



*"Our mission is to upgrade and maintain
a safe and efficient road system"*

**GRAND TRAVERSE COUNTY ROAD COMMISSION
2024 HEAVY MAINTENANCE
ADVANCED WARNING BEACON MODERNIZATION**

F00013 Three Mile Rd and Potter Rd

CONTRACT # 24203

December 2023



"Our mission is to upgrade and maintain
a safe and efficient road system"

24S203 HEAVY MAINTENANCE ADVANCED WARNING BEACON MODERNIZATION

Pay Item Code	Description	Quantity	Units
1100001	Mobilization, Max 5%	1.00	LSUM
8127051	_Temporary Traffic Control	1.00	LSUM
8200072	Flsh Beacon, Solar, Rem	10.00	Ea
8100403	Sign, Type III, Rem	10.00	Ea
8100280	Fdn, Wood Support, Rem	10.00	Ea
8200071	Flsh Beacon, Solar	10.00	Ea
8100404	Sign, Type IIIA	90.00	Sft
8100382	Post, Wood, 6 inch by 8 inch	160.00	Ft

GRAND TRAVERSE COUNTY ROAD COMMISSION

TABLE OF CONTENTS

COVER SHEET.....	1
SCHEDULE OF ITEMS.....	2
TABLE OF CONTENTS.....	3
ADVERTISEMENT FOR BID	4
INSTRUCTIONS TO BIDDERS	5
CONSTRUCTION CONTRACT	14
GENERAL SPECIFICATIONS	22
PROGRESS CLAUSE.....	34
SPECIAL PROVISIONS.....	35
GTCRC MAINTAINING TRAFFIC	35
TRAFFIC SIGN EQUIPMENT.....	56
TRAFFIC SIGN EQUIPMENT REMOVAL	57
SOLAR POWER FLASHING BEACON, SINGLE OR DUAL.....	58
UTILITY COORDINATION	62
PROJECT LOG	63
SPECIAL DETAILS.....	69
SIGN-120-E ROADSIDE SIGN LOCATIONS AND SUPPORT SPACING	69
SIGN-210-B WOOD POSTS	78
SIG-320-A SIGN MOUNTED BEACON.....	83
BID FORM	92
BID BLANK.....	97
AFFIDAVIT OF NONCOLUSION.....	98

ADVERTISEMENT FOR BIDS

24S203 HEAVY MAINTENANCE ADVANCED WARNING BEACON MODERNIZATION

GRAND TRAVERSE COUNTY ROAD COMMISSION

Sealed Proposals on forms prepared by the Engineer will be received by GRAND TRAVERSE COUNTY ROAD COMMISSION at 1881 LAFRANIER ROAD, TRAVERSE CITY, MI 49696-8911 until **2:30 P.M. (local time) on Monday January 22, 2024** for construction of the 2024 Heavy Maintenance Advanced Warning Beacon Modernization Project in accordance with Plans, Specifications and other Contract Documents prepared by GRAND TRAVERSE COUNTY ROAD COMMISSION. Proposals will be publicly opened and read immediately after the time established above.

Project Location:

F00013 Three Mile Rd and Potter Rd

Principal items of work include, but are not limited to:

Flsh Beacon, Solar, Rem	10	Ea
Sign, Type III, Rem	10	Ea
Fdn, Wood Support, Rem	10	Ea
Flsh Beacon, Solar	10	Ea
Sign, Type IIIA	90	Sft
Post, Wood, 6 inch by 8 inch	160	Ft

Plans, Specifications, and other Contract Documents may be examined at the following location.

- GRAND TRAVERSE COUNTY ROAD COMMISSION; Traverse City, Michigan

Plans, Specifications and other Contract Documents may be obtained upon application at the office of GRAND TRAVERSE COUNTY ROAD COMMISSION, upon the payment of \$60.00 per set plus \$10.00 per set if mailed. Plans and specifications will not be mailed until payment is received. The non-refundable fee shall be in check form and shall be drawn payable to GRAND TRAVERSE COUNTY ROAD COMMISSION. The OWNER's address is GRAND TRAVERSE COUNTY ROAD COMMISSION, 1881 LAFRANIER ROAD, TRAVERSE CITY, MI 49696-8911 and the telephone number is 231-922-4848.

Each proposal shall be accompanied by an acceptable form of Bid Bond in an amount equal to at least five percent (5%) of the amount of the Proposal payable to GRAND TRAVERSE COUNTY ROAD COMMISSION as a guaranty that if the Proposal is accepted, the Bidder will execute the Contract and file acceptable Performance, Labor and Material Payment and Maintenance and Guarantee Bonds within **10** days after, and as a condition precedent to the award of the Contract.

The GTCRC reserves the right to reject any, all, or portions of the Proposals received, or to negotiate separately with any source whatsoever in any manner necessary to serve the best interest of the GRAND TRAVERSE COUNTY ROAD COMMISSION, and to waive any formality or technicality in any Proposal in the interest of the GTCRC.

INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the Construction Contract and the General Specifications. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

Bidder — The individual or entity who submits a Bid directly to the Road Commission.

Drawings or Plans — The terms drawing or plans as used in these documents may mean project specific drawing sheets, log scoping documents, or any other document setting forth the scope of the Work under the Contract.

Issuing Office — The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

Successful Bidder — The Bidder submitting a responsive Bid to whom the Road Commission (on the basis of the Road Commission's evaluation as hereinafter provided) makes an award.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the fee, if any, stated in the Advertisement or Invitation to Bid shall be obtained from the Issuing Office. The fee is nonrefundable unless specifically stated otherwise in the proposal. Payment of the plan fee, and any applicable shipping charges must be received by the Issuing Office before copies of the Bidding Documents are issued. Before issuance of Bidding Documents, the name, address, email address, phone number and fax number of the person to whom the documents are issued shall be provided to the Issuing Office.

2.02 Complete sets of Bidding Documents obtained from the issuing office must be used in preparing Bids; the Road Commission does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 The Road Commission in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

- A. List of related project experience complete with dollar value of contract, type of work, project owner and project owner's representative and phone number.
- B. Current work now under contract or anticipated during the life of the project. Include project name, type, dollar value, completion date and percentage presently complete.
- C. Equipment list. Provide list of construction equipment presently owned and/or leased along with the equipment intended to be used on the project.
- D. List of suppliers and subcontractors.
- E. Bid Bond.
- F. Bidder Qualification Statement with supporting data.
- G. Affidavit of Non-Collusion.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 On request, the Road Commission will provide Bidder access to the Site to conduct examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. A Right of Way Permit may be required for work within the Right of Way as a condition to access. Any fees for the Right of Way Permit will be waived by the Road Commission.

4.02 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy Bidder as to all federal, state, and local laws, rules, codes, and regulations that may affect cost, progress, or performance of the Work;
- D. carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided by the Road Commission, if any, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions.
- E. obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous

to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the materials, means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific materials, means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

- F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by the Road Commission and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. promptly give the Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
- J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.03 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific materials, means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

A mandatory pre-bid conference **will not** be required on this Project.

~~5.01 A pre-bid conference will be held on _____ at the Grand Traverse County Road Commission. Representatives of the Road Commission will be present to discuss the Project. Bidders are required to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.~~

ARTICLE 6 - SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to the Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed, emailed, or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than 3 days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by the Road Commission or the Engineer.

ARTICLE 8 - BID SECURITY – A Bid security **will** be required for this Project.

8.01 A Bid must be accompanied by Bid security made payable to the Road Commission in an amount of 5% of Bidder's maximum Bid price and in the form of a certified or bank check, money order or a Bid Bond on an AIA form issued by a surety meeting the requirements of paragraph 6 of the General Specifications.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, the Road Commission may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom the Road Commission believes to have a reasonable chance of receiving the award may be retained by the Road Commission until the earlier of 7 days after the Effective Date of the Agreement or 30 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

8.03 Bid security of other Bidders whom the Road Commission believes do not have a reasonable chance of receiving the award will be returned within 15 days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Contract.

ARTICLE 10 - LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, are set forth in the Contract.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to the Road Commission, application for such acceptance will not be considered by the Engineer until after the Effective Date of the Agreement. The procedure for submission of any such application by Contractor and consideration by Engineer is set forth in the General Specifications and may be supplemented in the General Requirements.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 A bid must be accompanied by a list of the subcontractors, suppliers, individuals, or entities proposed for the Work. Such list shall include the portion of the work the subcontractor will be performing and shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such subcontractor, supplier, individual, or entity. If the Road Commission, after due investigation, has reasonable objection to any proposed subcontractor, supplier, individual, or entity, the Road Commission may, before the Notice of Award is given, request the apparent Successful Bidder to submit a substitute, without an increase in the Bid.

12.02 If the apparent Successful Bidder declines to make any such substitution, the Road Commission may award the Contract to the next lowest Bidder that proposes to use acceptable subcontractors, suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any subcontractor, supplier, individual, or entity so listed and against which the Road Commission makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to the Road Commission subject to revocation of such acceptance after the Effective Date of the Agreement as provided in the General Specifications.

12.03 Contractor shall not be required to employ any subcontractor, supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 13 - PREPARATION OF BID

- 13.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from the issuing office.
- 13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 13.06 A Bid by an individual shall show the Bidder's name and official address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.
- 13.08 All names shall be typed or printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.
- 13.10 The address, email, and telephone number for communications regarding the Bid shall be shown.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

14.01 Unit Price

Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

The total of all Bid prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined as follows:

1. For all Unit Price Work, initially the Contract Price will be deemed to include an amount equal to the sum of the Unit Price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in

Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by the Road Commission pursuant to the General Specifications.

2. Each Unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
3. Discrepancies between the multiplication of units of Work and Unit Prices will be resolved in favor of the Unit Prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

Bidders shall submit a Bid on a Unit Price basis for the base Bid and include a separate price for each alternate described in the Bidding Documents as provided in the Bid form, if any. The price for each alternate will be the amount added to or deleted from the base Bid if the Road Commission selects the alternate. In the evaluation of Bids, alternates will be applied in the same order as listed in the Bid form.

ARTICLE 15 - SUBMITTAL OF BID

- 15.01 Bids may be submitted by either completing the Bid forms in the bound documents provided or by completing copies made from the Bid forms in the documents provided. A Bid shall include the completed Bid form, Bid security and other material identified for inclusion with the Bid.
- 15.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to GRAND TRAVERSE COUNTY ROAD COMMISSION, 1881 LAFRANIER ROAD, TRAVERSE CITY, MI 49696-8911.

- 15.03 Bids submitted by facsimile, email, in any another electronic form will not be considered.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with the Road Commission and promptly thereafter demonstrates to the reasonable satisfaction of the Road Commission that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid form, but the Road Commission may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 - AWARD OF CONTRACT

19.01 The Road Commission reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. The Road Commission further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. The Road Commission may also reject the Bid of any Bidder if the Road Commission believes that it would not be in the best interest of the Project to make an award to that Bidder. The Road Commission also reserves the right to waive any or all formalities or nonconformities, and to negotiate contract terms with the Successful Bidder. Any such waiver shall not affect the validity of the Contract or affect the right of the Road Commission to enforce any provision of the Contract.

By submitting this Bid, the Bidder waives any and all claims against the Road commission related to the Road Commission's selection of the Successful Bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, the Road Commission will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.04 In evaluating Bidders, the Road Commission will consider the qualifications of Bidders and may consider the qualifications and experience of subcontractors, suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of

GRAND TRAVERSE COUNTY ROAD COMMISSION
24S203 HEAVY MAINTENANCE AWB MODERNIZATION

INSTRUCTIONS TO BIDDERS
Page 8 of 9

subcontractors, suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

- 19.05 The Road Commission may conduct such investigations as the Road Commission deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed subcontractors, suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 19.06 If the Contract is to be awarded, the Road Commission will award the Contract to the Bidder whose Bid is in the best interests of the Project and the Road Commission.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

- 20.01 Paragraphs 5 and 6 of the General Specifications, as may be modified by the Supplementary Conditions, set forth the Road Commission's requirements as to Bonds and Insurance. When the Successful Bidder delivers the executed Agreement to the Road Commission, it must be accompanied by such Bonds and Insurance.

ARTICLE 21 - SIGNING OF AGREEMENT

- 21.01 When the Road Commission gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 7 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to the Road Commission. The Road Commission shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

**GRAND TRAVERSE COUNTY ROAD COMMISSION
CONSTRUCTION CONTRACT**

PROJECT: 24S203 Heavy Maintenance Advanced Warning Beacon Modernization

F00013 Three Mile Rd and Potter Rd

LOCATION: East Bay Township, Grand Traverse County Michigan

THIS CONTRACT is made this XX day of XX, **2024**, by and between GRAND TRAVERSE COUNTY ROAD COMMISSION, a quasi-municipal corporation and a duly organized County Road Commission in the State of Michigan, of 1881 LaFranier Road, Traverse Road Commission, Michigan 49696 (the “Road Commission”) and _____, a **Michigan** corporation, whose address is _____, (the “Contractor”);

WHEREAS, the parties wish to accomplish improvements at the above location (the “Site”) and have solicited and submitted a bid for such improvements;

THEREFORE, the parties mutually agree as follows:

1. Contract Documents. The following designated documents shall be deemed to be a part of this Contract:

- Advertisement
- Information to Bidders
- Instructions to Bidders
- Affidavit of Non-Collusion
- Bid
- Legal Status of Bidder
- Performance Bond with maintenance and guarantee obligations
- Payment Bond
- Notice of Award
- Notice to Proceed
- Authorization of Change(s)
- Work Item Descriptions
- General Specifications
- Supplemental Specifications
- Special Provisions
- MDOT Frequently Used Special Provisions
- Plans and Details
- Progress Clause and Schedule
- Contractor Safety Plan
- Pre-Construction Meeting Minutes

- Reports
- Michigan Department of Transportation Standard Specifications for Construction

Where sections of the MDOT Standard Specifications for Construction are incorporated by reference in the applicable Contract Documents, the term "Department" as used in the MDOT Standard Specifications for Construction shall mean the "Road Commission."

- Grand Traverse County Road Commission Standards and Specifications
- Addenda

2. **Performance.** Contractor agrees to perform the work as specified in the Contract Documents.
3. **Progress Clause.** The services to be rendered under this Contract shall commence upon issuance of the Notice to Proceed. The Contract working time, substantial completion date and final completion date shall be as provided in the Progress Clause.
4. **Contract Price.** The Road Commission agrees to pay the Contractor the Unit Prices provided in the attached bid(s), specifications and other Contract Documents in the time and manner therein provided. The total estimated price for all Work described herein shall be _____, more or less, to be paid pursuant to the procedures established in the Contract documents.
5. **Independent Contractor.** The relationship of the Contractor to the Road Commission is that of an independent contractor and in accordance therewith, the Contractor covenants and agrees to conduct itself consistent with such status and that neither it nor its employees, officers or agents will claim to be an officer, employee or agent of the Road Commission or make any claim, demand or application to or for any rights or privileges applicable to any officer or employee of same, including but not limited to worker's compensation coverage, unemployment insurance benefits, social security coverage, or retirement membership or credit. The parties do not intend the services provided by the Contractor to be a joint venture.
6. **Recovery of Money.** Whenever, under this Contract, any sum of money shall be recoverable from or payable by the Contractor to the Road Commission, the same amount may be deducted from any sum due to the Contractor under this Contract or under any other contract between the Contractor and the Road Commission. The rights of the Road Commission are in addition and without prejudice to any other right the Road Commission may have to claim the amount of any loss or damage suffered by the Road Commission on account of the acts or omissions of the Contractor.
7. **General Warranty and Guarantee.** Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. For one year after the date of final payment, the Contractor shall maintain and repair the Work. Any Work which is found to be defective shall promptly and without cost to the Road Commission and in accordance with the Road Commission's written instructions, be corrected or

replaced with non-defective Work. If the Road Commission determines that Work must be replaced, the Contractor shall promptly replace the Work. If the Contractor believes that replacement of the Work was unreasonable and only repair of the Work should have been ordered by the Road Commission, the Contractor may submit a written request with the Road Commission for the difference in cost, and, if the Road Commission disagrees with said request, may pursue such request in accordance with the dispute resolution procedure established in this Contract. If the Contractor does not promptly repair or replace the Work pursuant to the Road Commission's directions, the Road Commission may itself correct the defective Work or may have the defective Work corrected by another contractor. The Contractor shall pay all of the Road Commission's costs and expenses, including Road Commission overhead costs and attorney fees associated with the repair or replacement of the defective Work. Where defective Work has been corrected or removed and replaced under this paragraph, the correction period with respect to such Work will be extended for an additional term of one year after such correction or removal and replacement has been completed. These obligations are in addition to any other obligation provided by law or this Contract or warranty.

