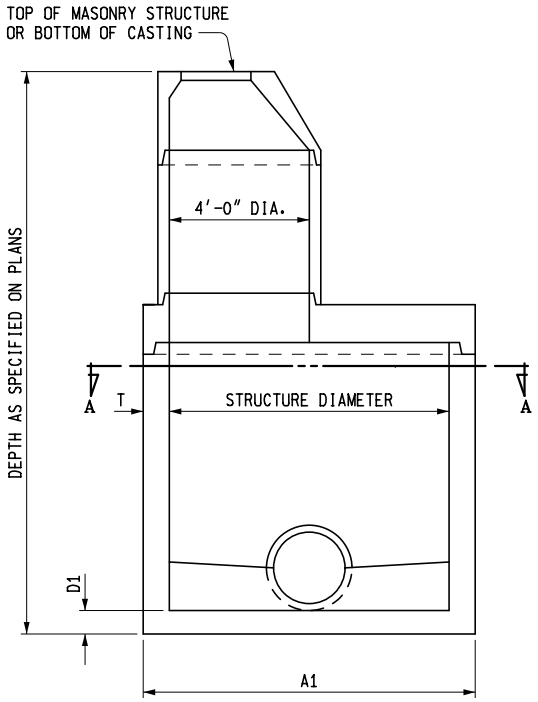
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

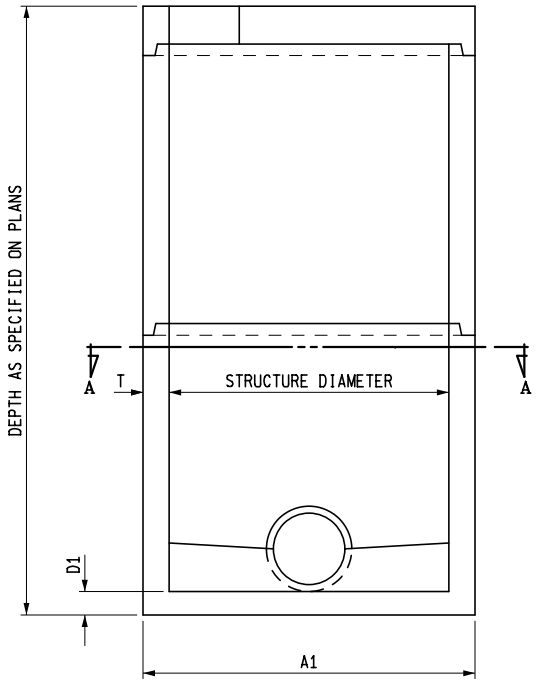
F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 5 OF 9



HALF SECTION A - A



SECTION B - B
SHOWING REDUCER CAP



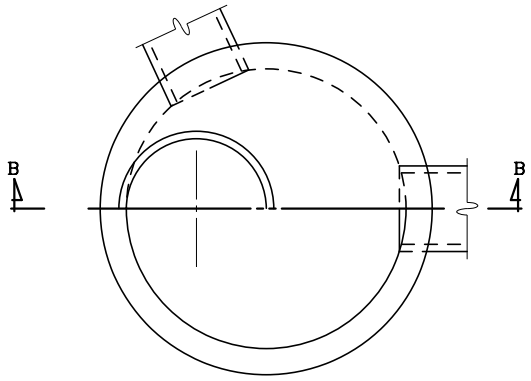
SECTION B - B
SHOWING FLAT SLAB TOP

PRECAST MANHOLE

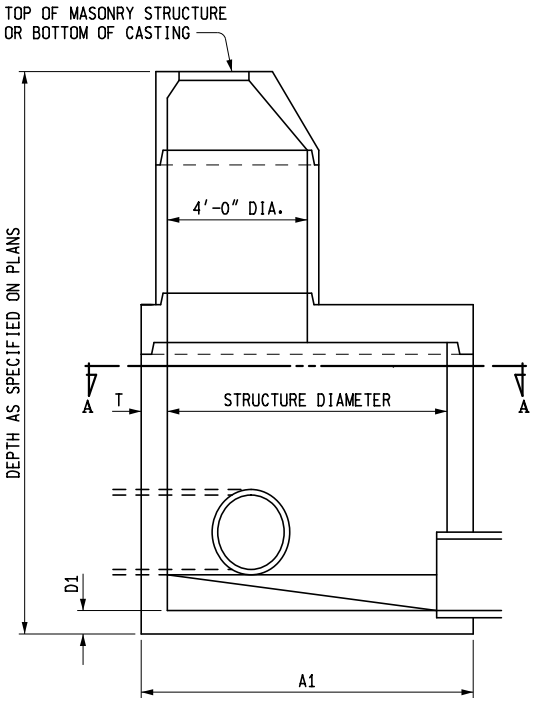
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

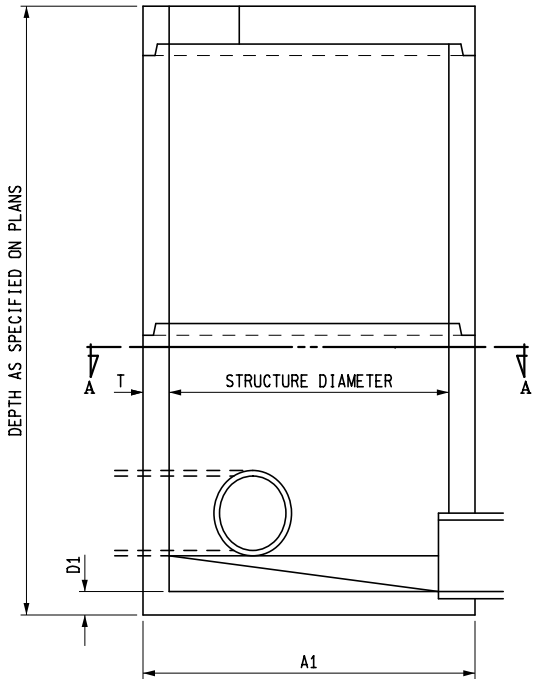
F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 6 OF 9



HALF SECTION A - A



SECTION B - B
SHOWING REDUCER CAP



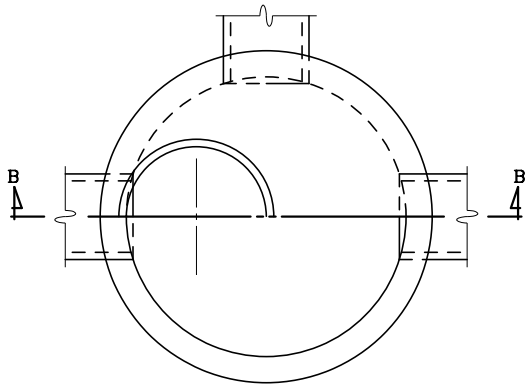
SECTION B - B
SHOWING FLAT SLAB TOP

PRECAST INLET

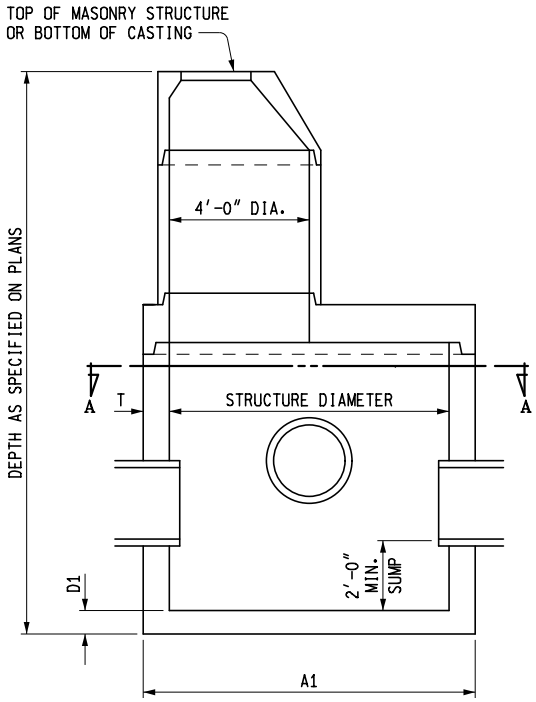
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