None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a waiver of Contractor's obligation to perform the Work in accordance with the Contract Documents:

- A. observation or failure to observe by the Road Commission, its agents, or employees;
- B. payment by the Road Commission of any progress payment;
- C. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Road Commission;
- D. use or occupancy of the Work or any part by the Road Commission;
- E. any acceptance by the Road Commission, its agents, or employees or any failure to do so;
- F. any inspection or test by the Road Commission, its agents, or employees;
- G. approval by others; or
- H. any correction of defective Work by the Road Commission.

8. Qualifications of the Contractor. The Contractor specifically represents and agrees that its officers, employees, agents and consultants have and shall possess the experience, knowledge, and competence necessary to qualify them individually for the particular duties they perform hereunder and to perform the Work.

- The Contractor must be pre-qualified by the Michigan Department of Transportation for the Work to be performed under this Contract.

9. Notice. Whenever it is provided in this Contract that a notice or other communication is to be given or directed to either party, the same shall be given or directed to the respective party at its address as specified in this Contract, or at such other address as either party may, from time to time, designate by written notice to the other.

10. Termination. This Contract may be terminated in accordance with the provisions of subsections 108.11 and 108.12 of the MDOT Standard Specifications for Construction.

11. Dispute Resolution. If any party has a dispute with another arising out of or relating to the meaning, operation or enforcement of this Contract or any provision of this Contract or any of the applicable Contract Documents, the disputing parties will attempt in good faith to resolve any such dispute promptly by negotiations between the Contractor and the Engineer. Any party may give the other party written notice of any dispute not resolved in the normal course of business. Within 20 days after delivery of the notice, the Contractor and the Engineer will meet at a mutually acceptable time and place, and thereafter as often as they reasonably deem necessary, to exchange relevant information and to attempt to resolve the dispute. All negotiations pursuant to this clause are confidential and will be treated as compromise and settlement negotiations for purposes of the Federal Rule of Evidence and Michigan Rules of Evidence. If the matter has not been resolved within 60 days of the disputing party's notice or if the parties fail to meet within 20 days, either party may initiate mediation of the controversy or claim as provided below.

A. Mediation. If the dispute has not been resolved by negotiation as above, the parties will endeavor to settle it by mediation and shall utilize the services of a mutually acceptable neutral mediator, who meets the qualifications of MCR 2.411(F), to bring them together in at least one mediation session. The entire mediation process will be confidential, and the parties and the mediator will not disclose to any person who is not associated with participants in the process any information regarding the process, contents, settlement terms, or outcome of the proceeding. The mediation will be treated as a compromise negotiation within the meaning of the Federal Rules of Evidence and the Michigan Rules of Evidence.

B. Arbitration. Any dispute arising out of or relating to this Contract or the applicable Contract Documents or their breach that has not been resolved by negotiation or mediation within time frame set forth below will be finally settled by binding arbitration conducted expeditiously in accordance with the rules of the American Arbitration Association (AAA) by a sole arbitrator. The arbitration will take place in Grand Traverse County, Michigan, and will be governed by the Federal Arbitration Act, 9 USC 1-16, and judgment on the award rendered by the arbitrator may be entered by any court having jurisdiction. The arbitration will be governed by the laws

of the State of Michigan. The arbitrator is not empowered to award damages in excess of compensatory damages or any lawful limitations on damages provided in this Contract or the applicable Contract Documents.

The procedures specified in this section will be the sole and exclusive procedures for the resolution of disputes between the parties arising out of or relating to this Contract and/or the applicable Contract Documents; however, a party may seek a preliminary injunction or other provisional jurisdictional relief if in its judgment such action is deemed necessary to avoid irreparable damage or to preserve the status quo. Despite such action the parties will continue to participate in good faith in the procedures specified in this section.

- C. Venue. All meetings, hearings and actions to resolve the dispute shall be in Grand Traverse County.
- D. Notice. Written notice of a dispute shall be given to the other party not later than 90 days after the occurrence giving rise to the dispute becomes known or should have become known. Mediation shall occur within 120 days after such notice. Unless a longer time is agreed upon, arbitration must be demanded within 180 days after such notice and, if not, the claim is deemed waived. Arbitration must be demanded within this time limit even if negotiation or mediation has not occurred, but the arbitrator must direct the parties to mediation before issuing an award.
- E. Work Continuance and Payment. Unless otherwise agreed in writing, Contractor shall continue the Work and maintain the approved schedules during any dispute resolution proceedings. If Contractor continues to perform, the Road Commission shall continue to make payments in accordance with this Agreement.
- F. Emergency Injunctive Relief. Nothing in this Contract shall prohibit the Road Commission from seeking emergency injunctive relief from any court of competent jurisdiction, should the situation warrant it under MCR 3.310.
- G. Agent Dispute Resolution. Notwithstanding the above, at the option of the Road Commission, the Road Commission and the Contractor shall submit the following matters to a person with background, training, and experience in similar projects:
 - 1. To determine whether there has been a delay for reasons that were within the control of the Contractor, and the period of time that delay has been caused, continued, or aggravated by actions of the Contractor.

2. To determine whether there has been an unacceptable delay by the contractor in the performance of the remaining Work under the contract any time after 94% of the Work is in place.

The agent selected must be mutually agreeable to the Road Commission and the Contractor provided that the Road Commission and the Contractor can mutually agree within 10 days from the date of the dispute. In the event that the parties cannot agree, the agent shall be selected by the Road Commission. The agent shall not be an employee of either party. This process shall be governed by and subject to the provisions of MCL 125.1564(4) – (8).

12. Entire Contract. This Contract, together with all accompanying applicable Contract Documents and items incorporated herein by reference, constitutes the entire Contract of the parties and there are no valid promises, conditions or understandings which are not contained herein.
13. Amendments. This Contract may be modified from time to time, but such modifications shall be in writing and signed by both parties.
14. Interpretation. This Contract shall be governed by the laws of the State of Michigan, both as to interpretation and performance. This Contract was drafted at the joint direction of the parties. The pronouns and relative words used herein are written in the neuter and singular. However, if more than one person or entity joins in this Contract on behalf of Contractor, or if a person of masculine or feminine gender joins in this Contract on behalf of Contractor, such words shall be interpreted to be in the plural, masculine or feminine as the sense requires.

References to standards, specifications, manuals, or codes of any technical society organization, or association shall mean the standard, specification, manual, code, or law or regulation in effect at the time of opening the Bid or the date of this Agreement, whichever occurs first, except as otherwise stated or required by law or regulation. References to any law, rule, or regulation shall mean the law, rule, or regulation in effect at the time the Work or any portion thereof is performed by the Contractor.

15. Authority to Execute. The parties agree that the signatories appearing below have the authority and are duly authorized to execute this Contract on behalf of the party to the Contract.
16. Third Party Beneficiaries. This Contract confers no rights or remedies on any third party, other than the parties to this Contract and their respective successors and permitted assigns.
17. Reuse of Documents. All documents and electronic files delivered to the Road Commission are instruments of service in respect of the project. Nevertheless, all documents and electronic files delivered to the Road Commission shall become

property of the Road Commission upon completion of the Work and payment in full of all monies due the Contractor. Copies of the Road Commission-furnished data that may be relied upon by the Contractor are limited to the printed copies (also known as hard copies) that are delivered to the Contractor. Files on electronic media of text, data or graphics or of other types that are furnished by the Road Commission to the Contractor are only for convenience of the Contractor. Any conclusion of information obtained or derived from such electronic files will be at the user's sole risk. Economic benefit to the Road Commission for having these files is predicated on the files being in media form, software release number and hardware operating system number as utilized by the Contractor. Copies of documents that may be relied upon by the Road Commission are limited to the printed copies (also known as hard copies) that are signed or sealed by the Contractor. Files on electronic media of text, data or graphics or of other types that are furnished by the Contractor to the Road Commission shall be in a compatible software format for use by the Road Commission. Any conclusions or information obtained or derived from such electronic files will be at the user's sole risk. Electronic file copies of drawings will not contain the Contractor's seal or the identification of the Contractor in the title block.

18. Digital Signatures. The parties hereto acknowledge and agree under the Uniform Electronic Transactions Act, MCL 450.832, *et seq.* that this Contract may be executed with the electronic signature of any person authorized and required to sign on behalf of the parties hereto.
19. Execution in Counterparts. This Contract may be executed in counterparts, each of which shall be an original and all of which shall constitute the same instrument.
20. No Waiver. No waiver by any party of any default by another party in the performance of any portion of this Contract shall operate or be construed as a waiver of any future default, whether like or different in character.
21. Costs and Expenses. Contractor shall be responsible for reasonable attorney fees and costs incurred by the Road Commission in connection with recovery under the bonds furnished by Contractor or any of its subcontractors under this Contract as well as any reasonable attorney fees and costs incurred by the Road Commission in connection with the Contractor's performance or failure to perform under this Contract. Costs that may be charged to the Contractor include, but are not limited to, all costs and expenses incurred by the Road Commission in connection with performing any portion of the Work that the Contractor fails and refuses to perform following notice to the Contractor. In case of an emergency, where in the opinion of the Engineer, delay would cause serious loss or damage, or presents a safety hazard to the traveling public, corrective work may be undertaken without advance notice to Contractor, and Contractor shall be liable for all costs and expenses incurred. The remedies set forth in this paragraph are cumulative of any other remedies the Road Commission may have.

IN WITNESS WHEREOF, the parties hereto have executed this Contract on the date and year first above written.

CONTRACTOR

By _____

Its _____

**GRAND TRAVERSE COUNTY ROAD
COMMISSION**

By _____
Joe Underwood, Chairperson

By: _____
Kylie Hedges, Clerk

APPROVED AS TO SUBSTANCE:

Daniel Watkins
Road Commission Manager

APPROVED AS TO FORM:

Karrie A. Zeits
Road Commission General Counsel

**GRAND TRAVERSE COUNTY ROAD COMMISSION
GENERAL SPECIFICATIONS**

1. DEFINITIONS.

For the purpose of these specifications, the following terms are used herein and are respectively defined as follows:

- A. "Road Commission" shall mean the Grand Traverse County Road Commission represented by the County Highway Engineer. Where sections of the MDOT Standard Specifications for Construction are incorporated by reference within the applicable Contract Documents, the term "Department" as used in the MDOT Standard Specifications for Construction shall mean the "Road Commission."
- B. "Engineer" shall mean the County Highway Engineer of the Road Commission.
- C. "Board" shall mean the Board of Grand Traverse County Road Commissioners.
- D. "Contractor" shall mean the individual, partnership, corporation or a combination of any or all jointly, undertaking the execution of the Work under the terms of the Contract and acting directly or through agents or employees.
- E. The Abbreviations provided under subsection 101.02 of the MDOT Standard Specifications for Construction and the Definitions provided under subsection 101.03 of the MDOT Standard Specifications for Construction are incorporated herein by reference.

2. PERFORMANCE/MDOT STANDARD SPECIFICATIONS/CONTRACT DOCUMENTS.

Unless a different form, procedure, provision, term, condition, method, or specification is provided within the Road Commission's Contract Documents, the Contractor and the Engineer shall adhere to and perform the Contract in accordance with the requirements set forth in Division 1, Sections 101 through 110, of the 2020 Michigan Department of Transportation Standard Specifications for Construction (the "MDOT Standard Specifications"). Subsection 104.10 of the MDOT Standard Specifications is specifically excluded and in no case shall the provisions of subsection 104.10 of the MDOT Standard Specifications apply to the Project.

If the Contractor believes a conflict, error, ambiguity, or discrepancy exists within the Contract Documents or between the Contract Documents and any provisions of any law or regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any supplier, Contractor shall report it to the Engineer in writing at once and request an amendment or supplement to the Contract documents by the Engineer. In the event that the Contractor proceeds with the Work without an amendment or supplement issued by the Engineer, Contractor shall assume all risk in performing the Work without such amendment or supplement, which shall include but not be limited to the risk that the Work performed shall be required to be removed, replaced, or corrected by the Road Commission.

3. **ENGINEER'S STATUS.**

The Engineer will be the Road Commission's representative during construction of the Project. The Engineer shall have the authority as set forth in subsection 104.01 of the MDOT Standard Specifications for Construction.

4. **SUBSURFACE AND PHYSICAL CONDITIONS**

A. Reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been provided to the Contractor are as follows: _____

B. Reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been provided to the Contractor are as follows: _____

5. **INSURANCE.**

The Contractor is required to provide the following insurance. If any part of the Contract is sublet, insurance shall be provided by the Contractor on behalf of subcontractors to cover their operations. The insurance shall be contracted with a company licensed to do business in the State of Michigan and shall be subject to the approval of the Road Commission. Certified copies in duplicate, setting forth the limits and coverage shall be furnished to the Road Commission before commencing with any Work and at the time of executing this Contract. The policy shall contain endorsements stating that a 10 day notice will be given to the Road Commission prior to termination or any change in the policy, shall provide an endorsement stating that the Road Commission, its board, officers, employees, and agents have been named as additional insureds onto such policy for all claims arising out of the Contractor's Work, and shall describe the construction project and provide coverage for the following terms:

A. Contractor's General Liability and Property Damage. The Contractor shall procure and shall maintain during the life of this Contract Contractor's General Liability Insurance in an amount not less than \$2,000,000 per occurrence for personal injuries, bodily injuries and property damage; subject to a \$3,000,000 general aggregate. Contractor shall maintain Completed Products and Operations coverage in an amount not less than \$3,000,000. Coverage shall also include property damage for the following items:

1. Underground Damage to facilities due to drilling and excavating with mechanical equipment in streets and highways, easements or public property.
2. Collapse or Structural Injury to structures due to blasting or explosion, excavation, tunneling, pile driving or cofferdam Work.

It is understood and agreed that all coverages afforded are considered to be primary and any other insurance that the Road Commission may have in effect shall be considered secondary or excess.

B. Automobile Insurance. The Contractor shall procure and maintain during the life of this Contract Owned, Contract Hired and Non-Ownership Motor Vehicle Bodily Injury Insurance (comprehensive form) in an amount not less than \$500,000 for injuries, including accidental death for each person; and in an amount not less than \$1,000,000 for each accident; and Property Damage Liability Insurance in an amount not less than \$1,000,000 for each accident; and combined single limit for Bodily Injury and Property Damage Liability Insurance in an amount not less than \$1,000,000 for each occurrence. These requirements may be met through an Umbrella Policy.

C. Worker's Compensation. The Contractor shall comply with the requirements of the Michigan Worker's Compensation Law and shall maintain such insurance as will protect him from claims under said law, and from any other claim for personal injury, including death, which may arise from operations by himself or by any other Contractor, or anyone directly or indirectly employed by either of them, and will give proof of such insurance to the Road Commission Engineer at the time of filing its bonds and Contract.

D. Owner's (Road Commission's) Protective Liability. The Contractor shall furnish to the Road Commission an Owner's Protective Liability Policy insuring the Road Commission in an amount not less than \$1,000,000 per person and per occurrence for bodily injury and property damage.

E. Cancellation. If any of the insurance is canceled, the Contractor and all subcontractors shall cease operations, and shall not resume until new insurance is obtained.

6. **BONDS.**

The Contractor will be required to furnish surety bonds from a surety company with an A.M. Best rating of 'A' or better, U.S. Treasury Department listed and admitted to do business in the State of Michigan effective on the date the Notice to Proceed is issued.

The surety shall be acceptable to the Road Commission and shall be provided at the time this Contract is executed by the Contractor. Each bond shall be on the AIA Document A312 forms provided in accordance with the requirements set forth under subsections 102.15 and 102.16 of the MDOT Standard Specifications for Construction.

7. **PERMITS.**

The Contractor shall obtain all permits required for the Work by any federal, state, or local law, rule, code, or regulation. Contractor shall pay for same at Road Commission's own expense. Any inspection fees associated with such permits shall be paid for by the Contractor and Contractor shall conduct construction operations in accordance with provisions of such permits including tunneling of utilities where reburied. Contractor shall also furnish any required bonds and pay the cost of same.

8. PRE-CONSTRUCTION MEETING.

A pre-construction meeting X **will not** be required. After the award of the Contract by the Road Commission, the Road Commission will organize and a principal member of the Contractor's organization and any other person or entities that the Road Commission requires shall attend a pre-construction meeting with all subcontractors to be held at a place and on a date mutually agreed upon. At this time, at a minimum, the requirements of the project, the Contractor's schedule of operations and construction methods, work zone traffic plan, and, if applicable, testing orders, job mix formula shall be provided. The Contract Documents shall be delineated in order to obtain an understanding of the overall construction program by the Contractor and subcontractors.

9. SCOPE OF THE WORK - SUBJECT MATTER. The Contractor, under penalty of bond, if applicable, attached, shall furnish all labor, materials, equipment and appliances suitable, capable, and necessary for the Work and do all the Work as set forth in the bid for the above project according to the specifications, plans, bids, bonds and other Contract documents which are or become a part of this Contract, in a manner, time and place as herein set forth.

It is the intent of the Contract Documents to describe a functionally complete Project to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract or from prevailing custom or trade usage as being required to produce the intended result will be provided at no additional cost to the Road Commission. The Scope of Work is referred to herein as the "Work" or the "Scope of Work."