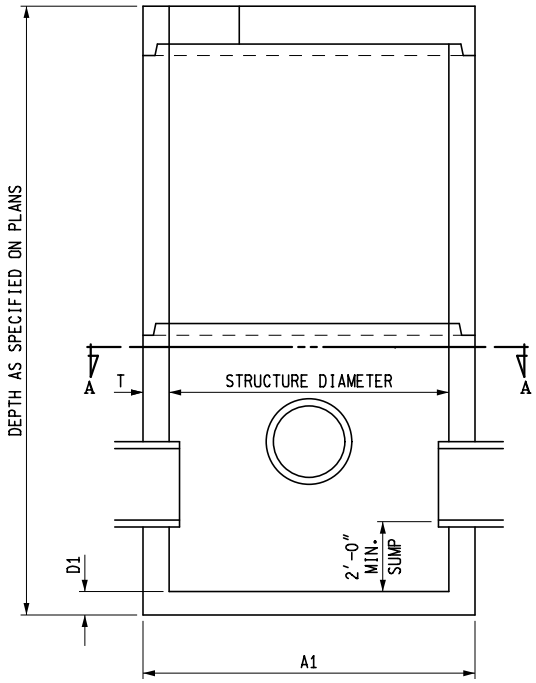
F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 7 OF 9



HALF SECTION A - A



SECTION B - B
SHOWING REDUCER CAP



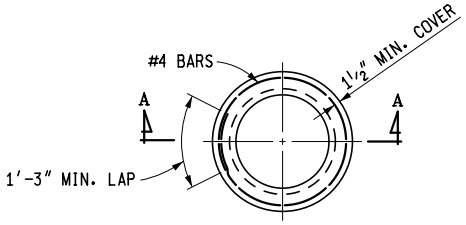
SECTION B - B
SHOWING FLAT SLAB TOP

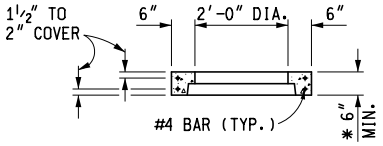
PRECAST CATCH BASIN

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 8 OF 9





SECTION A - A

* WHEN RISER TONGUE LENGTH IS GREATER THAN 3", USE 2 TIMES THE TONGUE LENGTH.

NOTE: PRECAST RISER SHALL FULLY ENGAGE THE TONGUE OF THE RISER PIPE.

PRECAST RISER RING

(FOR 2'-0" DIAMETER STRUCTURE)

NOTES:

THE DRAINAGE STRUCTURE COVERS ALLOWED FOR USE ON THESE DRAINAGE STRUCTURES ARE SPECIFIED IN SUBSEQUENT STANDARD PLANS AND ARE INTERCHANGEABLE ON ANY STRUCTURE.

THE TOPS OF MASONRY STRUCTURES SHALL BE SUFFICIENTLY LOW TO PERMIT PROPER ADJUSTMENT OF COVER TO GRADE USING MORTAR OR BRICK AS DIRECTED BY THE ENGINEER.

PREMIUM JOINTS ARE REQUIRED ON ALL SANITARY MANHOLES. SEE ASTM DESIGNATION C-923.

GRANULAR MATERIAL CLASS III SHALL BE USED IN BACKFILLING AROUND ALL STRUCTURES THAT FALL WITHIN THE 1:1 INFLUENCE LINES FROM THE EDGE OF PAVEMENT OR BACK OF CURB.

STEPS FOR DRAINAGE STRUCTURES SHALL BE OF AN APPROVED DESIGN AND MADE FROM CAST IRON, ALUMINUM, OR PLASTIC COATED STEEL. RUNGS SHALL BE A MINIMUM OF 10" IN CLEAR LENGTH, DESIGNED TO PREVENT THE FOOT FROM SLIPPING OFF THE END. THE MINIMUM HORIZONTAL PULL OUT LOAD SHALL BE 400 LBS. THE MINIMUM VERTICAL LOAD SHALL BE 800 LBS.

THE BELL SHALL BE REMOVED FOR THE FIRST LENGTH OF OUTLET PIPE PROJECTING THROUGH THE WALL OF THE MANHOLE.

PRECAST CONCRETE SECTIONS, SUMPS, AND FLAT TOP SLABS SHALL BE BUILT ACCORDING TO CURRENT ASTM C-478 AND ACCORDING TO DETAILS SPECIFIED ON THIS PLAN. PRECAST REINFORCED CONCRETE FLAT TOP SLAB SHALL BE MARKED TO SHOW LOCATION OF REINFORCEMENT. THE WALLS OF THE PRECAST UNITS MAY HAVE A SLIGHT TAPER TO ALLOW FOR FORM REMOVAL. PRECAST CONCRETE 2'-0" DIAMETER DRAINAGE STRUCTURES SHALL HAVE A MINIMUM 3" WALL THICKNESS WITH A 6" MINIMUM BEARING SURFACE ON TOP. SEE PRECAST RISER RING FOR 2'-0" DIAMETER STRUCTURE.

THE INSIDE DIAMETER OF PIPES ENTERING OR LEAVING PRECAST DRAINAGE STRUCTURES SHALL BE LESS THAN THE INSIDE DIAMETER OF THE DRAINAGE STRUCTURE MINUS 2'-0". A PIPE LEAVING A 2'-0" DIAMETER DRAINAGE STRUCTURE IS ALLOWED TO HAVE 1'-0" INSIDE DIAMETER OR LESS.

THE NUMBER OF PIPE OPENINGS IN A RISER SHALL BE DETERMINED BY THE DESIGNER. SPACING BETWEEN OPENINGS SHALL BE 1'-0" MINIMUM. OPENINGS MAY BE CONSTRUCTED BY CASTING OR SCRIBING IN PRECAST STRUCTURES DURING FABRICATION OR BY CORING THE CURED CONCRETE.

PRECAST CONCRETE FOOTINGS OR BASES SHALL BE REINFORCED WITH #4 BARS SPACED AT 1'-0" BOTH WAYS OR WITH TWO LAYERS OF WELDED WIRE FABRIC OF EQUIVALENT CROSS SECTIONAL AREA LAID AT RIGHT ANGLES AND WIRED TOGETHER. REINFORCEMENT SHALL BE PLACED IN TOP OF FOOTING AND SHALL BE MARKED.

PRECAST CONCRETE FOOTINGS SHALL BE SUPPORTED BY A COMPACTED 6" GRANULAR SUBBASE.

THE MINIMUM WALL THICKNESS FOR ALL 2'-0", 4'-0", 5'-0", AND 6'-0" DRAINAGE STRUCTURES USING CONCRETE BLOCK, BRICK, OR CAST-IN-PLACE CONCRETE SHALL BE AS SPECIFIED IN TYPICAL WALL SECTIONS.

THE CONICAL SECTION OF MANHOLES OR CATCH BASINS CONSTRUCTED OF BLOCK OR BRICK SHALL BE SHROUDED WITH GEOTEXTILE FABRIC TO A MINIMUM DEPTH OF 5'-0" OR THROUGH THE FROST ZONE. ENOUGH GEOTEXTILE MATERIAL SHALL BE LEFT ON THE TOP (8" OR MORE) TO ROLL OVER THE TOP OF THE CONE.