10. CONSTRUCTION PROGRESS SCHEDULE AND SAFETY PROGRAM.

A. At the pre-construction meeting and prior to starting Work, the Contractor shall adhere to the requirements set forth in subsections 108.04 and 108.05 of the MDOT Standard Specifications for the preparation, submission, and any subsequent modification of the Progress Schedule. Upon approval of the Progress Schedule, and any modified Progress Schedule, by the Engineer in writing, it shall become a part of the Contract Documents. The Pre-construction meeting minutes approved by the Road Commission shall become a part of the Contract Documents.

B. No later than the pre-construction meeting and prior to starting Work, the Contractor shall submit a written Construction Safety Program and provide a Project Supervisor and a Safety Supervisor in accordance with the obligations set forth in subsection 104.07 of the MDOT Standard Specifications ("Contractor Obligations") Upon approval of the Construction Safety Program, it shall become a part of the Contract documents.

11. CONTRACTOR'S SUPERVISION AND CONTROL OF THE WORK.

A. The Road Commission and the Engineer shall have the authority set forth in subsections 104.01, 104.05, and 108.03 of the MDOT Standard Specifications. The Contractor shall adhere to the requirements set forth in subsections 104.03, 104.04, 104.08, 104.09, 104.11, 104.12, and 108.03 of the MDOT Standard Specifications. If the Engineer determines that any worker employed by the Contractor or by any subcontractor, including the Project Supervisor or Safety Supervisor, does not perform the work in a proper and skillful manner or is intemperate or

disorderly, the Engineer and the Contractor shall adhere to the procedure and requirements set forth in subsection 108.03 of the MDOT Standard Specifications for Construction.

B. Contractor shall be responsible for all costs incurred by the Road Commission, including attorney fees, in connection with Contractor's failure to properly adhere to the requirements incorporated in subparagraph 11.A. above or failure to be at the site of the Work on the dates or times indicated to the Road Commission without providing at least 12 hours' notice to the Road Commission.

12. SUBCONTRACTING.

A. Contractor shall not employ any subcontractor, supplier, or other individual or entity, whether initially or as a replacement, against whom the Road Commission may have reasonable objection. Contractor shall not be required to employ any subcontractor, supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. The Contractor must follow the written subcontracting procedures and requirements set forth in subsection 108.01 of the MDOT Standard Specifications for Construction, unless otherwise specified in the applicable Contract Documents, except that the subcontractors must be pre-qualified by the Michigan Department of Transportation to perform the classification of Work proposed.

C. When a portion of the Work which has been subcontracted by the Contractor is not being executed in a manner satisfactory to the Road Commission, the subcontractor shall be removed immediately on the request of the Engineer and shall not again be employed on the Work.

13. PROTECTION OF WORK AND PROPERTY.

A. The Contractor shall have the responsibility for the Work and adhere to the requirements set forth in subsections 107.01, 107.11, and 107.12 of the MDOT Standard Specifications and shall indemnify, defend and hold harmless the Road Commission from all such damages or injuries occurring because of Contractor's Work as provided under subsection 107.10.A. of the MDOT Standard Specifications.

B. The Contractor agrees to protect and restore public and private property damaged because of acts or omissions by the Contractor and the employees or agents of the Contractor in accordance with the requirements and procedures set forth in subsection 107.07 of the MDOT Standard Specifications for Construction. The Contractor shall assume full responsibility of loss or damage to the Work during the entire construction period resulting from conditions, and from all other causes whatsoever not directly due to the acts or neglect of the Road Commission, including fire, vandalism, flood, and malicious mischief, and shall turn the finished Work over to the Road Commission in good condition and repair at the time of the request for a certificate of Substantial Completion.

C. Contractor shall provide the Road Commission with access to the site at all times during the project. No work performed by the Road Commission on the Project or at the Site shall be the basis for any claim of increased Contract Price or Contract Time under this Contract. Nor

shall the Road Commission's performance of any of the Work under the Contract be the basis for a claim for damages or anticipated profits on the Work performed by the Road Commission. Further, the Contractor shall make available to the Road Commission any traffic control or other safety measures installed by the Contractor at the time the Road Commission performs any work at the site.

14. LIMITATIONS ON USE OF SITE OR OTHER AREAS.

A. The Road Commission or the Engineer may designate portions of the right-of-way or other Road Commission property on the plans as possible locations for storing materials in accordance with Section 104.12 of the MDOT Standard Specifications for Construction. The Contractor must store materials and restore locations used for storage in accordance with section 105.06 of the MDOT Standard Specifications for Construction.

B. Prior to substantial completion of the Work, Contractor shall clean the Site and make it ready for the Road Commission's use. At the completion of the Work before final acceptance by the Engineer, Contractor must complete the requirements set forth in subsection 104.07.D. of the MDOT Standard Specifications for Construction ("Final Cleanup"), the cost of which is included in the contract unit price for other pay items.

15. CHANGES IN THE WORK.

A. The Engineer shall have the right to require changes in or additions to the Work required by the Contract documents. The Engineer shall have the right to make any deductions for the Work. Revisions to the Contract and/or Specifications, if any, shall only occur in accordance with the requirements and procedure provided in subsection 103.02 of the MDOT Standard Specifications for Construction. If the Engineer and the Contractor do not agree as to whether one of the provisions under subsection 103.02 of the MDOT Standard Specifications for Construction applies, the Contractor is directed to proceed in accordance with the dispute resolution procedure established in the Road Commission Construction Contract. No request for change, addition, deduction, or adjustment of price, or extension of time for completion thereof, shall be made or allowed unless done pursuant to an order from the Engineer specifically authorizing such change, addition or deduction and, in the case of an addition of labor, materials, equipment and appliances, specifically setting forth the agreed upon price for the additional labor, materials, equipment and appliances. Contractor shall be assumed to have agreed to the terms and conditions of any Change Order 14 days following issuance by the Road Commission notwithstanding Contractor's failure to sign the Change Order. Where the order diminishes the quantity of Work to be done, this shall not constitute a basis for a claim for damages or anticipated profits on the Work that may be dispensed with.

B. Adjustments in the Contract Price, if any, because of any change, addition or deduction in the Work shall be determined as set forth in subsections 109.03, 109.05, and 109.06 of the MDOT Standard Specifications for Construction.

C. The Engineer will grant extensions of time without liquidated damages for the excusable delays for opening traffic and completing within the contract time on each of the bases provided under subsection 108.08 of the MDOT Standard Specifications for Construction. Any request for extension of time must be submitted and shall be determined as set forth in

subsection 108.09 of the MDOT Standard Specifications for Construction. If the Contractor disagrees with the Engineer's denial of a request for an extension of time for any reason not explicitly covered elsewhere in the applicable Contract Documents, the Contractor must notify the Engineer in writing within 7 days after receipt of the Engineer's denial and must proceed in accordance with the dispute resolution procedure established the Road Commission Construction Contract.

D. It is understood and agreed that in case any change in, addition to, or deduction from the Work is required, said change shall in no way invalidate the Contract and shall not affect or discharge the bonds furnished by the Contractor. Further, no notice to the surety shall be required. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided herein. If the Contractor performs unauthorized work, the Engineer may direct the Contractor to remove and replace the unauthorized work at no additional cost to the Road Commission, as described and provided in subsection 104.05 of the MDOT Standard Specifications for Construction.

E. During the term of the Contract, the Road Commission may add locations to the Scope of the Work under this Contract by change order. Any additional locations added to the Scope of the Work and the plans and details and other specifications for the additional locations shall be deemed to be a part of this Contract and subject to the terms and conditions of this Contract and shall become a part of the Scope of the Work contemplated by this Contract following acceptance of the additional location(s) by the Contractor.

F. Any addition to the Work resulting in an increase in the Contract Price of more than 5% shall (1) be approved by the Board of County Road Commissioners for Grand Traverse County and (2) require the Contractor to obtain a rider to the Performance and Payment Bonds required under this Contract to increase the amount of the surety bonds unless this requirement is waived in writing by the Road Commission.

G. The Contractor may not make a request for an adjustment under the Contract after 28 days following the issuance of the Certificate of Substantial Completion to the Contractor by the Road Commission.

16. DIFFERING SITE CONDITION.

The Contractor represents that prior to submitting a bid, Contractor has conducted an examination of the plans, proposal, and work site in accordance with the requirements set forth in subsection 102.04 of the MDOT Standard Specifications for Construction. As such, Contractor assumes the risk in encountering differing site conditions and all costs associated therewith. In the event that the Contractor encounters a differing site condition that materially and substantially causes an increase in the cost or time required for the performance of the Work, Contractor shall proceed in accordance with subsection 103.02.C. of the MDOT Standard Specifications for Construction. In no case shall the Contractor request any increase in Contract Time or Contract Price for work already performed nor may the Contractor stop or delay the Work because of the differing site condition. In the event that the Engineer denies the request, Contractor shall be obligated to perform the Work required under this Contract or

otherwise proceed in accordance with the dispute resolution procedure established the Road Commission Construction Contract. This provision shall supersede and replace any differing site condition or similar provision contained in any incorporated standard or specification referenced in the Contract.

17. SUBSTITUTES.

Substitution may only be offered following the Notice of Award. Whenever an item of material or equipment is specified or described in the Contract documents by using the name of a proprietary item or the name of a particular supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification indicates that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other suppliers may be submitted to the Engineer for review. The Engineer in his or her sole discretion may allow the use of substitutes or "or-equal" material or equipment. The Engineer may require that the Contractor provide such assurances as the Engineer may determine are necessary to allow a proposed substitute or "or equal" item. The Contractor shall at its own expense provide all data in support of any proposed substitute or "or equal" material or equipment.

18. SHOP DRAWINGS AND SAMPLES.

The Contractor, the Road Commission, and the Engineer shall adhere to the provisions under subsection 104.02 of the MDOT Standard Specifications for Construction regarding Plans and Working Drawings and subsection 104.03 of the MDOT Standard Specifications for Construction regarding any deviations from such plans and working drawings. In case of conflict in the Contract Documents, the following establishes the order of precedence:

- A. All proposal material except the materials listed below;
- B. Special provisions;
- C. Supplemental specifications;
- D. Project plans and approved working drawings;
- E. Road Commission Standard Plans; and
- F. Road Commission General Specifications;
- G. MDOT Standard Plans;
- H. MDOT General Specifications.

Plan dimensions take precedence over calculated dimensions; calculated dimensions take precedence over scaled dimensions.

The Contractor must not take advantage of errors or omissions in the Contract or applicable Contract Documents and must immediately notify the Engineer when errors or omissions are discovered. If any errors, uncertainties, inconsistencies, omissions, or conflicts are discovered in the Contract or the applicable Contract Documents, the Engineer will determine the true intent of the Contract.

19. INSPECTION OF CONSTRUCTION.

The Contractor, the Road Commission, and the Engineer shall adhere to the provisions under subsections 104.01 and 109.07 of the MDOT Standard Specifications for Construction regarding inspection.

20. ESTIMATES AND PAYMENTS.

- A. The Engineer shall determine quantities of materials furnished and of work performed under the Contract in accordance with subsection 109.01 of the MDOT Standard Specifications for Construction. The Road Commission shall pay the Contractor for accepted quantities of pay items at the contract unit prices, and the Contractor must agree to accept such compensation as full payment, as provided under subsection 109.02 of the MDOT Standard Specifications for Construction. Payments for increased or decreased quantities, if any, shall be determined as provided under subsection 109.03 of the MDOT Standard Specifications for Construction.
- B. The Road Commission shall make progress payments in accordance with subsection 109.04 of the MDOT Standard Specifications for Construction.
- C. While the Work is being performed, the Contractor and the Road Commission or Road Commission's agent or representative shall confer daily on the quantity and amount of Work completed each day.
- D. Payment for contract revisions, if any, shall be made by the Road Commission in accordance with the provisions of subsection 109.05 of the MDOT Standard Specifications for Construction. The Contractor is not entitled to compensation for costs not specifically allowed or provided for in subsection 109.05 of the MDOT Standard Specifications for Construction, including but not limited to, the unrecoverable costs provided under subsection 109.05.G. of the MDOT Standard Specifications for Construction.
- E. Final inspection, final acceptance, and final payment shall be conducted in accordance with the provisions under subsection 109.07 of the MDOT Standard Specifications for Construction.
- F. X Contract Price \$30,000 or more or Contract Price to be paid in more than three (3) payments.

Payments, based on progress estimates, will be made within 30 days from approval for Ninety (90%) percent of the Work completed as set forth in the progress estimate, until the Work is Fifty (50%) in place. Thereafter, additional retainage shall not be withheld unless it is determined that the Contractor is not making satisfactory progress, or that there is other specific cause relating to the Contractor's performance under the Contract. If such a determination is made, not more than Ten (10%) percent of the dollar value of the work more than Fifty (50%) percent in

place shall be retained as additional retainage. No payment estimate shall be paid until approved by the Engineer, and shall be less any deductions or reservations which may be made in accordance with the terms of the Contract. No allowance will be made for materials furnished, unless incorporated in the finished Work, unless otherwise stated.

OR

Contract Price less than \$30,000 or Contract Price to be paid in three (3) or less payments.

Payments, based on progress estimates, will be made within 30 days from approval for 90% of the Work completed as set forth in the progress estimate and approved by the Engineer, less any deductions or reservations which may be made in accordance with the terms of the Contract. No allowance will be made for materials furnished, unless incorporated in the finished Work, unless otherwise stated.

G. Only those items mentioned in the bid form are pay items. It is the Contractor's responsibility to complete those items and to furnish all other materials, workers, and machines to obtain a complete and satisfactory job. All other necessary items for a complete job shall be considered incidental and not pay items.

21. ESTIMATED QUANTITIES.

The quantities of the various classes of Work to be done and materials to be furnished under this Contract, which have been estimated as stated elsewhere herein, are approximate and only for the purpose of comparing, on a uniform basis, the bids offered for the Work under this Contract; and neither the Road Commission nor its agents is to be held responsible should any of the said estimated quantities be found incorrect during the construction of the Work; and the Contractor shall make no claim or request for anticipated profit nor for loss of profit, because of a difference between the quantities of the various classes of Work actually done or materials actually delivered, and the estimated quantities as herein stated.

22. PAYMENTS WITHHELD.

A. The Road Commission may withhold or nullify the whole or a part of any certificate for progress payment to such extent as may be necessary to protect itself from loss on account of:

1. Defective Work not remedied;
2. Defective materials not replaced;
3. Claims filed or reasonable evidence indicating probable filing of claims;
4. Failure of the Contractor to make payments properly to subcontractors or for material or labor;

5. A reasonable doubt that the Contract can be completed for the balance then unpaid;
6. Damage to another contractor; or
7. Liquidated Damages.

B. When the above grounds are removed, payment shall be made for amount withheld because of them.

23. **TIME FOR COMPLETION; LIQUIDATED DAMAGES.**

- A. The Work which the Contractor is required to perform under this Contract shall be commenced and fully completed at the time stipulated by the Road Commission in a written "Notice to Proceed" to the Contractor.
- B. This is to be a daytime operation (8:00 a.m. - 5:00 p.m.), Monday through Friday, unless otherwise approved by the Engineer.
- C. Liquidated Damages for Road Commission Oversight Costs. The Contractor shall be responsible for liquidated damages in the amount set forth in the Schedule of Liquidated Damages for Oversight **in Table 108-1 of the 2020 Standard Specifications for Construction** per calendar day for each day after the substantial completion date the Work remains substantially incomplete until the Work is substantially complete unless approved by the Road Commission in writing. Additionally, the Contractor shall be responsible for liquidated damages in the amount of the greater of one-half (1/2) of the amount set forth in the Schedule of Liquidated Damages for Oversight in Table 108-1 of the MDOT Standard Specifications for Construction or the actual expenses incurred by the Road Commission each day after the Work is substantially complete but outstanding items (Punch List Items) remain incomplete unless the Punch List Items are completed within the deadline set forth by the Road Commission in writing.

Sums assessed as liquidated damages are not penalties, but fixed and agreed upon damages due to the Road Commission from the Contractor representing the Road Commission's added cost of engineering and supervision and other items causing the expenditure of public funds due to the Contractor's failure to substantially complete or complete the Work within the specified time period.

24. **USE OF REFERENCES.**

- A. Work specified by reference to the published standard or specification of a government agency, technical association, trade association, professional society or institute, testing agency, or other organization shall conform to or surpass the minimum standards of quality for materials and Workmanship established by the designated standard or specification.
- B. Where so specified, products or Workmanship shall also conform to the additional prescriptive or performance requirements included within the Contract Documents

to establish a higher or more stringent standard of quality than that required by the referenced standard.

- C. Where two or more standards are specified to establish quality, the product and Workmanship shall conform to or surpass the requirements of both.
- D. In case of conflict between referenced standards, the more stringent shall apply.
- E. Where both a standard and a brand name are specified for a product on the Contract Document, the proprietary product named shall conform to or surpass the requirements of the specified reference standard. The listing of a trade name in a Contract Document shall not be construed as warranting that such product conforms to the respective referenced standard.
- F. Copies of applicable referenced standards have not been bound in this Contract Document. Where copies of standards are needed by the Contractor for superintendence and quality control of the Work, the Contractor shall obtain a copy or copies directly from the publication source and maintain it in an orderly manner at the jobsite where it is available to the Contractor's personnel, subcontractors, Road Commission personnel and the Engineer.

25. CONTRACT SUBMITTALS.

- A. Record Drawings. **will** **will not** be required. Unless otherwise directed by the Engineer, at the time of substantial completion, the Contractor shall submit to the Engineer a current listing and description of each change incorporated into the Work since the preceding submittal.
- B. Warranties. The Contractor shall furnish one copy of all manufacturers' warranties, if any, for products or systems installed in the Project.
- C. Material Certifications. The Contractor shall submit as requested by the Engineer, material tickets, site measurements, and material certifications.

26. FAILURE TO ENFORCE. Failure by the Road Commission at any time to enforce the provisions of the Contract Documents shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the Contract Documents or any part thereof, or the right of the Road Commission to enforce any provision at any time in accordance with its terms.

27. FREEDOM OF INFORMATION ACT. The Contractor acknowledges that the Road Commission may be required from time to time to release records in its possession by law. The Contractor hereby gives permission to the Road Commission to release any records or materials received by the Road Commission as it may be requested to do so as permitted by the Freedom of Information Act, MCL 15.231 *et seq.* Provided, however, that the Contractor shall not be held liable for any reuse of the documents prepared by the Contractor under this Contract for purposes other than anticipated herein.

GRAND TRAVERSE COUNTY ROAD COMMISSION
SPECIAL PROVISION
FOR
PROGRESS CLAUSE

GTCRC:HRA

1 of 1

12-8-2023

Submit a complete, detailed and signed MDOT Form 1130, Progress Schedule, to the Engineer within seven (7) calendar day of confirmation of low bid by the department.

The progress schedule submittal must include, as a minimum, the controlling work items for the completion of the project and the planned dates (or work days for a work day project) that the work items will be the controlling operations. When specified in the proposal or contract documents the date the project is to be opened to traffic, the final project completion date, all interim completion dates, and any other controlling dates must be included in the project schedule.

After receiving Notice of Award, start work on the date agreed upon with the Engineer which date shall be no earlier than **August 5, 2024**. In no case, shall any work be commenced prior to receipt of formal notice of award by the department.

Substantial completion shall be on or before **October 31, 2024** and the entire project must be completed on or before the final project completion date of **October 31, 2024**.

Failure by the Contractor to meet interim, final and/or any stage completion dates will result in the assessment of liquidated damages in accordance with subsection 108.10 of the Standard Specifications for Construction.

After award and prior to the start of work, the Contractor must attend a preconstruction meeting with the Engineer. The schedule for this meeting will be determined by the Engineer after submittal of form 1130. The Engineer will arrange the day, time and place for the preconstruction meeting. The meeting will be conducted after project award and may be rescheduled if there are delays in the award of the project.

The named subcontractor(s) for, Designated and/or Specialty items, as shown in the proposal, is recommended to be at the preconstruction meeting if such items materially affect the work schedule.

GRAND TRAVERSE
COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

GTCRC:DRW

1 of 5

a. Description. This special provision consists of requirements and restrictions to maintain traffic on 3 Mile and Potter Roads in East Bay Township, Grand Traverse County.

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

c. Construction Influence Area (CIA). The CIA includes the right-of-way of the following roadways, within the approximate limits as listed in the log of project:

1. On 3 Mile Rd from 1 mile north of Potter Rd to 1 mile south of Potter Rd and on Potter Rd from 1 mile east of 3 Mile Rd to 1 mile west of 3 Mile Rd.
2. In addition, the CIA includes the right-of-way of any designated detour route or alternate route, intersecting roads and ramps adjacent to the work zone for a distance of approximately 1/2 mile in advance of the work zone or as far as the construction or detour signing extends.

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

1. Utilize the following Maintaining Traffic Typicals:

- A. 101-GEN-SPACING-CHARTS
- B. 102-GEN-NOTES
- C. 103-GEN-SIGN
- D. 104-GEN-AB
- E. 110-TR-NFW-2L
- F. 122-NFW-SHL-(R)
- G. WZD-100-A
- H. WZD-125-E

2. Do not work, deliver material, or close lanes during the holiday/special event periods as defined in Table 1

Table 1: 2024 Holiday Periods/Special Events

Holiday	Start Date and Time	End Date and Time
Memorial Day	3:00 pm, Thursday, May 23 rd	6:00 am, Tuesday, May 28th
Independence Day/National Cherry Festival	3:00 pm, Thursday, June 27 th	6:00 am, Tuesday, July 9 th
Labor Day	3:00 pm, Thursday, August 29 st	6:00 am, Tuesday, September 3 rd

3. Maintain a minimum of one lane(s) of traffic in each direction at all times on Cedar Run Rd, Harris Rd, Karlin Rd and Nessen Rd. (And all intersecting roads and ramps, except where detoured.)

4. Maintain a minimum of one lane of traffic in each direction at all times on all signalized side roads.

5. No more than 1 closure is allowed in each direction of travel at the same time.

6. Close any dedicated lanes (exit, ramp, turn, etc.) prior to the location under construction.

7. When a lane is closed, place channelizing devices at cross streets and major drives to form a radius that clearly defines the approaches to the through and turning traffic.

8. Maintain access to all driveways as directed by the Engineer unless prior agreements are made with the respective property owners. The cost of constructing driveways part width will not be paid for separately.

e. Traffic General.

1. For any lane open to traffic, provide a minimum lane width of 11 feet with 2 feet of shy distance on both sides unless identified otherwise on plans.

2. Do not close lanes or utilize traffic regulation sequences where work can be accomplished with a shoulder closure. Do not occupy any part of the active traffic lane with personnel or equipment when utilizing a shoulder closure. Place lane closures and traffic regulation operations only in areas as show on the plans unless otherwise directed by the Engineer.

3. Prior to shifting traffic onto shoulders or opening any lanes/shoulders and/or ramps, remove, by sweeping all accumulated debris that has collected within the shoulder and/or within the closed lane/shoulder.

4. A speed reduction will not be used.

5. The Contractor shall prepare and submit to the Engineer a project specific traffic control plan in accordance with the Michigan Manual of Uniform Traffic Control Devices and

the MDOT Maintaining Traffic Typicals. Work shall NOT be performed on a project without an approved traffic control plan.

6. Protect the work area at the end of each day. Close all open access points on the project to traffic with Type III barricades or other devices approved by the Engineer.

7. The Contractor shall notify the Grand Traverse County Road Commission, a minimum of five business days prior to implementation of any detours, lane closures or major traffic shifts. The department will be responsible for notifying emergency services, transit agencies, law enforcement and schools prior to any lane closures, detours or major traffic shifts. In addition, the Contractor will be responsible for working with and complying with any coordination that is necessary with the Grand Traverse County Road Commission and emergency services, transit agencies, law enforcement and schools. All costs associated with these coordination efforts will be considered included in the pay item **Temporary Traffic Control**

8. Remove all temporary traffic control devices from GTCRC right-of-way during any shut down periods unless needed for directly maintaining or channelizing traffic. No additional payment will be made for removal and/or redeployment of these devices except for in the case of an approved extension of time.

9. Once work is initiated that includes any lane restrictions, that work must be continued daily until completed. A lack of work activity for more than 3 days will require the removal of lane closures at no expense to the Department.

f. Traffic Regulator Control.

1. Maintain two-way traffic when necessary on the roads listed above using traffic regulator control. A traffic regulator sequence is allowed to cover a maximum closure length of 0.25 miles. Place the arrow panel, signs and channelizing taper for the traffic regulator operation at locations approved by the Engineer for adequate visibility by oncoming traffic.

2. Do not utilize more than 1 traffic regulator operation(s) at one time on the roads listed above.

3. Crossroads must remain open to traffic at all times. Use intermediate traffic regulators at each intersection approach and commercial driveways within the closure limits, as directed by the Engineer. Use traffic regulator control as directed by the Engineer for cross street traffic while paving through intersections.

4. Follow the [Michigan Traffic Regulator's Instruction Manual](#) for operations at signalized intersections. Contact the GTCRC signal technician prior to work near GTCRC traffic signals. Only the GTCRC signal technician may make changes to the traffic signal controllers. Contact the MDOT region electrician or applicable maintaining agency prior to work near MDOT traffic signals. Only the MDOT region electrician or applicable maintaining agency may make changes to the traffic signal controllers.

g. Traffic Control Devices. Ensure all traffic control devices are in accordance with the MMUTCD and must meet the "acceptable" criteria as defined in the ATSSA publication entitled

“*Quality Guidelines for Temporary Traffic Control Devices and Features*” at the time of initial deployment and after each major stage change.

1. During non-working periods, place applicable advance signs and channelizing devices at specific locations, as directed by the Engineer, at no additional cost to the Department.
2. Notify the Engineer 24 hours in advance of when traffic control devices are being delivered to the project site, to allow for initial inspection of devices to take place.
3. Remove from the project site all traffic control devices (including detour signing) no longer needed for a particular operation and equipment for construction within 14 calendar days of reopening the shoulder/lane/roadway.
4. Channelizing Devices.
 - A. Ensure all devices have sufficient ballast to prevent moving or tipping. If moving or tipping occurs, place additional ballast, as directed by the Engineer, at no additional cost to the Department. No more than two ballasts are allowed on each channelizing device.
 - B. Do not use caution tape on this project.
5. Temporary Signs.
 - A. Additional W20-1 (ROAD WORK AHEAD) signs are included in the quantities to be placed on all intersecting or adjacent roads where construction activities may be encountered.
 - B. Fabricate, install, and remove temporary sign overlays on existing signs with the pay item for Sign, Type B, Temp, Prismatic, Furn. Attach the overlay in accordance with subsection 812.03.D.2 of the Standard Specifications for Construction.

h. Traffic Signals.

1. Coordinate the removal or modification of existing traffic signals and installation of temporary or permanent signals with the Engineer.
2. Prior to each stage, all temporary and/or permanent traffic signal work necessary for traffic control during that stage must be complete and fully operational.

i. 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
Temporary Traffic Control.....	LSUM

The department will make partial payments for **Temporary Traffic Control** in accordance with the following table:

Partial Payment Schedule for Temporary Traffic Control	
Stage of Project	Total Percent of Unit Price Paid
First Use	50%
Completion	100%

DISTANCE BETWEEN TRAFFIC SIGNS, "D"

"D" DISTANCES	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
	25	30	35	40	45	50	55	60	65	70	75
D (FEET)	250	300	350	400	450	500	550	600	650	700	750

GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE, "B"

"B" LENGTHS	SPEED*, MPH (PRIOR TO WORK AREA)											
	20	25	30	35	40	45	50	55	60	65	70	75
B (FEET)	33	50	83	132	181	230	279	329	411	476	542	625

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

MINIMUM MERGING TAPER LENGTH, "L" (FEET)

OFFSET (FEET)	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
	25	30	35	40	45	50	55	60	65	70	75
1	11	15	21	27	45	50	55	60	65	70	75
2	21	30	41	54	90	100	110	120	130	140	150
3	32	45	62	80	135	150	165	180	195	210	225
4	42	60	82	107	180	200	220	240	260	280	300
5	53	75	103	134	225	250	275	300	325	350	375
6	63	90	123	160	270	300	330	360	390	420	450
7	73	105	143	187	315	350	385	420	455	490	525
8	84	120	164	214	360	400	440	480	520	560	600
9	94	135	184	240	405	450	495	540	585	630	675
10	105	150	205	267	450	500	550	600	650	700	750
11	115	165	225	294	495	550	605	660	715	770	825
12	125	180	245	320	540	600	660	720	780	840	900
13	136	195	266	347	585	650	715	780	845	910	975
14	146	210	286	374	630	700	770	840	910	980	1050
15	157	225	307	400	675	750	825	900	975	1050	1125

NOT TO SCALE



NOT TO SCALE

FILE: 101-GEN-SPACING-CHARTS.dgn

MAINTAINING TRAFFIC TYPICAL

NO:

101-GEN-
SPACING-CHARTS

"B", "D" AND "L" TABLES
CHANNELIZING DEVICE SPACING,
SIGN BORDER KEY, AND ROLL-AHEAD SPACING

DATE: MAY 2021

SHEET:

1 OF 3

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

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

$$"L" = W \times S \quad \text{WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 45 MPH OR GREATER}$$

L = MINIMUM LENGTH OF MERGING TAPER

S = POSTED SPEED LIMIT IN MPH PRIOR TO WORK AREA

W = WIDTH OF OFFSET

TYPES OF TAPERS

UPSTREAM TAPERS

MERGING TAPER	L - MINIMUM
SHIFTING TAPER	1/2 L - MINIMUM
SHOULDER TAPER	1/3 L - MINIMUM
2 TO 1 LANE ROAD TAPER	100' - MAXIMUM

DOWNSTREAM TAPERS

(USE IS RECOMMENDED)

TAPER LENGTH

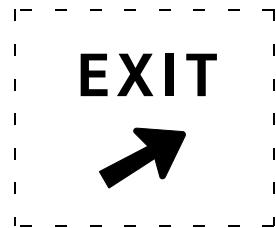
L - MINIMUM	1/2 L - MINIMUM
1/3 L - MINIMUM	100' - MAXIMUM
100' (PER LANE)	

MAXIMUM SPACING FOR CHANNELIZING DEVICES

WORK ZONE SPEED LIMIT	DRUM AND 42" DEVICE SPACING (FT)		NIGHTTIME 42" DEVICE SPACING (FT)	
	TAPE	TANGENT	TAPE	TANGENT
< 45 MPH	1 x SPEED LIMIT	2 x SPEED LIMIT	25 FEET	50 FEET
≥ 45 MPH	50 FEET	100 FEET	25 FEET	50 FEET

SIGN OUTLINE KEY

DASHED OUTLINES INDICATE A SIGN THAT EXISTS ON SITE, AND NEEDS TO BE COVERED.



SOLID OUTLINES INDICATE A SIGN THAT IS TO BE PLACED ON THE PROJECT



NOT TO SCALE



NOT TO SCALE

FILE: 101-GEN-SPACING-CHARTS.dgn

MAINTAINING TRAFFIC TYPICAL

NO: 101-GEN-
SPACING-CHARTS

"B", "D" AND "L" TABLES
CHANNELIZING DEVICE SPACING
SIGN BORDER KEY AND ROLL-AHEAD SPACING

DATE: MAY 2021
SHEET:

2 OF 3

GUIDELINES FOR ROLL-AHEAD DISTANCES FOR TMA VEHICLES – TEST LEVEL 2

WEIGHT OF TMA VEHICLE	PREVAILING SPEED (POSTED SPEED PRIOR TO WORK ZONE)	ROLL-AHEAD DISTANCE* (DISTANCE FROM FRONT OF TMA VEHICLE TO WORK AREA)
5.5 TONS (STATIONARY)	40 MPH OR LESS	25 FT

* ROLL-AHEAD DISTANCES ARE CALCULATED USING A 4,410 POUND IMPACT VEHICLE WEIGHT.

GUIDELINES FOR ROLL-AHEAD DISTANCES FOR TMA VEHICLES – TEST LEVEL 3

WEIGHT OF TMA VEHICLE	PREVAILING SPEED (POSTED SPEED PRIOR TO WORK ZONE)	ROLL-AHEAD DISTANCE* (DISTANCE FROM FRONT OF TMA VEHICLE TO WORK AREA)
5 TONS (MOBILE)	45 MPH	100 FT
	50-55 MPH	150 FT
	60-75 MPH	175 FT
12 TONS (STATIONARY)	45 MPH	25 FT
	50-55 MPH	25 FT
	60-75 MPH	50 FT

* ROLL-AHEAD DISTANCES ARE CALCULATED USING A 10,000 POUND IMPACT VEHICLE WEIGHT.



NOT TO SCALE

FILE: 101-GEN-SPACING-CHARTS.dgn

MAINTAINING TRAFFIC TYPICAL

NO: 101-GEN-
SPACING-CHARTS

"B", "D" AND "L" TABLES
CHANNELIZING DEVICE SPACING
SIGN BORDER KEY AND ROLL AHEAD SPACING

DATE: MAY 2021

SHEET:

3 OF 3

THE FOLLOWING NOTES APPLY IF CALLED FOR ON THE TRAFFIC TYPICAL

GENERAL NOTES

G1: SEE GEN-SPACING-CHARTS FOR COMMON VALUES INCLUDING:
 D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
 L = MINIMUM LENGTH OF TAPER
 B = LENGTH OF LONGITUDINAL BUFFER
 ROLL AHEAD DISTANCE

G2: DISTANCE BETWEEN SIGNS, "D", THE VALUES FOR WHICH ARE SHOWN IN TYPICAL GEN-KEY ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.