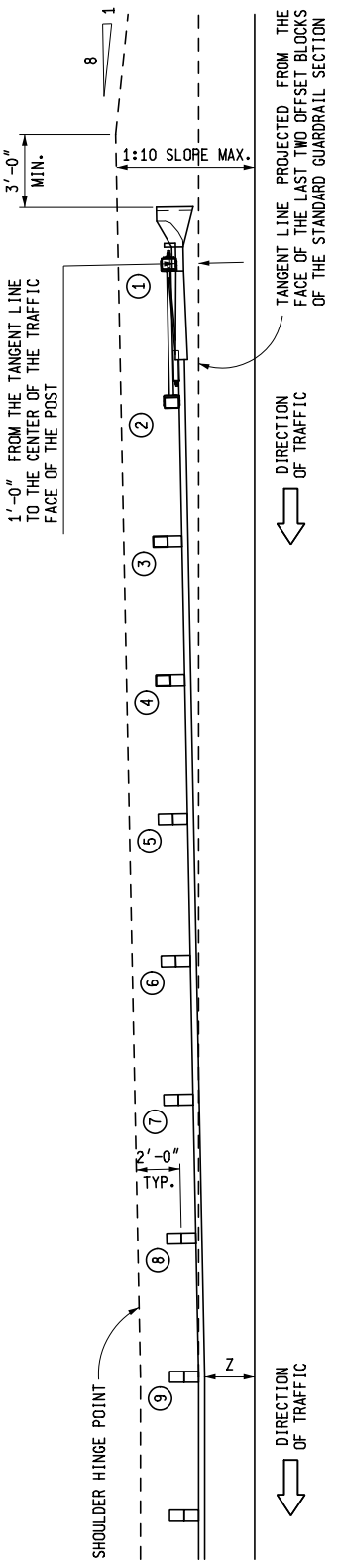
PREFORMED HIGH DENSITY POLYSTYRENE FILLER PIECES MAY BE USED TO CHANNEL FLOW IN THE BOTTOM OF MANHOLES PROVIDED THEY HAVE AT LEAST 2" OF CONCRETE COVER. THE USE OF THIS MATERIAL FOR CHANNEL FLOW IS RESTRICTED TO MANHOLES WHERE THE BOTTOM SECTION IS NOT SUBJECT TO FREEZING. THE USE OF THIS MATERIAL MUST BE APPROVED BY THE ENGINEER.

MICHIGAN DEPARTMENT OF TRANSPORTATION

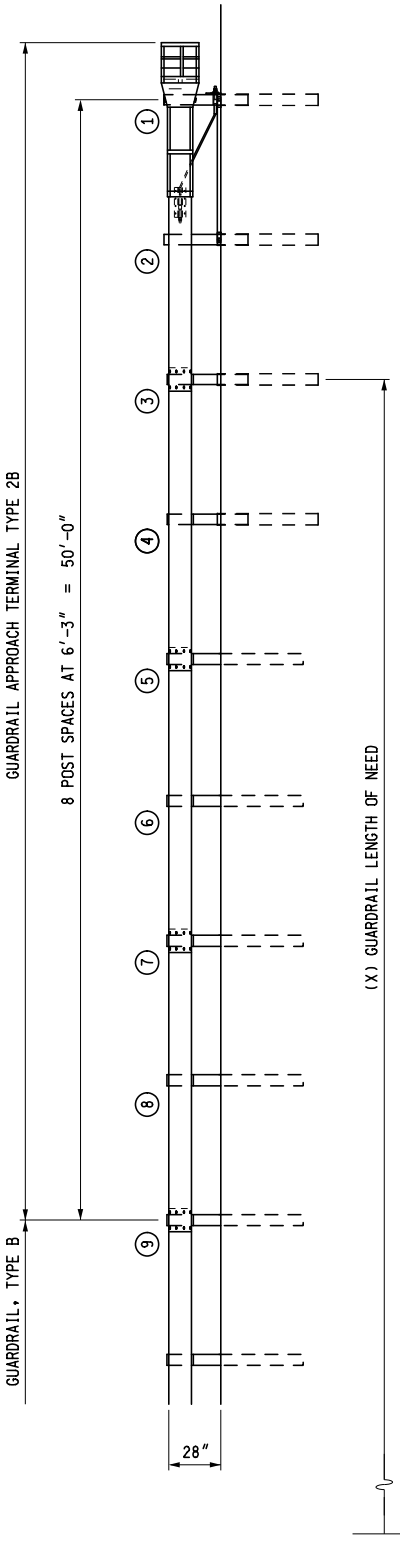
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	7-28-2015 PLAN DATE	R-1-G	SHEET 9 OF 9



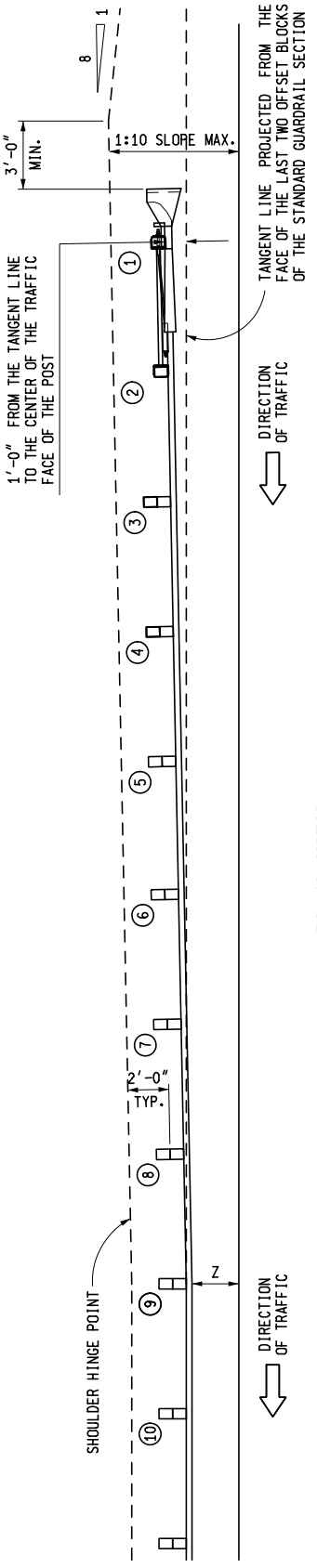
PLAN VIEW



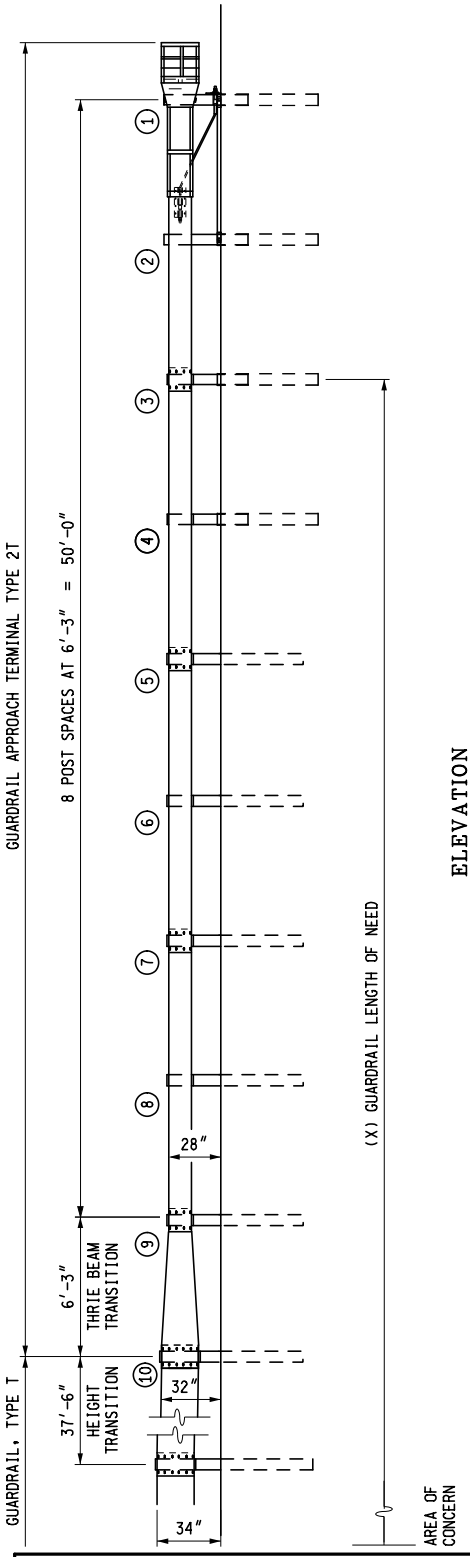
ELEVATION

GUARDRAIL APPROACH TERMINAL TYPE 2B

MDOT Michigan Department of Transportation PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)		
		_____ F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 1 OF 5