G3: ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING MUST MEET NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP 350) TEST LEVEL 3, OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) TL-3 AS WELL AS 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.

G4: DO NOT STORE EQUIPMENT, MATERIALS OR PERFORM WORK IN ESTABLISHED BUFFER AREAS.

G5: 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 TRAFFIC PATTERNS FOR WORK LESS THAN THREE DAYS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.

SIGN NOTES

S1: ALL NON-APPLICABLE SIGNING WITHIN THE CIA MUST BE MODIFIED TO FIT CONDITIONS, COVERED, OR REMOVED. FOR GUIDANCE SEE THE WORK ZONE SAFETY AND MOBILITY MANUAL, SECTIONS 6.01.09 AND 6.01.10.

S2: R5-18b SIGNS ARE ONLY REQUIRED ON FREEWAY PROJECTS WITH A DURATION OF 15 DAYS OR LONGER OR NON-FREEWAY PROJECTS WITH A DURATION OF 90 DAYS OR LONGER. TO APPLY THIS TYPICAL WITHOUT R5-18b SIGNS, REMOVE THE SIGNS AND CONSOLIDATE THE SEQUENCE AS APPROPRIATE.

S3: R5-18c IS ONLY REQUIRED IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. OMIT THIS SIGN IN SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE.

S4: ADDITIONAL SIGNING AND/OR ELONGATED SIGNING SEQUENCES SHOULD BE USED WHEN TRAFFIC VOLUMES ARE SIGNIFICANT ENOUGH TO CREATE BACKUPS BEYOND THE W20-5 SIGNS.

S5: PLACE ADDITIONAL SPEED LIMIT SIGNS REFLECTING THE WORK ZONE SPEED AFTER EACH MAJOR CROSSROAD THAT INTERSECTS THE WORK ZONE, OR AFTER EACH ENTRANCE RAMP THAT COMES ONTO THE FREEWAY WHERE THE REDUCED SPEED IS IN EFFECT. PLACE ADDITIONAL SPEED LIMIT SIGNS AT INTERVALS ALONG THE ROADWAY SUCH THAT NO SPEED LIMIT SIGNS ARE MORE THAN 2 MILES APART. WHEN REDUCED SPEED LIMITS ARE UTILIZED IN THE WORK AREA, PLACE ADDITIONAL SPEED LIMIT SIGNS RETURNING TRAFFIC TO ITS NORMAL SPEED BEYOND THE LIMITS OF THE WORK AREA AS INDICATED. IF PERMANENT SIGNS DISPLAYING THE CORRECT SPEED LIMIT ARE POSTED, OMIT ALL W3-5b AND R2-1 SIGNS AND REDUCE SPACING ACCORDINGLY.

S6: FABRICATE SPECIAL SIGNS IN ACCORDANCE WITH CURRENT SIGNING DESIGN STANDARDS.

S7: PLACE ADDITIONAL R8-3 SIGNS AT A MAXIMUM 500' SPACING THROUGHOUT THE WORK ZONE.

S8: WHEN SPEED LIMIT SIGNS CANNOT BE PLACED SIDE BY SIDE AS SHOWN, PLACE THEM "D" DISTANCE APART.

S9: STOP SIGNS NOT REQUIRED IF SIGNALS ARE ON 4-WAY FLASHING RED. STOP AHEAD SIGNS ARE NOT REQUIRED IF THERE IS ADEQUATE VISIBILITY OF THE STOP SIGN OR IF SIGNALS ARE BEING USED TO CONTROL TRAFFIC.

S10: PLACE REDUCED SPEED ZONE AHEAD SIGN (W3-5b) HERE WHEN USING A SPEED REDUCTION IN THIS DIRECTION.

S11: THE NUMBER OF W1-6 SHIFT SIGNS TO PLACE FOR A SHIFT IS AS FOLLOWS:
 SHIFTS 4FT OR LESS, PLACE ONE W1-6(R)(L)
 SHIFTS 5FT TO 12FT, PLACE TWO W1-6(R)(L)
 SHIFTS MORE THAN 12FT, PLACE THREE OR MORE W1-6(R)(L) SIGNS DEPENDING UPON LENGTH OF SHIFT AND AS PER THE ENGINEER.

S12: PLACE R2-1 SIGNS AS DETAILED IN NOTE S5 WHEN THERE IS A SPEED REDUCTION IN THIS DIRECTION

TRAFFIC REGULATOR NOTES

TR1: TRAFFIC REGULATORS MUST FOLLOW ALL THE REQUIREMENTS IN THE STANDARD SPECIFICATIONS, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS, THE CURRENT VERSIONS OF THE TRAFFIC REGULATOR'S INSTRUCTION MANUAL AND THE VIDEO "HOW TO SAFELY REGULATE TRAFFIC IN MICHIGAN". THE MAXIMUM DISTANCE BETWEEN THE TRAFFIC REGULATORS IS DETERMINED BY THE ROADWAY ADT, GEOMETRICS, AND AS DIRECTED BY THE ENGINEER.

TR2: PROVIDE APPROPRIATE BALLOON LIGHTING TO SUFFICIENTLY ILLUMINATE TRAFFIC REGULATOR'S STATIONS WHEN TRAFFIC REGULATING IS ALLOWED DURING THE HOURS OF DARKNESS.

TR3: PROVIDE EITHER A STOP/SLOW AFAD OR A RED/YELLOW LENS AFAD, MEETING THE REQUIREMENTS OF THE MMUTCD

TEMPORARY TRAFFIC CONTROL DEVICE NOTES

TCD1: THE MAXIMUM DISTANCE IN FEET BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD NOT EXCEED 1.0 TIMES THE WORK ZONE SPEED LIMIT IN MPH FOR ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT LESS THAN 45 MPH AND SHOULD NOT EXCEED 50 FEET ON ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT OF 45 MPH OR GREATER. THE SPACING FOR 42 INCH CHANNELIZING DEVICE TAPERS ARE NOT TO EXCEED 25 FEET AT NIGHT.

TCD2: THE MAXIMUM DISTANCE IN FEET BETWEEN CHANNELIZING DEVICES IN A TANGENT SHOULD NOT EXCEED TWICE THE WORK ZONE SPEED LIMIT IN MPH FOR ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT LESS THAN 45 MPH AND SHOULD NOT EXCEED 100 FEET ON ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT OF 45 MPH OR GREATER. THE SPACING FOR 42 INCH CHANNELIZING DEVICE TANGENTS ARE NOT TO EXCEED 50 FEET AT NIGHT.

TCD3: TYPE III BARRICADES MUST BE LIGHTED FOR OVERNIGHT CLOSURES.

TCD4: WHEN THE HAUL ROAD IS NOT IN USE, PLACE LIGHTED TYPE III BARRICADES WITH "ROAD CLOSED" EXTENDING COMPLETELY ACROSS THE HAUL ROAD.

TCD5: USE OBJECT MARKER SIGNS IN LIEU OF THE TYPE B HIGH INTENSITY LIGHT SHOWN IN THE STANDARD PLAN FOR TEMPORARY CONCRETE BARRIER (R-53, AND R-126) WHEN USED WITH A TEMPORARY SIGNAL SYSTEM. THE OBJECT MARKERS MUST BE A MINIMUM OF 12 INCHES IN WIDTH AND 36 INCHES IN HEIGHT AND HAVE ORANGE AND WHITE RETROREFLECTIVE SHEETING. THE RETROREFLECTIVE SHEETING MUST HAVE ALTERNATING DIAGONAL ORANGE AND WHITE STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION VEHICULAR TRAFFIC IS TO PASS.

TCD6: PLACE LIGHTED ARROW PANELS AS CLOSE TO THE BEGINNING OF TAPERS AS PRACTICAL, BUT NOT IN A MANNER THAT WILL OBSCURE OR CONFUSE APPROACHING MOTORISTS WHEN PHYSICAL LIMITATIONS RESTRICT PLACEMENT. IN CURBED SECTIONS, IF ARROW BOARD CANNOT BE PLACED BEHIND CURB, PLACE ARROW BOARD IN THE CLOSED LANE AS CLOSE TO THE BEGINNING OF TAPER AS POSSIBLE.

TCD7: ADDITIONAL TYPE III BARRICADES MAY BE REQUIRED TO COMPLETELY CLOSE OFF ROAD FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT.

TCD8: WHERE THE SHIFTED SECTION IS SHORTER THAN 600 FEET, A DOUBLE REVERSE CURVE SIGN (W24-1) CAN BE USED INSTEAD OF THE FIRST REVERSE CURVE SIGN, AND THE SECOND REVERSE CURVE SIGN CAN BE OMITTED.

TCD9: RUMBLE STRIPS ARE TO BE PLACED AS SPECIFIED IN THE CONTRACT. IF NOT SPECIFIED IN THE CONTRACT, PLACE RUMBLE STRIPS AS SHOWN, AND IN ACCORDANCE WITH THE RUMBLE STRIP MANUFACTURER'S RECOMMENDATIONS. AN ARRAY OF RUMBLE STRIPS CONTAINS THREE RUMBLE STRIPS. PLACE THE RUMBLE STRIPS IN THE ARRAY AT A CONSISTENT DISTANCE, BETWEEN 10' AND 20' APART.

TCD10: SEE THE WORK ZONE SAFETY AND MOBILITY MANUAL, PORTABLE CHANGEABLE MESSAGE SIGN GUIDELINES FOR RECOMMENDED AND CORRECT PCMS MESSAGING. STAGGER PCMS THAT ARE ON OPPOSING SIDES OF THE ROAD 1000 FEET FROM EACH OTHER.

RAMP NOTES

RMP1: WHEN CONDITIONS ALLOW, E5-1 SIGNS MUST BE REMOVED OR COVERED AND CHANNELIZING DEVICES MUST BE POSITIONED TO ENABLE RAMP TRAFFIC TO DIVERGE IN A FREE MANNER.

RMP2: STOP AND YIELD CONDITIONS SHOULD BE AVOIDED WHENEVER PRACTICAL. WHEN CONDITIONS WARRANT, R1-1 SIGNS MAY BE USED IN PLACE OF R1-2 SIGNS. WHEN R-1 SIGNS ARE USED, W3-1 SIGNS MUST BE USED IN PLACE OF W3-2 SIGNS. CONSIDERATION SHOULD BE GIVEN TO CLOSING THE RAMP TO COMPLETE WORK TO ALLOW AN ADEQUATE MERGE DISTANCE. WORK SHOULD BE EXPEDITED TO AVOID THE STOP AND/OR YIELD CONDITIONS.



NOT TO SCALE

MAINTAINING TRAFFIC TYPICAL

NO:

102-GEN-NOTES

FILE: 102-GEN-NOTES.dgn

TRAFFIC TYPICALS
NOTE SHEET

DATE: MAY 2022
SHEET:

1 OF 2

THE FOLLOWING NOTES APPLY IF CALLED FOR ON THE TRAFFIC TYPICAL

SIGNAL NOTES

SIG1: EXISTING SIGNAL MUST BE EITHER 4-WAY FLASHING RED, BAGGED, OR TURNED OFF.

SIG2: SIGNAL IS IN OPERATION.

SIG3: DELINEATE THE WORK ZONE AREA WITH 28 INCH CONES FOR DAYTIME WORK, OR 42 INCH CHANNELIZING DEVICES FOR NIGHTTIME WORK.

SIG4: THE CONTRACTOR MUST HAVE A DESIGNATED SPOTTER IF THE AERIAL BUCKET TRUCK IS LOCATED OVER ACTIVE TRAVEL LANES.

SIG5: THE LOWEST POINT OF THE BUCKET MAY NOT TRAVEL BELOW 14 FOOT VERTICAL CLEARANCE. THE CONTRACTOR MUST UTILIZE AN ALTERNATE SET UP, OR PLACE THE INTERSECTION IN A 4 WAY STOP IF THE 14 FOOT VERTICAL CLEARANCE IS COMPROMIZED. USE TRAFFIC REGULATORS TO CONTROL TRAFFIC THROUGH THE INTERSECTION WHEN TRAFFIC IS PLACED IN A 4 WAY STOP.

SIG6: DELINEATE THE TRUCK WITH CHANNELIZING DEVICES. THE POSITION OF THE TRUCK MAY BE MOVED TO FACILITATE WORK.

MAINTENANCE AND SURVEYING NOTES

MS1: WHENEVER STOPPING SIGHT DISTANCE EXISTS TO THE REAR, THE SHADOW VEHICLES SHOULD MAINTAIN THE RECOMMENDED DISTANCE FROM THE WORK AREA AND PROCEED AT THE SAME SPEED. THE SHADOW VEHICLE SHOULD SLOW DOWN AND TRAVEL AT A FARTHER DISTANCE TO PROVIDE ADEQUATE SIGHT DISTANCE IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES.

MS2: WORKERS OUTSIDE OF VEHICLES SHOULD WORK WITHIN 150' OF WORK VEHICLES WITH AN ACTIVATED BEACON, BETWEEN THE "BEGIN WORK CONVOY" SIGN AND THE "END WORK CONVOY" SIGN, OR BETWEEN THE "WORK ZONE BEGINS" AND "END ROAD WORK" SIGN.

MS3: WORK OR SHADOW VEHICLES WITH OR WITHOUT A TMA MAY BE USED TO SEPARATE THE WORK SPACE FROM TRAFFIC. IF USED, THE VEHICLES SHOULD BE PARKED ACCORDING TO THE ROLL AHEAD DISTANCE TABLES.

MS4: WORK AND SHADOW VEHICLES SHALL BE APPROPRIATELY EQUIPPED WITH AN ACTIVATED AMBER BEACON.

MS5: WHEN WORKERS ARE OUTSIDE THEIR VEHICLES IN AN EXISTING LANE WHILE A MOBILE OPERATION IS OCCURRING DURING THE NIGHTTIME HOURS, CHANNELIZING DEVICES TO DELINEATE OPEN OR CLOSED LANES AT 50 FT SPACING MUST BE USED. AN EXAMPLE OF AN OPERATION (BUT NOT LIMITED TO) IS THE LAYOUT OF CONCRETE PATCHES.

MS6: W21-6 AND W20-1 SIGNS MAY BE SUBSTITUTED AS DETERMINED BY THE TYPE OF WORK TAKING PLACE AS PER THE ENGINEER.



NOT TO SCALE

MAINTAINING TRAFFIC TYPICAL

NO:

102-GEN-NOTES

TRAFFIC TYPICALS
NOTE SHEET

DATE:
MAY 2022

SHEET:

2 OF 2

SIGN NUMBER KEY



EXIT
E5-1f
48" x 48"
60" x 48"



EXIT OPEN
E5-2
48" x 36"



EXIT CLOSED
E5-2d
48" x 36"



EXIT ONLY
E5-3
48" x 36"



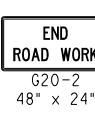
30 MPH
E13-1P
VAR x 24"



20 MPH
E13-1dP
36" x 24"



ROAD WORK
G20-1
60" x 24"



END ROAD WORK
G20-2
48" x 24"



PILOT CAR FOLLOW ME
G20-4
36" x 18"



1-6d
18" x 18"
24" x 24"
30" x 30"



INTERSTATE XX
M1-1
18" x 18"
24" x 24"
36" x 36"
48" x 48"



INTERSTATE XXX
M1-1
22.5" x 18"
30" x 24"
45" x 36"
60" x 48"



BUSINESS LOOP XX
M1-2
18" x 18"
24" x 24"
36" x 36"
48" x 48"



BUSINESS LOOP XXX
M1-2
22.5" x 18"
30" x 24"
45" x 36"
60" x 48"



BUSINESS SPUR XX
M1-3
18" x 18"
24" x 24"
36" x 36"
48" x 48"



BUSINESS SPUR XXX
M1-3
22.5" x 18"
30" x 24"
45" x 36"
60" x 48"



M1-4
18" x 18"
24" x 24"
36" x 36"
48" x 48"



M1-4
22.5" x 18"
30" x 24"
45" x 36"
60" x 48"



M1-5
18" x 18"
24" x 24"
30" x 30"
36" x 36"



M1-5d
18" x 18"
24" x 24"
30" x 30"
36" x 36"



M1-6
18" x 18"
24" x 24"
36" x 36"



M1-6
22.5" x 18"
30" x 24"
45" x 36"



NORTH
M3-1
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



EAST
M3-2
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M3-3
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M3-4
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-1
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-1a
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-2
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-3
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-4
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-5
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-6
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-7
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-7a
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-8
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M4-8a
24" x 18"



M4-8b
24" x 12"



M4-9L
30" x 24"
48" x 36"
60" x 48"



M4-9R
30" x 24"
48" x 36"
60" x 48"



M4-9j
30" x 24"
48" x 36"
60" x 48"



M4-9KL
30" x 30"
48" x 42"
60" x 54"



M4-9kR
30" x 30"
48" x 42"
60" x 54"



M4-9mL
30" x 30"
48" x 42"
60" x 54"



M4-9mR
30" x 30"
48" x 42"
60" x 54"



M4-9dL
12" x 18"



M4-9dR
12" x 18"



M4-9e
12" x 18"



M4-9f
12" x 18"



M4-9gL
12" x 18"



M4-9gR
12" x 18"



M4-9h
12" x 24"



M4-9i
12" x 18"



M4-10L
48" x 18"



M4-10R
48" x 18"



M4-11a
12" x 6"
18" x 9"
24" x 12"
30" x 15"
36" x 18"



M5-1L
12" x 9"
21" x 15"
30" x 21"



M5-1R
12" x 9"
21" x 15"
30" x 21"



M5-2L
12" x 9"
21" x 15"
30" x 21"



M5-2R
12" x 9"
21" x 15"
30" x 21"



M5-3
12" x 9"
21" x 15"
30" x 21"



M6-1L
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-1R
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-2L
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-2R
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-3
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-4
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-5
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-6L
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-6R
12" x 9"
18" x 12"
21" x 15"
30" x 21"

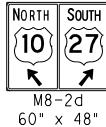
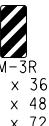
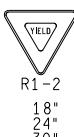
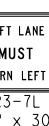
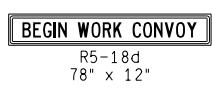
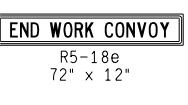
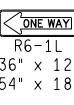
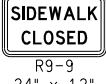
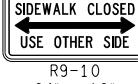
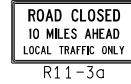


M6-7L
12" x 9"
18" x 12"
21" x 15"
30" x 21"



M6-7R
12" x 9"
18" x 12"
21" x 15"
30" x 21"

SIGN NUMBER KEY

 M8-1gL 36" x 66"	 M8-1gR 36" x 66"	 M8-2d 60" x 48"	 OM-3L 12" x 36" 24" x 48" 36" x 72"	 OM-3R 12" x 36" 24" x 48" 36" x 72"	 R1-1 18" x 18" 24" x 24" 30" x 30" 36" x 36" 48" x 48"	 R1-1a 18" x 18" 24" x 24"	 R1-2 18" x 24" 30" x 36" 36" x 48" 60" x 60"	
 R1-2aP 24" x 18" 36" x 30" 48" x 36"	 R2-1 18" x 24" 24" x 30" 30" x 36" 36" x 48" 48" x 60"	 R2-1a 48" x 60"	 R3-1 24" x 24" 30" x 30" 36" x 36" 48" x 48"	 R3-2 24" x 24" 30" x 30" 36" x 36" 48" x 48"	 R3-3 24" x 24" 36" x 36" 48" x 48"	 R3-4 24" x 24" 30" x 30" 36" x 36" 48" x 48"	 R3-5L 30" x 36" 36" x 48"	
 R3-5R 30" x 36" 36" x 48"	 R3-5a 30" x 36" 36" x 48"	 R3-6L 30" x 36" 42" x 48"	 R3-6R 30" x 36" 42" x 48"	 R3-7L 30" x 30" 36" x 36"	 R3-7R 30" x 30" 36" x 36"	 R3-8c 36" x 30"	 R3-8d 36" x 30"	
 R4-1 12" x 18" 18" x 24" 24" x 30" 36" x 48" 48" x 60"	 R4-2 12" x 18" 18" x 24" 24" x 30" 36" x 48" 48" x 60"	 R4-7 12" x 18" 18" x 24" 24" x 30" 36" x 48" 48" x 60"	 R4-8 18" x 24" 24" x 30" 36" x 48" 48" x 60"	 R4-9 18" x 24" 24" x 30" 36" x 48" 48" x 60"	 R5-1 30" x 30" 36" x 36" 48" x 48"	 R5-1a 30" x 18" 36" x 24" 42" x 30"	 R5-1b 48" x 60"	
 R5-18c 48" x 48"	 R5-18d 78" x 12"	 R5-18e 72" x 12"	 R5-18f 48" x 60"	 R5-18g 30" x 42"	 R5-18h 48" x 60"	 R6-1L 36" x 12" 54" x 18"		
 R6-1R 36" x 12" 54" x 18"	 R6-2L 12" x 16" 18" x 24" 24" x 30" 36" x 48" 48" x 60"	 R6-2R 12" x 16" 18" x 24" 24" x 30" 36" x 48" 48" x 60"	 R8-3 12" x 12" 18" x 18" 24" x 24" 36" x 36" 48" x 48"	 R9-8 36" x 18"	 R9-9 24" x 12" 30" x 18"	 R9-10 24" x 12" 48" x 24"	 R9-11L 24" x 12" 48" x 36"	
 R9-11R 24" x 12" 48" x 36"	 R9-11dL 24" x 12" 48" x 24"	 R9-11dR 24" x 12" 48" x 24"	 R10-6b 36" x 54"	 R11-2 48" x 30"	 R11-2a 48" x 30"	 R11-2b 48" x 30"	 R11-2c 60" x 30"	
 R11-3a 60" x 30"	 R11-3b 60" x 30"	 R11-4 60" x 30"						
SEE MDOT SHS 13-WORK ZONE FOR SIGN DETAILS								
 Michigan Department of Transportation	NOT TO SCALE	MAINTAINING TRAFFIC TYPICAL		TRAFFIC TYPICALS SIGN SHEET				DATE: JUNE 2021
								NO:
FILE: 103-GEN-SIGN.dgn								

SIGN NUMBER KEY



W1-1L
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-1R
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-2L
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-2R
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-2bL
36" x 36"
48" x 48"



W1-2bR
36" x 36"
48" x 48"



W1-3L
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-3R
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-4L
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-4R
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-4bL
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-4bR
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-4cL
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W1-4cR
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W24-1L
30" x 30"
36" x 36"
48" x 48"



W24-1R
30" x 30"
36" x 36"
48" x 48"



W24-1dL
30" x 30"
36" x 36"
48" x 48"



W24-1dR
30" x 30"
36" x 36"
48" x 48"



W24-1bL
30" x 30"
36" x 36"
48" x 48"



W24-1bR
30" x 30"
36" x 36"
48" x 48"



W1-6L
24" x 12"
36" x 18"
48" x 24"
60" x 30"
96" x 48"



W1-6R
24" x 12"
36" x 18"
48" x 24"
60" x 30"
96" x 48"



W1-8L
12" x 18"
18" x 24"
24" x 30"
30" x 36"
36" x 48"



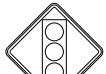
W1-8R
12" x 18"
18" x 24"
24" x 30"
30" x 36"
36" x 48"



W3-1
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W3-2
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W3-3
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W3-4
30" x 30"
36" x 36"
48" x 48"
60" x 60"



W3-4b
30" x 30"
36" x 36"
48" x 48"



W3-5
36" x 36"
48" x 48"
60" x 60"



W3-5a
30" x 30"
36" x 36"
48" x 48"



W3-5b
30" x 30"
36" x 36"
48" x 48"



W4-1L
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W4-1R
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W4-2L
30" x 30"
36" x 36"
48" x 48"



W4-2R
30" x 30"
36" x 36"
48" x 48"



W4-3L
30" x 30"
36" x 36"
48" x 48"



W4-3R
30" x 30"
36" x 36"
48" x 48"



W4-5L
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W4-5R
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W4-5P
18" x 24"
24" x 30"



W4-6L
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W4-6R
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W4-7L
30" x 30"
36" x 36"
48" x 48"
60" x 60"



W4-7R
30" x 30"
36" x 36"
48" x 48"
60" x 60"



W5-1
30" x 30"
36" x 36"
48" x 48"



W5-2
18" x 18"
30" x 30"
36" x 36"
48" x 48"



W5-3
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W5-4
30" x 30"
36" x 36"
48" x 48"



W6-1
30" x 30"
36" x 36"
48" x 48"



W6-2
30" x 30"
36" x 36"
48" x 48"



W6-3
30" x 30"
36" x 36"
48" x 48"



W6-4
12" x 18"



W7-1
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W7-1a
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W8-1
18" x 18"
24" x 24"
30" x 30"
36" x 36"
48" x 48"

SEE MDOT SHS 13-WORK ZONE FOR SIGN DETAILS



NOT TO SCALE

MAINTAINING TRAFFIC TYPICAL

NO:

103-GEN-SIGN

TRAFFIC TYPICALS
SIGN SHEET

DATE: JUNE 2021
SHEET: 1 OF 5

SIGN NUMBER KEY

						
W8-2 18" x 18" 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-3 18" x 18" 30" x 30" 36" x 36" 48" x 48"	W8-4 18" x 18" 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-5 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-5P 24" x 18" 30" x 24" 36" x 30"	W8-7 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-8 24" x 24" 30" x 30" 36" x 36" 48" x 48"
						
W8-11 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-12 30" x 30" 36" x 36" 48" x 48"	W8-14 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-15 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-15P 24" x 18" 30" x 24" 36" x 30"	W8-17L 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-17R 24" x 24" 30" x 30" 36" x 36" 48" x 48"
						
W8-18 24" x 24" 36" x 36" 48" x 48"	W8-23 24" x 24" 36" x 36" 48" x 48"	W8-24 30" x 30" 36" x 36" 48" x 48"	W8-25 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-26 36" x 36" 48" x 48"	W8-27 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W8-28 24" x 24" 30" x 30" 36" x 36" 48" x 48"
						
W9-2R 30" x 30" 36" x 36" 48" x 48"	W9-3C 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W9-3L 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W9-3R 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W9-3a 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W9-3b 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W9-2L 30" x 30" 36" x 36" 48" x 48"
						
W11-24 36" x 36" 48" x 48"	W12-1 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W12-2 18" x 18" 30" x 30" 36" x 36" 48" x 48"	W13-1P 18" x 18" 24" x 24" 30" x 30"	W13-2 24" x 30" 36" x 48" 48" x 60"	W13-3 24" x 30" 36" x 48" 48" x 60"	W11-10a 24" x 24" 30" x 30" 36" x 36" 48" x 48"
						
W13-6a 24" x 42" 36" x 60" 48" x 84"	W13-7 24" x 42" 36" x 60" 48" x 84"	W13-7a 24" x 42" 36" x 60" 48" x 84"	W14-3 36" x 24" 40" x 30" 48" x 36" 64" x 48"	W16-2P 18" x 12" 24" x 18" 30" x 24" 36" x 30"	W16-4dP 18" x 12" 24" x 18" 30" x 24" 36" x 30"	W13-6 24" x 42" 36" x 60" 48" x 84"
						
W20-1 24" x 24" 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W20-1a 24" x 24" 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W20-1b 24" x 24" 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W20-1c 24" x 24" 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W20-1d 24" x 24" 30" x 30" 36" x 36" 48" x 48" 60" x 60"	W20-2 30" x 30" 36" x 36" 48" x 48"	W20-3 30" x 30" 36" x 36" 48" x 48"
						
W20-3a 30" x 30" 36" x 36" 48" x 48"	W20-4 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W20-5 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W20-6 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W20-7 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W20-8 24" x 24" 30" x 30" 36" x 36" 48" x 48"	W20-9 24" x 24" 30" x 30" 36" x 36" 48" x 48"

SEE MDOT SHS 13-WORK ZONE FOR SIGN DETAILS



NOT TO SCALE

MAINTAINING TRAFFIC TYPICAL

NO:

103-GEN-SIGN

TRAFFIC TYPICALS
SIGN SHEET

DATE: JUNE 2021
SHEET:

SIGN NUMBER KEY



W20-3b
30" x 30"
36" x 36"
48" x 48"



W20-4
30" x 30"
36" x 36"
48" x 48"



W20-4c
36" x 36"
48" x 48"



W20-5c
30" x 30"
36" x 36"
48" x 48"



W20-5L
30" x 30"
36" x 36"
48" x 48"



W20-5L1
30" x 30"
36" x 36"
48" x 48"



W20-5L2
30" x 30"
36" x 36"
48" x 48"



W20-5R
30" x 30"
36" x 36"
48" x 48"



W20-5R1
30" x 30"
36" x 36"
48" x 48"



W20-5R2
30" x 30"
36" x 36"
48" x 48"



W20-5aL2
30" x 30"
36" x 36"
48" x 48"



W20-5aL3
30" x 30"
36" x 36"
48" x 48"



W20-5aR2
30" x 30"
36" x 36"
48" x 48"



W20-5aR3
30" x 30"
36" x 36"
48" x 48"



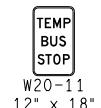
W20-8
24" x 18"



W20-9
54" x 48"



W20-10
48" x 24"
66" x 30"



W20-11
12" x 18"



W20-12P
VARIABLE x 12"



W20-13P
VARIABLE x 12"



W20-14L
36" x 36"
48" x 48"



W20-14R
36" x 36"
48" x 48"



W20-14aP
36" x 12"
48" x 12"



W20-14bP
36" x 12"
48" x 12"



W20-15
36" x 36"
48" x 48"



W20-15a
36" x 36"
48" x 48"



W20-15c
48" x 54"



W20-15d
48" x 54"



W20-16
36" x 36"
48" x 48"



W20-17
36" x 36"
48" x 48"



W21-1
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W21-2
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W21-2
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W21-3
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W21-4
36" x 18"



W21-5
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W21-5aL
30" x 30"
36" x 36"
48" x 48"
60" x 60"



W21-5aR
30" x 30"
36" x 36"
48" x 48"
60" x 60"



W21-5bL
30" x 30"
36" x 36"
48" x 48"
60" x 60"



W21-5bR
30" x 30"
36" x 36"
48" x 48"
60" x 60"



W21-6
24" x 24"
30" x 30"
36" x 36"
48" x 48"



W21-7
30" x 30"
36" x 36"
48" x 48"



W21-8
30" x 30"
36" x 36"
48" x 48"



W22-1
30" x 30"
36" x 36"
48" x 48"



W22-2
42" x 36"



W22-3
36" x 30"
42" x 36"



W23-1
48" x 24"



W23-2
36" x 36"
48" x 48"