PLAN VIEW



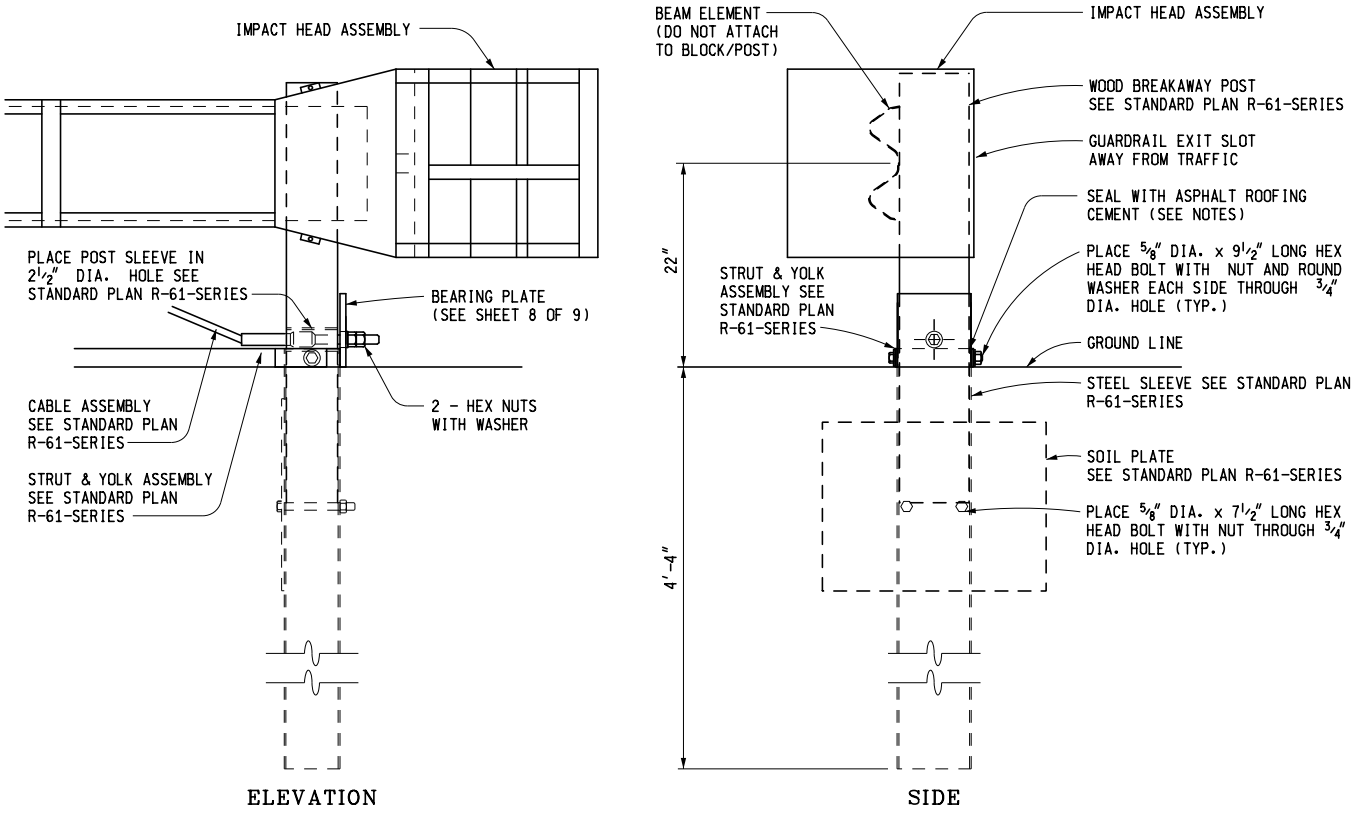
ELEVATION

GUARDRAIL APPROACH TERMINAL TYPE 2T

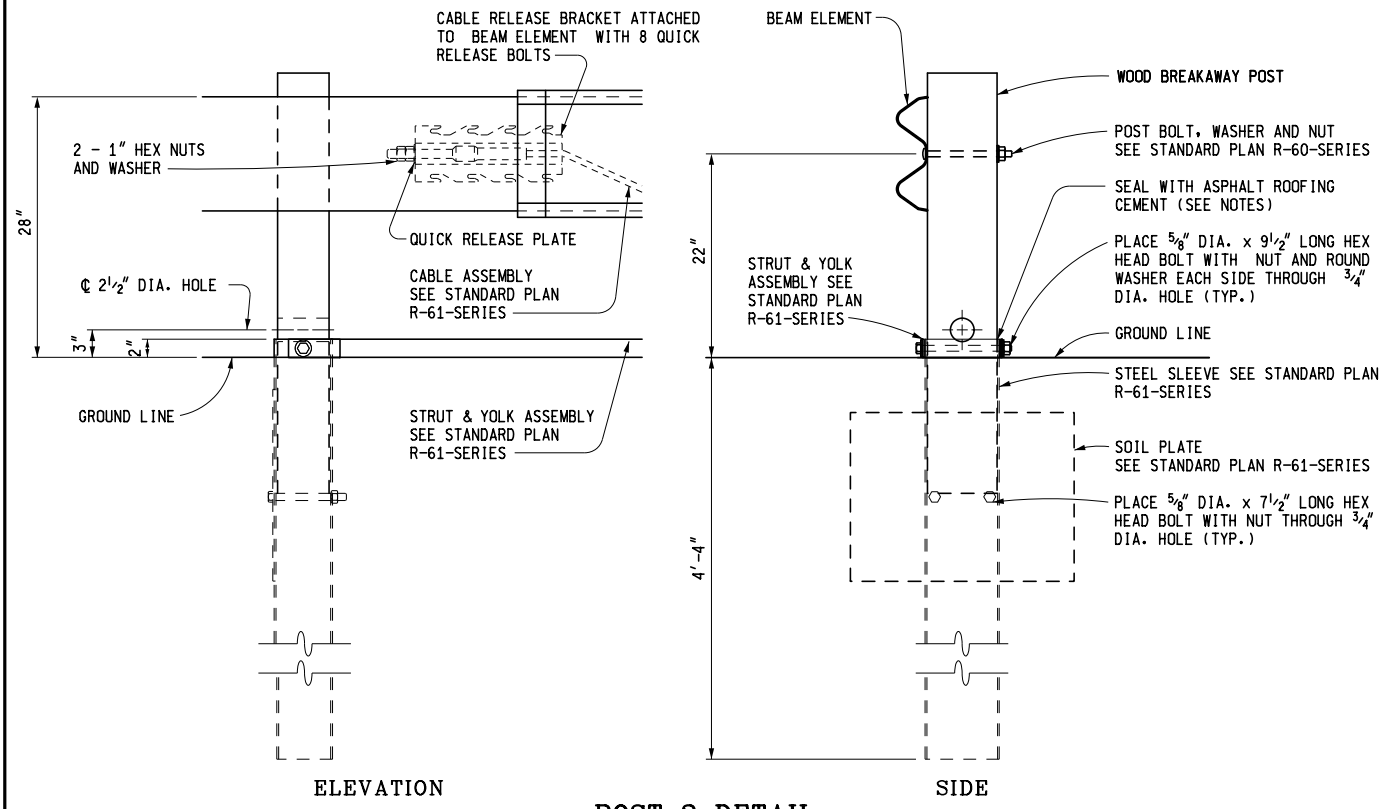
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)