SEE MDOT SHS 13-WORK ZONE FOR SIGN DETAILS



NOT TO SCALE

MAINTAINING TRAFFIC TYPICAL

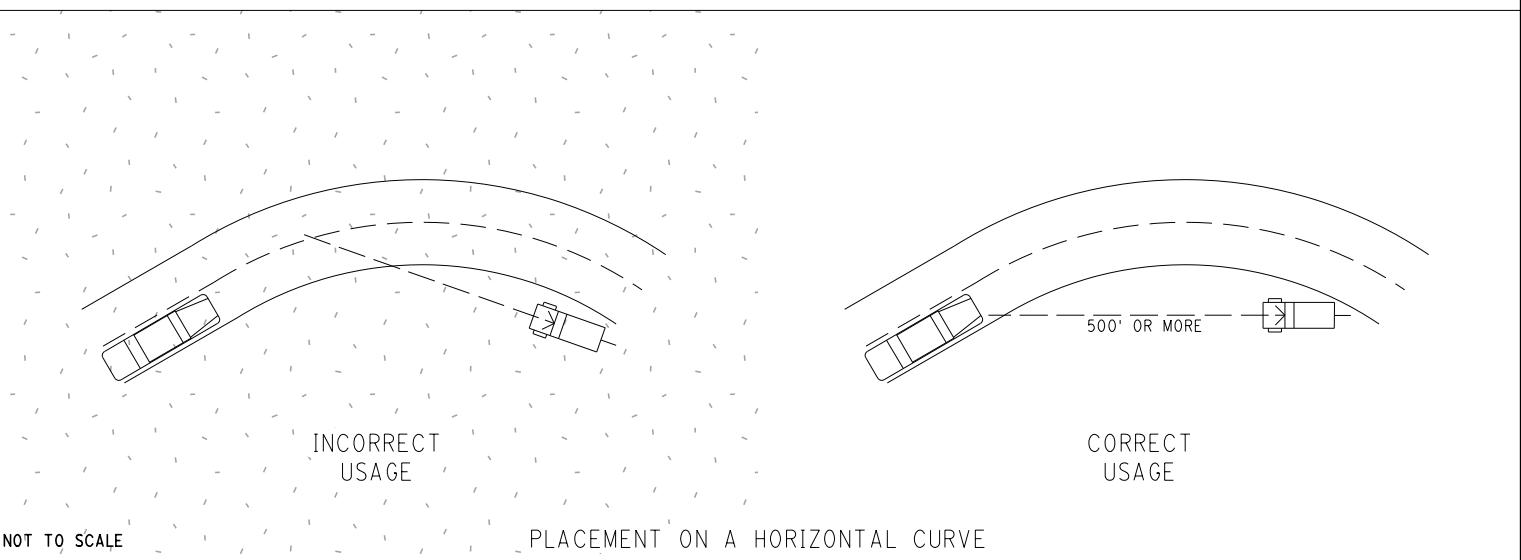
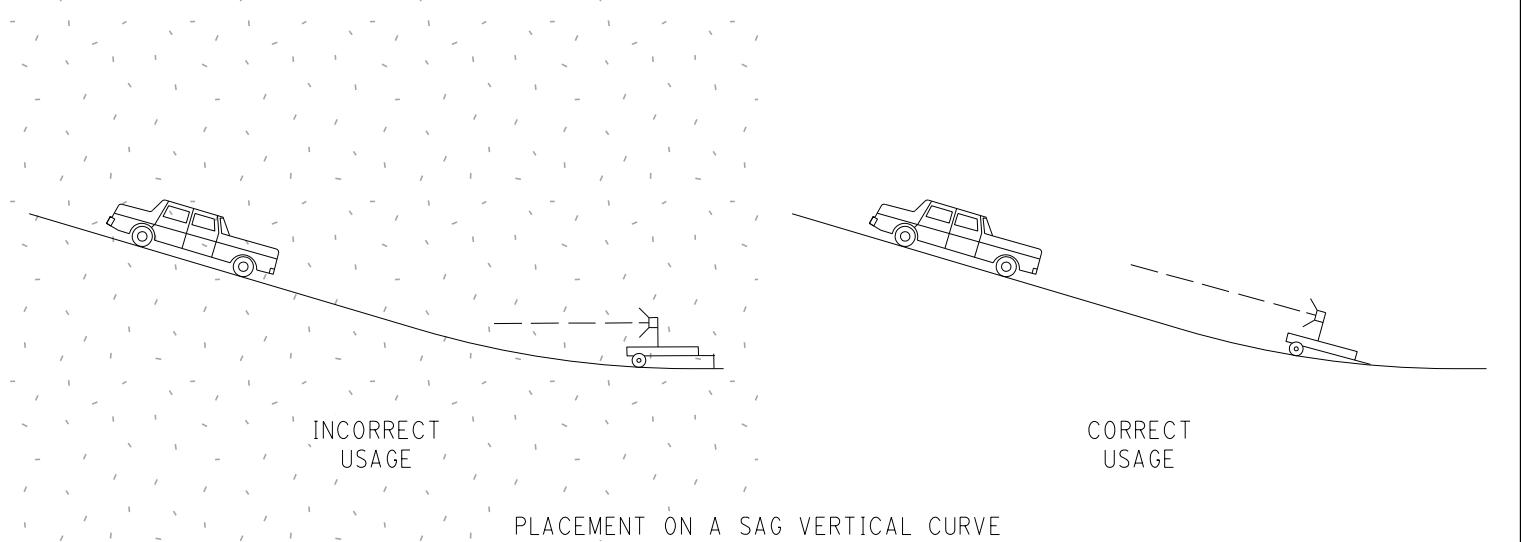
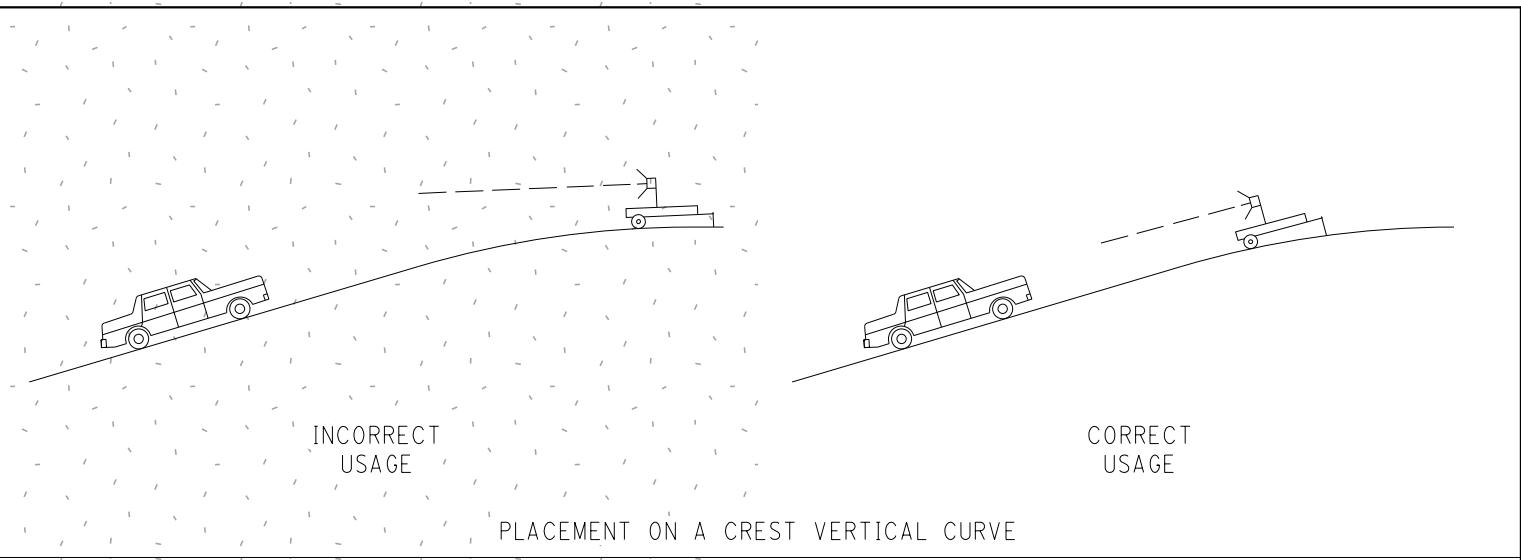
NO:

103-GEN-SIGN

TRAFFIC TYPICALS
SIGN SHEET

DATE: JUNE 2021
SHEET:

5 OF 5



NOT TO SCALE

NOTE:

ENSURE THE ARROW REMAINS CLEARLY LEGIBLE AT DISTANCES FROM 2,500 FEET TO 200 FEET, FROM ALL TRAFFIC LANES AND ROADWAY ENTRANCES. DO NOT PLACE THE LIGHTED ARROW ON A HORIZONTAL OR VERTICAL CURVE THAT MIGHT INTERFERE WITH THIS LEGIBILITY REQUIREMENT.



NOT TO SCALE

MAINTAINING TRAFFIC TYPICAL

NO:

104-GEN-AB

USE OF ARROW BOARD ON HILL OR CURVE
AND WORK ZONE LAYOUT

DATE:
MAY 2021
SHEET:
1 OF 1

KEY

- TRAFFIC REGULATOR
- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL (CAUTION MODE)
- ← TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT
- PLACE SIGN AS INDICATED IN NOTE S5
- PLACE SIGN AS INDICATED IN NOTE S2

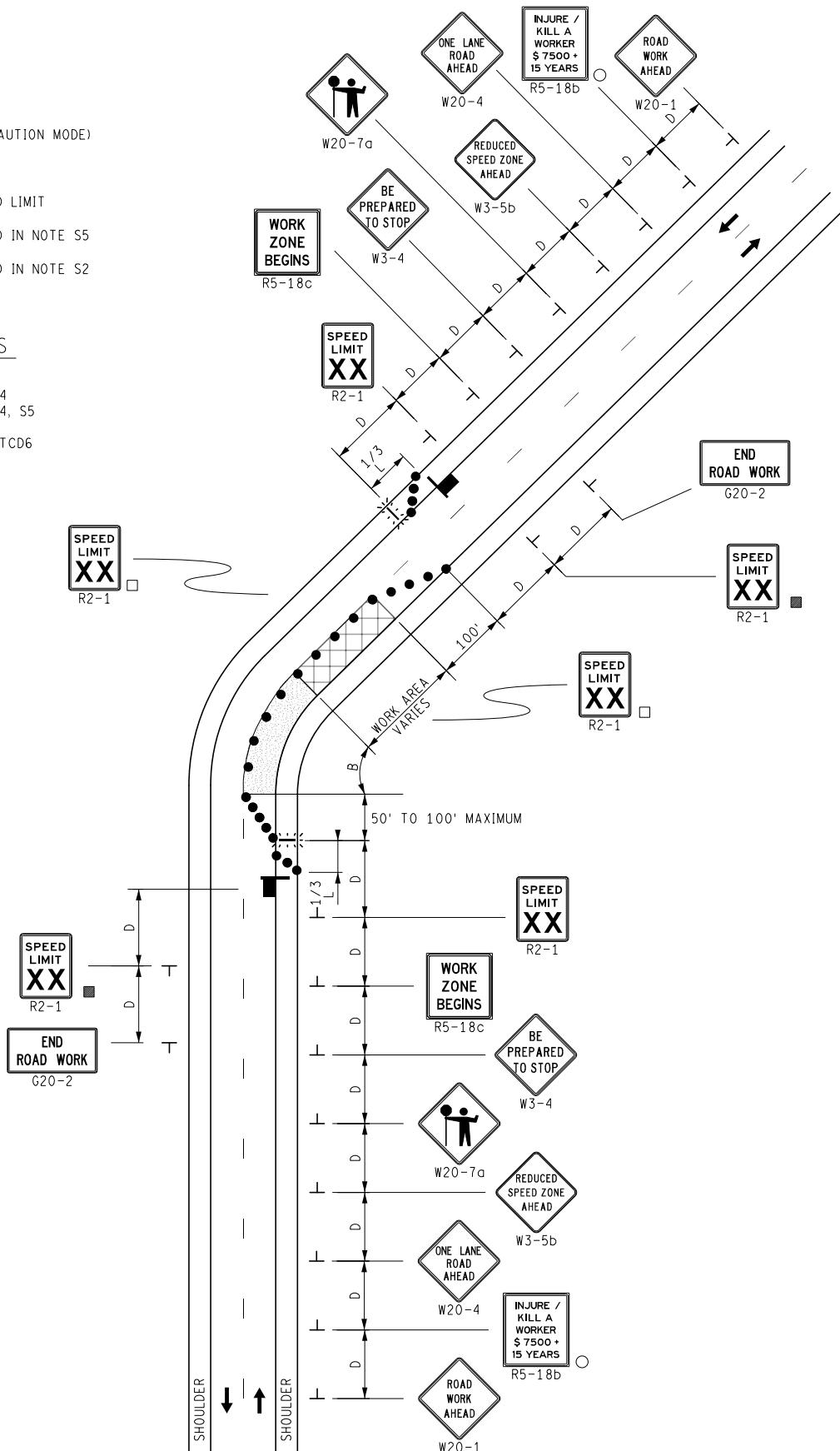
STANDARD NOTES

(SEE GEN-NOTES)

GENERAL: G1, G2, G3, G4

SIGNING: S1, S2, S3, S4, S5

TRAF REG: TR1, TR2



NOT TO SCALE

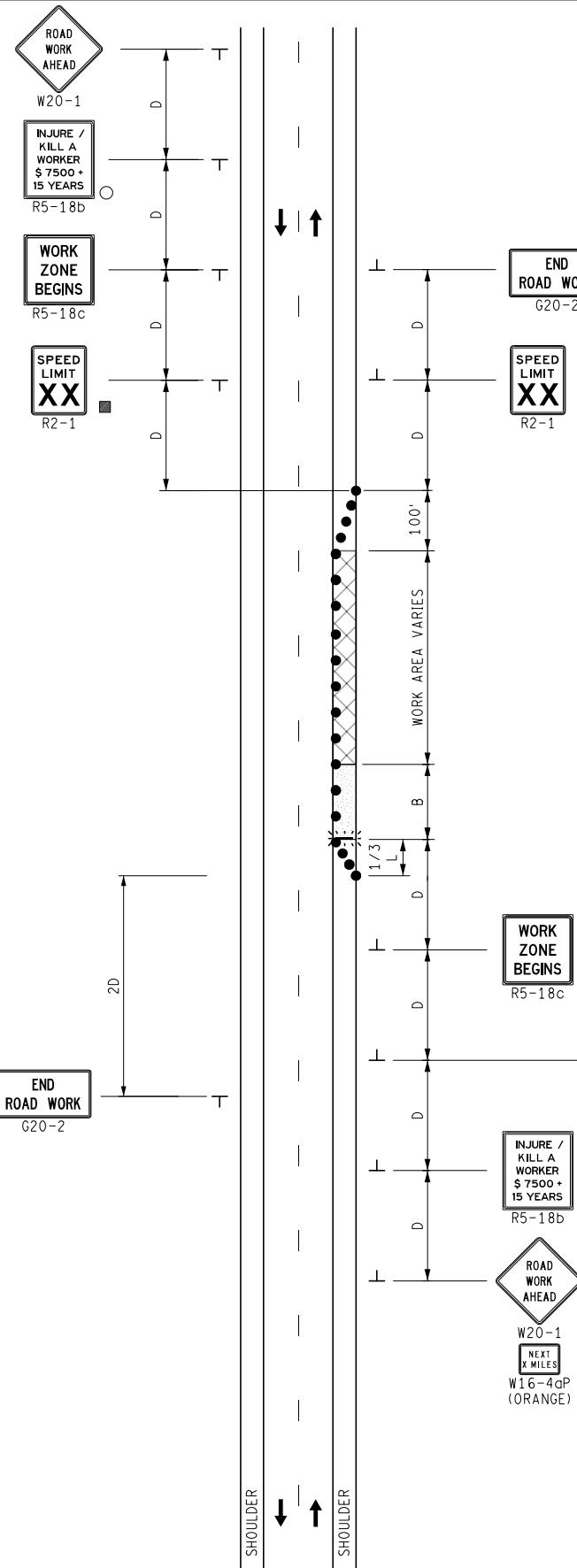
MAINTAINING TRAFFIC TYPICAL

NO: 110-TR-NEW-21

LANE CLOSURE
UTILIZING TRAFFIC REGULATORS
ON A 2-LANE UNDIVIDED ROADWAY

DATE:
MAY 2021

1 OF 1

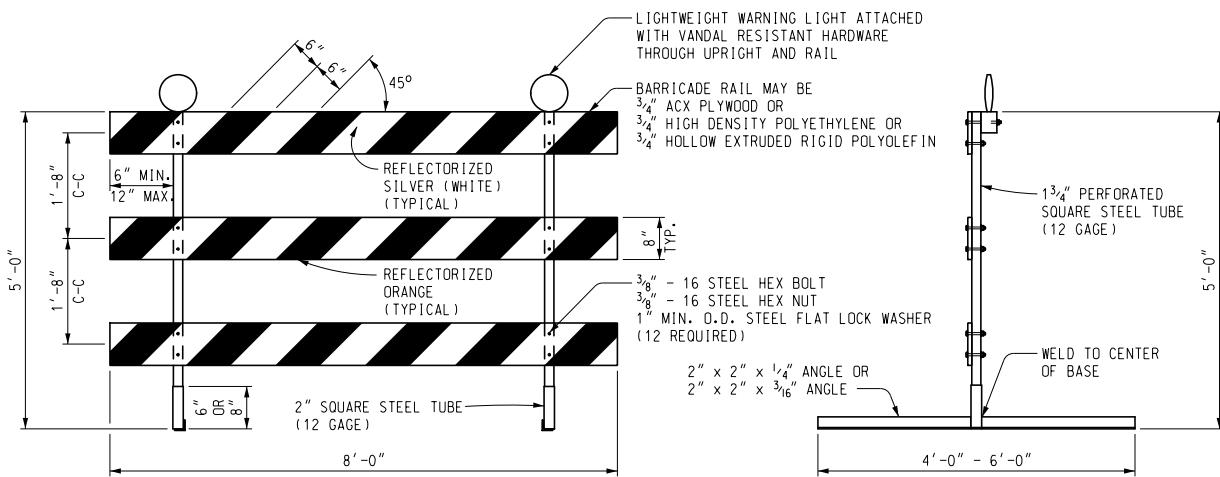


KEY

- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL (CAUTION MODE)
- ← TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT
- PLACE SIGN AS INDICATED IN NOTE S2

STANDARD NOTES (SEE 102-GEN-NOTES)