F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 2 OF 5



POST 1 DETAIL



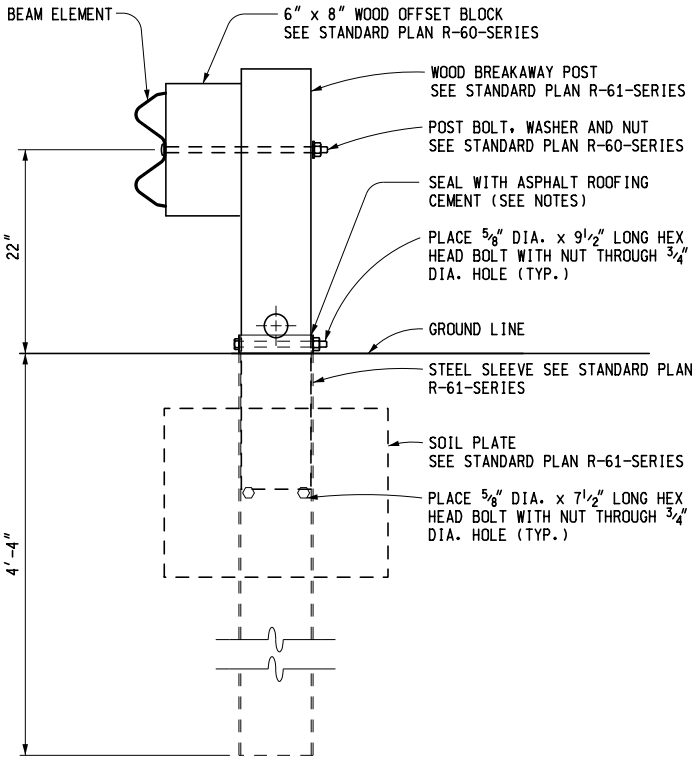
POST 2 DETAIL

MICHIGAN DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

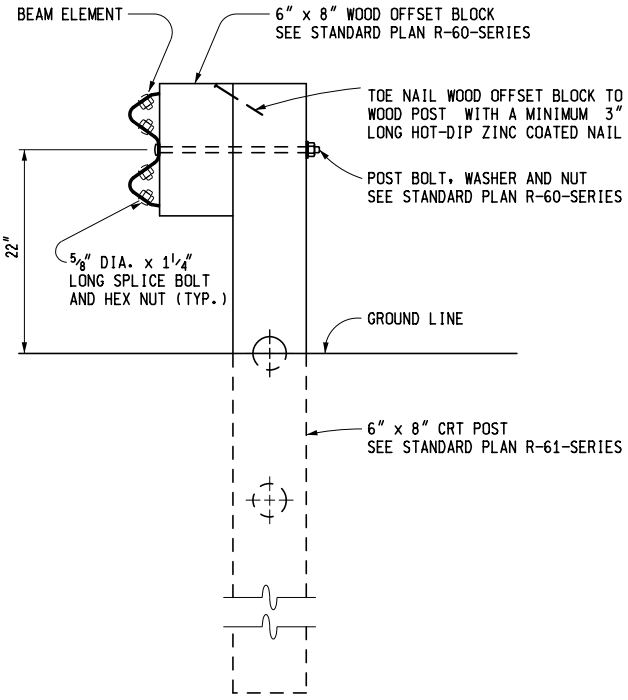
GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)

F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 3 OF 5

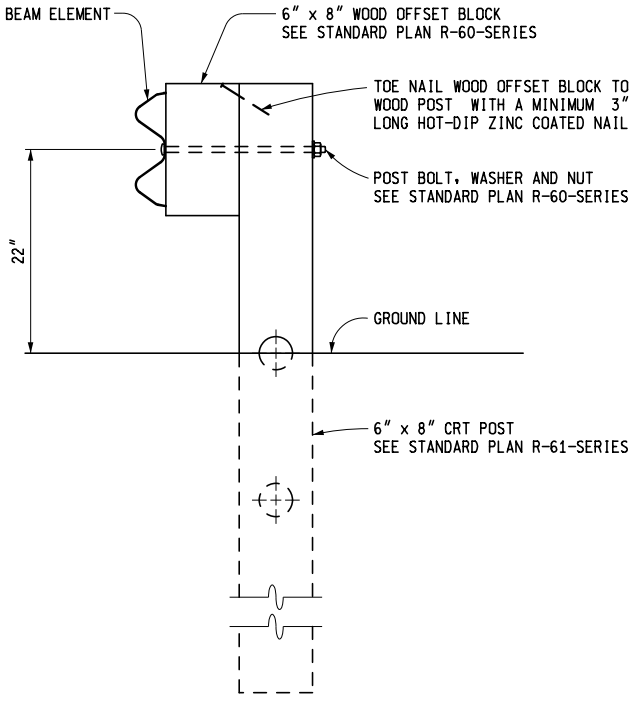


POST 3 AND 4 DETAIL

NOTE: BEAM ELEMENTS ARE SPLICED TOGETHER AT POST 3

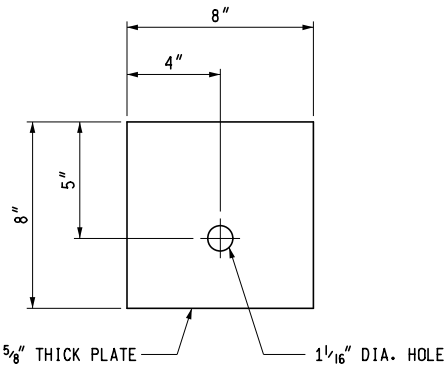


POST 5 AND 7 DETAIL



POST 6 AND 8 DETAIL

NOTE: POST 9 IS A STANDARD LINE POST.



BEARING PLATE

MICHIGAN DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)

F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 4 OF 5

NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, AND HARDWARE (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.

THE BREAKAWAY CABLE ASSEMBLY MUST BE TAUT. A LOCKING DEVICE (VICE GRIPS OR CHANNEL LOCK PLIERS) SHOULD BE USED TO PREVENT THE CABLE FROM TWISTING WHEN TIGHTENING THE NUTS.

AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED ON EACH END OF THE CABLE SO THAT THE CABLE WILL NOT LOOSEN.

WHEN SITE CONDITIONS WARRANT AND WITH THE APPROVAL OF THE ENGINEER, GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T CAN BE INSTALLED STRAIGHT (WITHOUT THE 1:50 FLARE).

GUARDRAIL REFLECTORS ARE NOT TO BE USED ON THE GUARDRAIL APPROACH TERMINAL. PLACE REFLECTORS BEGINNING ON STANDARD RUN OF GUARDRAIL.

USE REFLECTIVE SHEETING ACCORDING TO THE FOLLOWING TRAFFIC CONDITIONS:
(NOTE: ALTERNATE 3" BLACK AND 3" YELLOW STRIPES ON A 45° ANGLE)

TRAFFIC PASSING ON THE LEFT SIDE

TRAFFIC PASSING ON BOTH SIDES

TRAFFIC PASSING ON THE RIGHT SIDE

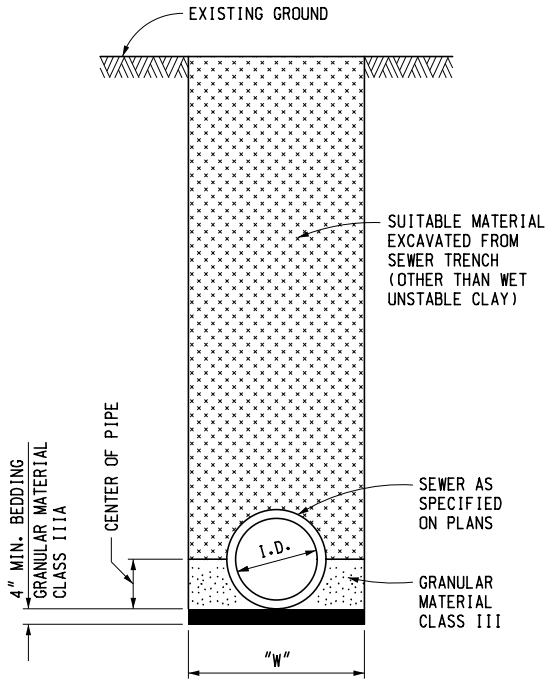
THE PORTION OF THE IMPACT HEAD ASSEMBLY FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ASPHALT ROOFING CEMENT SHALL BE USED TO SEAL THE PERIMETER AREA BETWEEN THE STEEL SLEEVE (SOIL TUBE) AND THE WOOD BREAKAWAY POST.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)

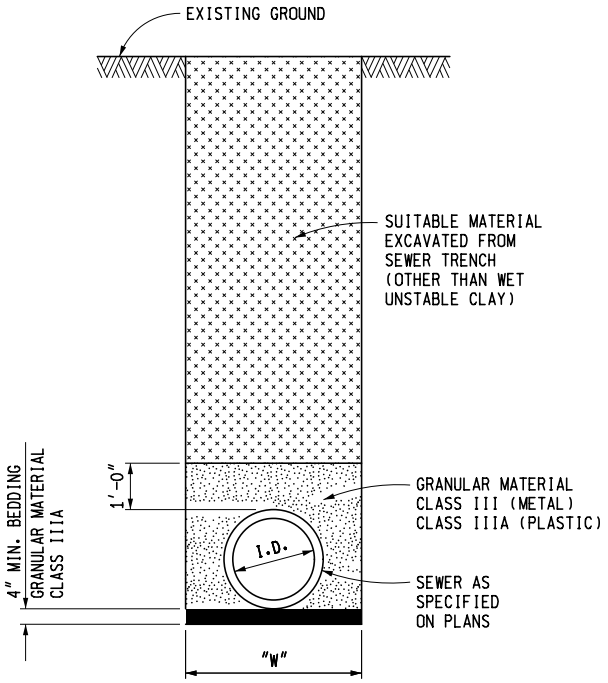
F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 5 OF 5



SEWER NOT UNDER ROADBED
CONCRETE

NOTE: FOR "W" SEE NOTES ON SHEET 5

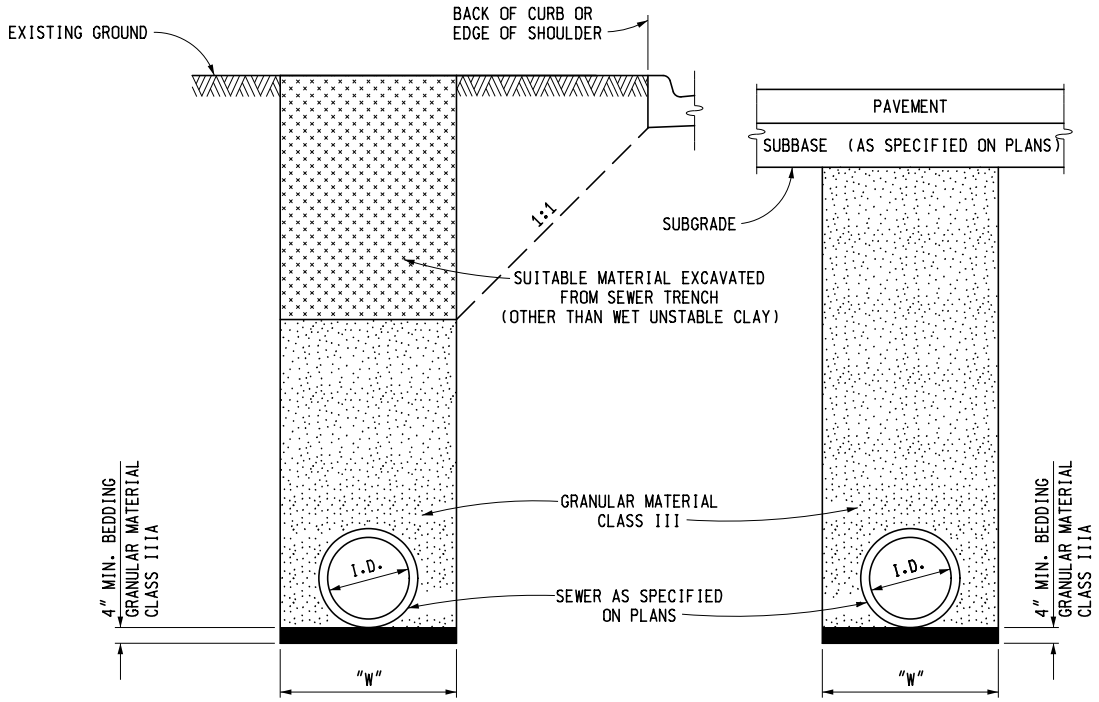
A1



SEWER NOT UNDER ROADBED
METAL & PLASTIC

NOTE: FOR "W" SEE NOTES ON SHEET 5

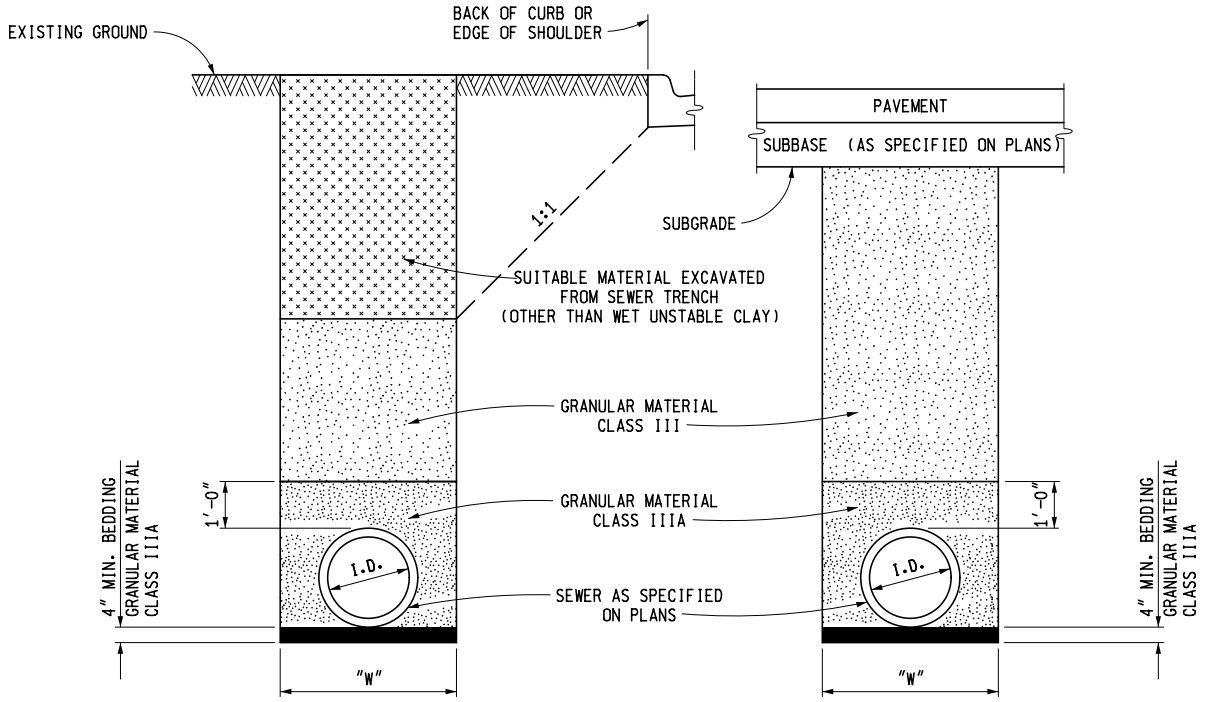
A2



SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
CONCRETE & METAL PIPE

B1

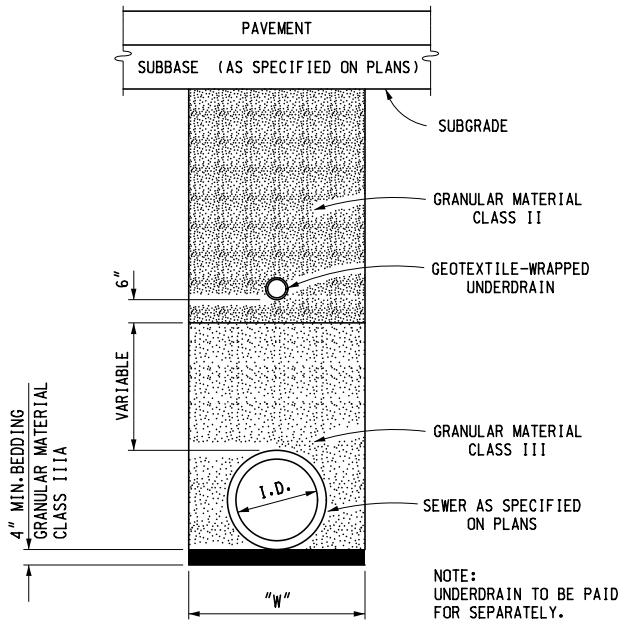
MDOT Michigan Department of Transportation PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES	
		F.H.W.A. APPROVAL	9-4-2015 PLAN DATE
		R-83-C	SHEET 1 OF 5



SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED

PLASTIC PIPE

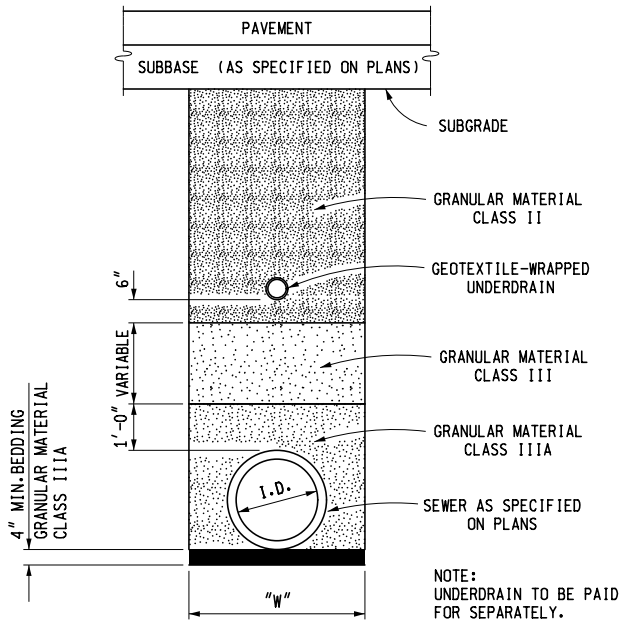
B2



SEWER WITH UNDERDRAIN UNDER ROADBED

CONCRETE & METAL PIPE

C1



SEWER WITH UNDERDRAIN UNDER ROADBED

PLASTIC PIPE

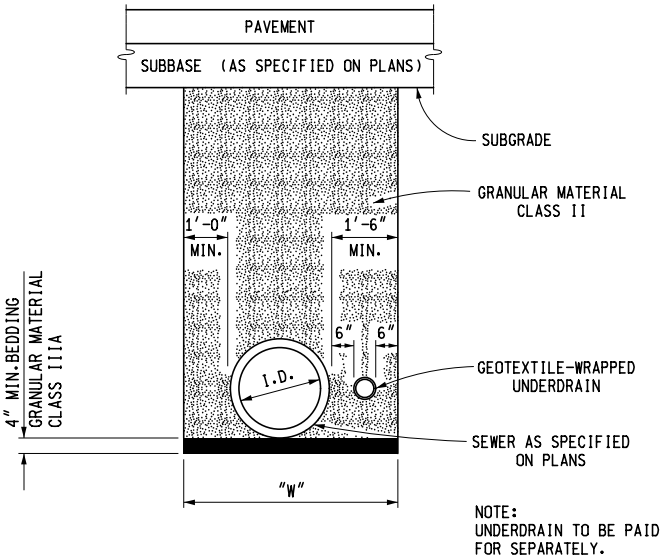
C2

MICHIGAN DEPARTMENT OF TRANSPORTATION

BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

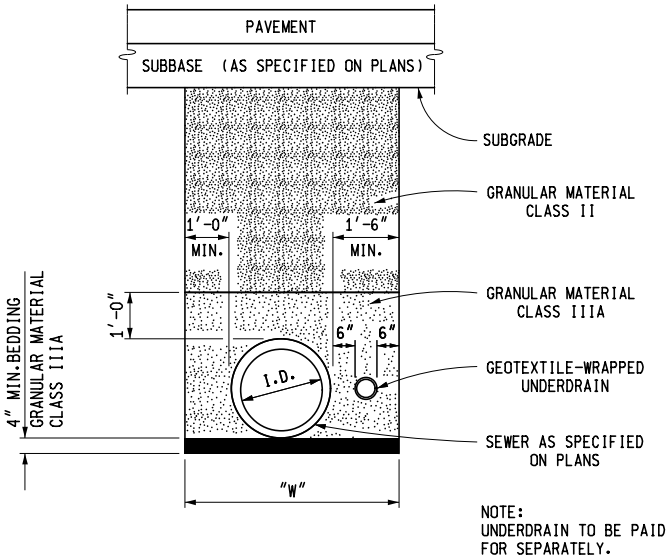
F.H.W.A. APPROVAL	9-4-2015 PLAN DATE	R-83-C	SHEET 2 OF 5



SEWER WITH UNDERDRAIN UNDER ROADBED

CONCRETE & METAL PIPE
(FOR SHALLOW SEWERS)

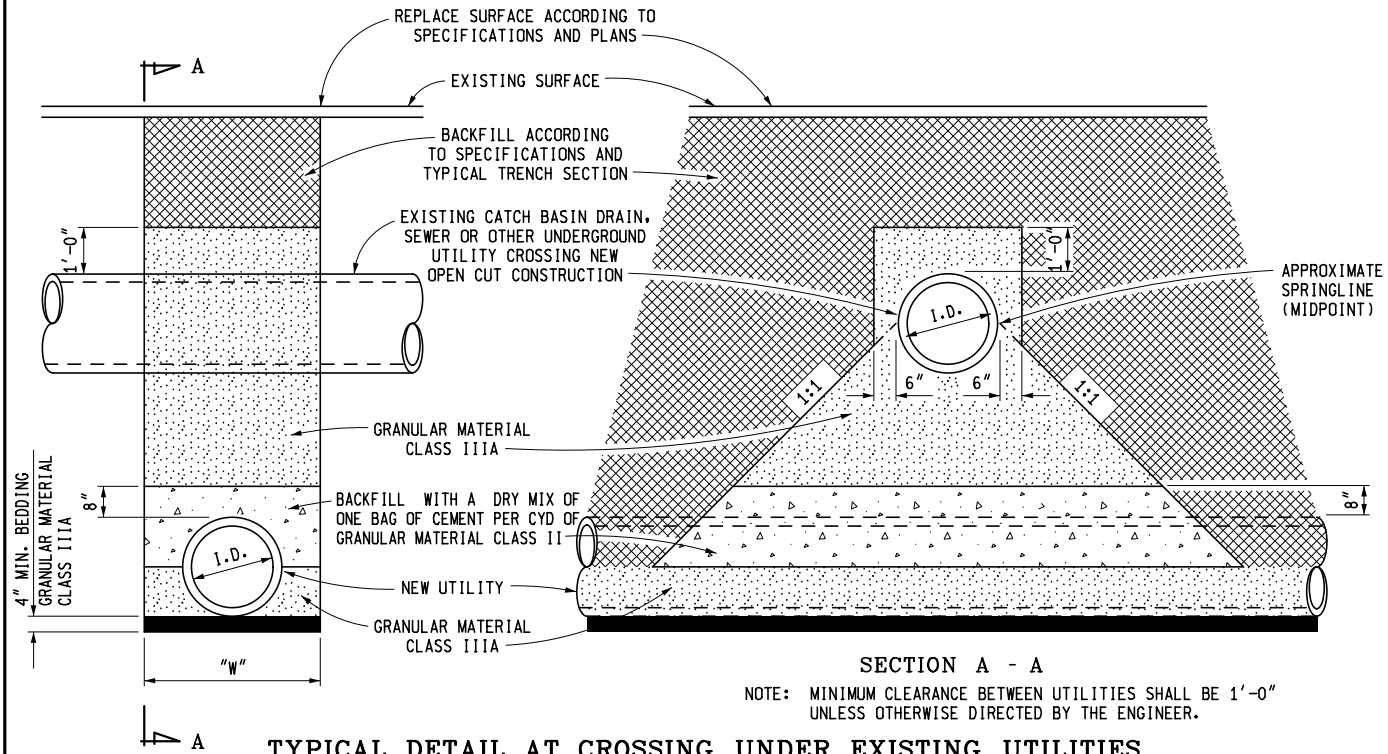
D1



SEWER WITH UNDERDRAIN UNDER ROADBED

PLASTIC PIPE
(FOR SHALLOW SEWERS)

D2



SECTION A - A

NOTE: MINIMUM CLEARANCE BETWEEN UTILITIES SHALL BE 1'-0" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TYPICAL DETAIL AT CROSSING UNDER EXISTING UTILITIES

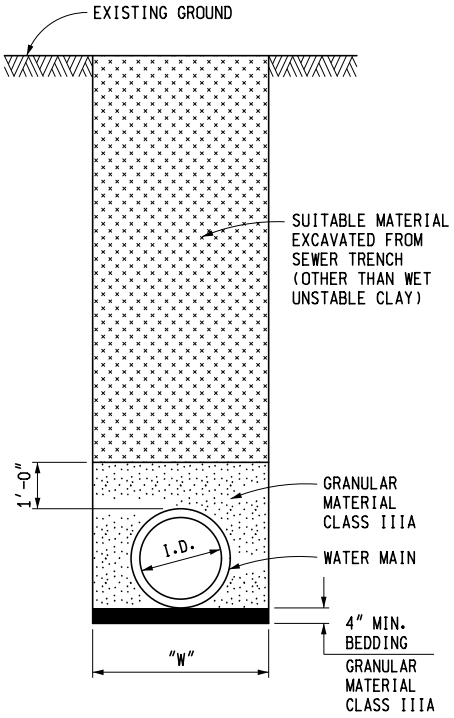
PAYMENT FOR THIS TRENCH DETAIL WILL BE INCLUDED WITH THE ADJACENT TRENCH DETAILS

E

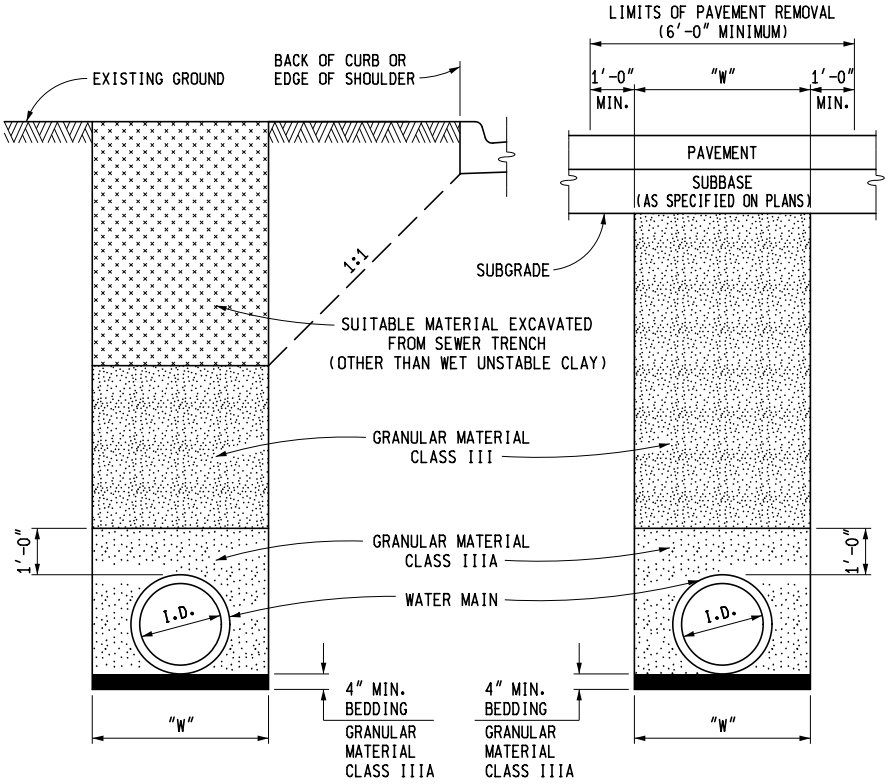
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

F.H.W.A. APPROVAL	9-4-2015 PLAN DATE	R-83-C	SHEET 3 OF 5

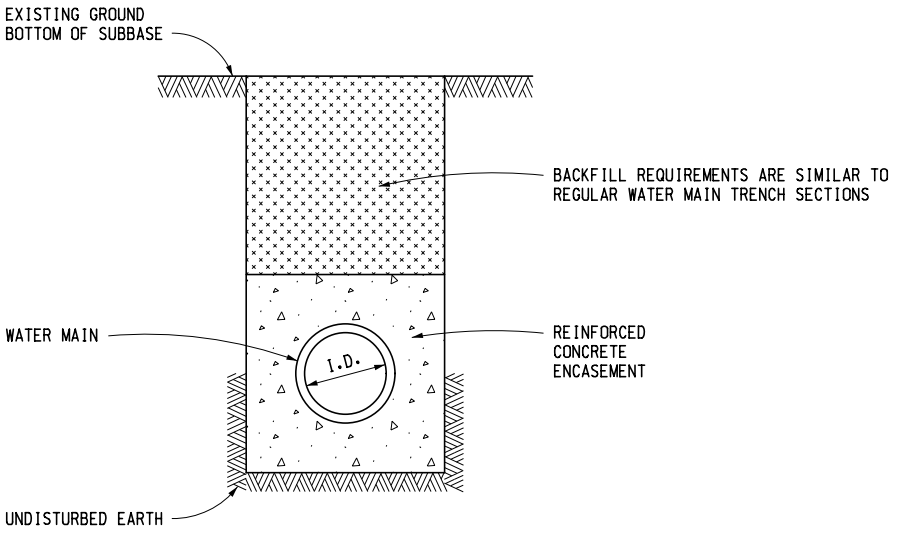


WATER MAINS NOT UNDER ROADBED F



NOTE: WHEN WATER MAIN IS PLACED IN PROPOSED ROADBED AREA, IT SHALL BE BACKFILLED WITH SELECTED EXCAVATION MATERIAL ABOVE FUTURE SUBGRADE TO EXISTING GROUND LINE.

WATER MAINS UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED G



REQUIRED ENCASEMENT SIZE FOR RESPECTIVE PIPE SIZES	
DIAMETER OF PIPE	ENCASEMENT SIZE AND TRENCH WIDTH
6" - 12"	3'-0"
16"	3'-6"
24"	4'-6"
30"	5'-0"
36"	5'-6"
42"	6'-0"
48"	7'-0"
54"	7'-6"
60"	8'-0"
66"	8'-6"
72"	9'-0"

NOTE:
REINFORCEMENT SHALL BE AS SPECIFIED ON PLANS.

WATER MAINS IN REINFORCED CONCRETE ENCASEMENT H

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

F.H.W.A. APPROVAL	9-4-2015 PLAN DATE	R-83-C	SHEET 4 OF 5

NOTES:

BACKFILLING SHALL BE ACCORDING TO THE STANDARD SPECIFICATION.

SUFFICIENT TRENCH WIDTH SHALL BE PROVIDED TO ALLOW FREE WORKING SPACE AND TO PERMIT COMPACTING THE BACKFILL AROUND THE PIPE.

THE FOLLOWING ARE MINIMUM TRENCH WIDTHS:

I.D. PIPE SIZE (INCHES)	LESS THAN 18	21	24	30	36
"W" TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0

I.D. PIPE SIZE (INCHES)	42	48	54	60	66	72
"W" TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	10.5	11.0

I.D. PIPE SIZE (INCHES)	78	84	90	96	102	108
"W" TRENCH WIDTH (FEET)	11.5	12.0	12.5	13.0	13.5	14.0

ESTIMATED PAVEMENT REMOVAL WIDTH IS TO BE TRENCH WIDTH "W" PLUS 1'-0" EACH SIDE OF THE TRENCH (6'-0" MINIMUM).

MICHIGAN DEPARTMENT OF TRANSPORTATION

BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

F.H.W.A. APPROVAL	9-4-2015 PLAN DATE	R-83-C	SHEET 5 OF 5