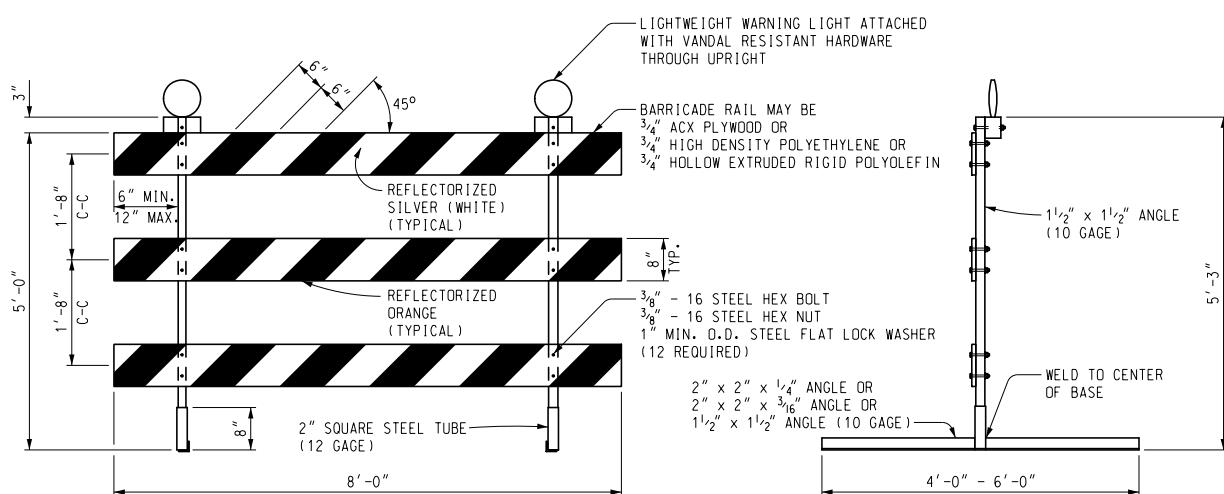
GENERAL: G1, G2, G3, G4
SIGNING: S1, S2, S3, S5
DEVICES: TCD1, TCD2, TCD6, TCD7



FRONT ELEVATION

SIDE VIEW

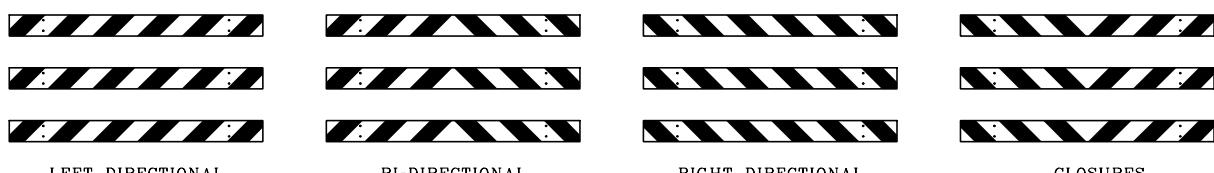
PERFORATED SQUARE STEEL TUBE OPTION



FRONT ELEVATION

SIDE VIEW

ANGLE IRON OPTION



LEFT DIRECTIONAL

BI-DIRECTIONAL

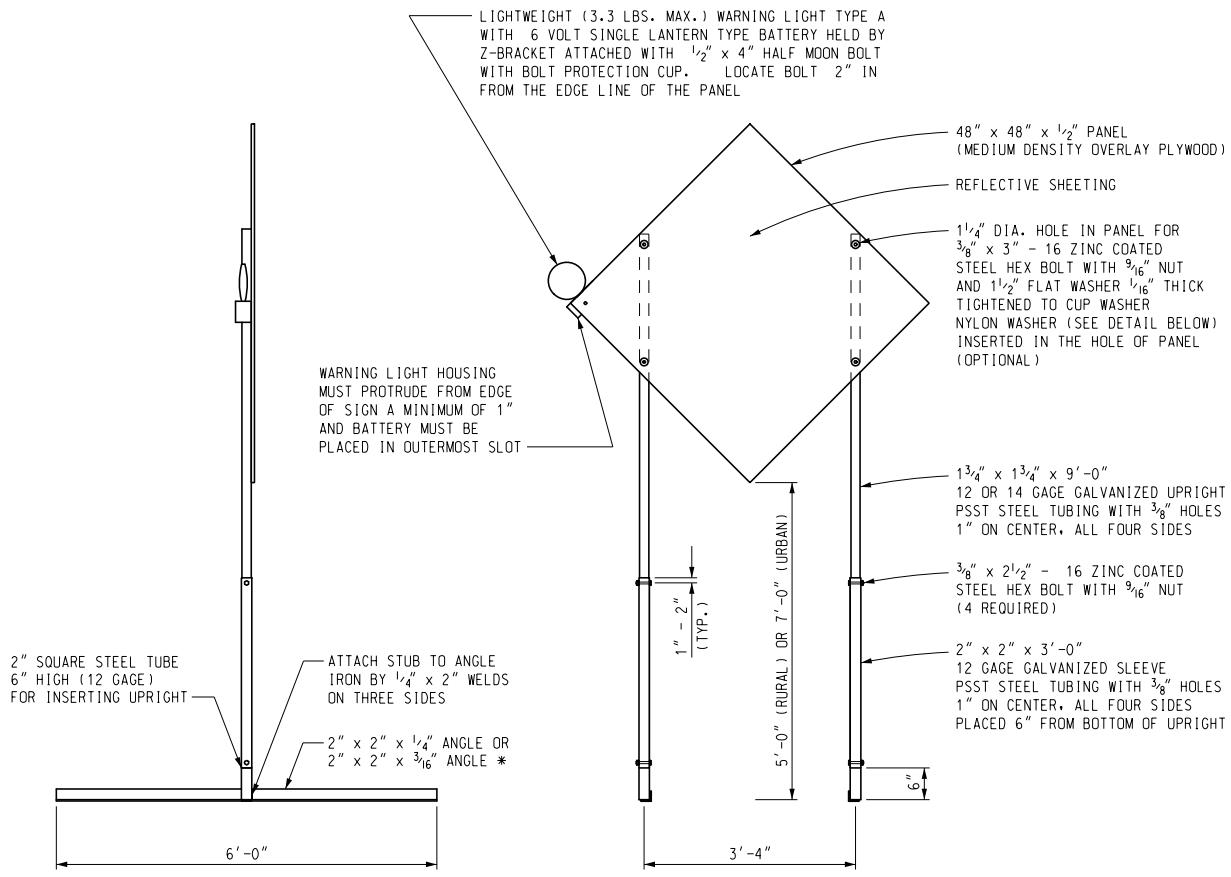
RIGHT DIRECTIONAL

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

 PREPARED BY OPERATIONS FIELD SERVICES DRAWN BY: <u>ECH</u> CHECKED BY: <u>MWB</u>	DEPARTMENT DIRECTOR Paul C. Ajegba APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF FIELD SERVICES SPECIAL DETAIL FOR Temporary Traffic Control Devices		
		APPROVED BY: _____ (SPECIAL DETAIL) DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	Page 53 of 98 F.H.W.A. APPROVAL	6/16/22 PLAN DATE



SIDE VIEW

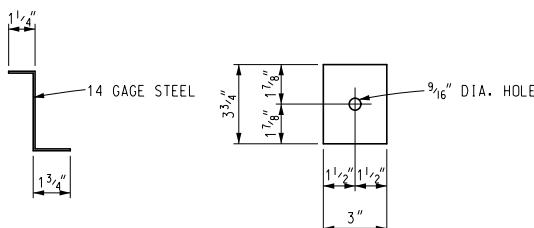
FRONT ELEVATION

TEMPORARY SIGN SUPPORT

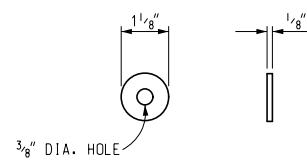
(WARNING LIGHT PLACED ON SIDE CLOSEST TO TRAFFIC)

* 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

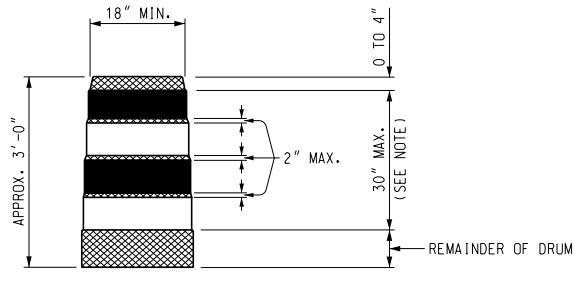


OPTIONAL NYLON WASHER

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



■ REFLECTORIZED ORANGE

□ REFLECTORIZED WHITE

▨ NON REFLECTORIZED ORANGE

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

PLASTIC DRUM

NOTES:

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

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

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

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

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

NOT TO SCALE

GRAND TRAVERSE COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
Traffic Sign Equipment

GTCRC:HRA

1 of 1

12-8-2023

a. Description. This work consists procuring traffic sign equipment as called for in the construction plans. Traffic sign equipment shall be installed per the 2020 standard specifications for construction and applicable special provisions included in this contract.

b. Materials. The materials and equipment shall be as specified in the table below:

Item Code	Description	GTCRC Specifics
8200071	Flsh Beacon, Solar	Carmanah R247MX

c. Construction. Construction methods must be in accordance with applicable plans and specifications included in this contract.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the referenced pay items.

GRAND TRAVERSE COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
Traffic Sign Removal

GTCRC:DRW/HRA

1 of 1

12-8-2023

a. Description. This work consists of coordinating traffic sign equipment removal, as called for in the construction plans, with the GTCRC.

b. Materials. None

c. Construction. Removal of traffic signal equipment and fixtures shall be completed in a manner to avoid damage to equipment. Equipment shall be returned to the GTCRC in the same condition as prior to removal. The contractor will coordinate activities with 48 hour advanced notice with GTCRC personnel, and conduct the following.

- Pre-construction equipment condition review
- Post-removal equipment condition review

Equipment removal activities are subject to the following for responsibility. Where responsibility is not listed, any materials, labor, and equipment are the responsibility of the contractor as shall be paid for at the unit price for the respective item of work:

24S203 F00013 Three Mile Rd and Potter Rd

Field: Contractor to remove

- Concrete Foundations
- Wooden Sign Posts
- Signs
- Flashing Beacon

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price for applicable pay items.

MICHIGAN
DEPARTMENT OF TRANSPORTATIONSPECIAL PROVISION
FOR
SOLAR POWER FLASHING BEACON, SINGLE OR DUAL

SIG:EMS

1 of 4

APPR:HLO:NJB:05-05-20
FHWA:APPR:05-06-20

a. Description. This work consists of completing one or more of the following work types at locations shown on the plans:

1. Furnishing and installing a single solar power flashing beacon assembly.
2. Removing and disposing of an existing single solar power flashing beacon assembly.
3. Furnishing and installing a dual solar power flashing beacon assembly.
4. Removing and disposing of an existing dual solar power flashing beacon assembly.

As applicable, this work includes removal or installation of the solar engine, solar panel, solar power light emitting diode (LED) flashing beacon signal modules with housing, mounting hardware, and all associated material required to ensure a complete removal or installation, as specified for a location. Storage and disposal of materials, when required, is also included in this item.

b. Material. Provide materials in accordance with sections 918 and 921 of the Standard Specifications of Construction and the following:

1. Solar Engine Assembly. The solar engine must meet all of the following requirements:
 - A. Fabricated from powder coated aluminum, with nominal dimensions of:
 - (1) 6 inches by 17 inches by 30 inches for a 20-watt panel.
 - (2) 6 inches by 17 inches by 21 inches or 6 inches by 20 inches by 21 inches for a 50-watt panel.
 - (3) 6 inches by 20 inches by 31 inches for a 80-watt panel.
 - B. Include an UL approved, integrated 20-watt, 50-watt, or 80-watt solar charger (solar panel) and battery system with mounting hardware.
 - C. Operate on 12 volts direct current (VDC).
 - D. Battery bracket enclosing the battery in a manner which restricts thermal expansion of the battery; must not require an external control or battery cabinet.
 - E. All batteries and electronics mounted with aluminum flashing.

F. House one, field-replaceable, sealed lead acid battery of:

- (1) 33 Ampere-hour (Ah) for the 20-watt panel;
- (2) 75Ah for the 50-watt panel; or
- (3) 100Ah for the 80-watt panel.

G. Vented to provide cooling of the battery and electronic system. Ensure the venting is covered with wire mesh to prevent insect intrusion.

H. Ensure weight, including mounting hardware, does not exceed 81 pounds.

I. Accommodate mounting third party device(s) such as wireless contact closure type radios or sensing equipment and an auxiliary 12VDC power output to provide power to the device(s).

J. Provide sufficient empty space, 2 $\frac{3}{4}$ inch by 7 inch by 10 inch space (maximum), to house a third party device.

K. Capable of operating single or dual solar power LED flashing beacons (sign optics). For the dual type operation where flashing beacons are located on either side of the roadway, provide a simultaneous type of flashing operation facing approaching traffic.

L. Ensure the solar panel meets the design qualification and type approval of photovoltaic modules in accordance with *IEC 61215*. This specification includes radiation testing, thermal testing, and mechanical testing for environmental conditions such as ultraviolet (UV)-exposure and thermal cycling, as well as degradation of maximum power output.

M. Can be tilted and oriented south without additional mounting hardware.

2. Solar Beacon. Ensure the solar beacon system meets all of the following requirements:

A. Operate on 12VDC.

B. Operate continuously (24 hour operation) when the battery is connected. The solar beacon must have the option to be activated by a third party switch or third party device with compatible wireless contact closure type radio output.

C. Conform to *MMUTCD* standards for flashing beacons.

D. Flash rate of not less than 50 or more than 60 per minute.

E. Illuminated period of each flash not less than one-half and not more than two-thirds of the total cycle.

F. Nighttime dimming feature.

- G. Minimum operating autonomy of 30 days.
- H. Automatically reduce light output when battery is low to reduce the risk the beacon will fail entirely in poor solar conditions.
- I. Painted with a semi-gloss yellow enamel. The color must match the central color within the limits shown on FHWA Highway Yellow Tolerance Chart, except the color must not be darker than the central color.
- 3. LED Signal Module/Housing. The LED signal module must conform to the mandatory specifications of *ITE Vehicle Traffic Control Signal Heads (VTCSH), Light Emitting Diode (LED) Circular Signal Supplement* as required by the *MMUTCD*. The LED signal housing must meet the equipment standard of the *ITE Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2*.
- 4. Environmental Requirements. Ensure the system is able to operate in a temperature range of -40 degrees Fahrenheit (F) to +122 degrees F.

Ensure the system is designed and constructed to withstand 110 mile per hour (mph) wind loads in accordance with the requirements of the *AASHTO publication, Standard Specifications for Structural Supports of Highway Signs, Luminaires and Traffic Signals*.

Design and test the electronic circuit board housing, wire harnessing, and connectors in accordance to *International Electrotechnical Commission (IEC) Standard 60529, Ingress Protection IP67* requiring the enclosure be dust tight and remain completely sealed when immersed in water to a depth of 3 feet for 1 hour.

The LED module must meet the following environmental tests as specified in the *ITE Vehicle Traffic Control Signal Heads, Light Emitting Diode (LED) Circular Signal Supplement*:

- A. Mechanical vibration. *MIL-STD-883*.
- B. Temperature cycling. *MIL-STD-883*.
- C. Moisture resistance. *MIL-STD-810F*.

5. Quality/Warranty. Ensure the system is *Federal Communications Commission (FCC)* certified to comply with all *47 CFR FCC Part 15 Subpart B Emission* requirements.

Provide a manufacturer's warranty, transferable to the MDOT, that the supplied materials are free from all defects in materials and workmanship. Furnish the warranty and other applicable documents from the manufacturer, and a copy of the invoice showing date of shipment, to the Engineer prior to acceptance

c. Construction. Furnish, install, or remove the single or dual solar power flashing beacon as shown on the plans or directed by the Engineer. Complete this work in accordance with sections 819 and 820 of the Standard Specifications for Construction, per the contract, and this special provision. Remove and dispose of the material, as directed by the Engineer, in accordance with section 204 of the Standard Specifications for Construction.

Deliver the entire system as a complete unit ready to install, requiring no assembly. Mount the solar engine assembly as shown on the plans. Provide the assembly and bracket for mounting as shown on the plans. Mount each 12 inch solar power LED flashing beacon (12VDC) separately, at each sign location, including required brackets, hardware, fittings, connectors, and other associated material necessary to complete the work.

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

Pay Item	Pay Unit
Flsh Beacon, Solar Power	Each
Flsh Beacon, Solar Power, Rem.....	Each
Flsh Beacon, Solar Power, Dual.....	Each
Flsh Beacon, Solar Power, Dual, Rem.....	Each

GRAND TRAVERSE COUNTY ROAD COMMISSION
SPECIAL PROVISION
FOR
NOTICE TO BIDDERS UTILITY COORDINATION

GTCRC:DRW

1 of 2

12-08-2023

The contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2020 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the contractor shall follow the requirements in Section 107.12 of the 2020 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 108.09 and 109.05 of the 2020 MDOT Standard Specifications for Construction.

For the protection of underground utilities and in conformance with Public Act 174 of 2013, the contractor shall contact MISS DIG System, Inc. via web based locate request at missdig811.org, or by placing a toll free call to 811, or 1-800-482-7171 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the contractor of the responsibility of notifying utility owners who may not be a part of the MISS DIG alert system.

Public Utilities:

The following Public Utilities have facilities located within the Right-of-Way:

Communication Century Link (AT&T) 205 Harris St Cadillac, MI 49601 231-779-8451 Contact: Jeff Schuster	Electric Consumers Energy 821 Hastings Street Traverse City, MI 49686 231-929-6242 Contact: Blake Wilson
Water/Sewer Grand Traverse DPW 2650 LaFranier Road Traverse City, MI 49686-8872 231-995-6039 Contact: Sam Tyson	Electric Cherryland Electric 5930 US-31 So Grawn, MI 49637 231-486-9200 Contact: Frank Siepker
Cable TV Charter Communications 5595 Cedar Run Road Traverse City, MI 49684 231-932-8130 Contact: Eric Brown	Fiber Grand Traverse Band of Ottawa and Chippewa 2605 N West Bayshore Drive Peshawbestown, MI 49682 231-534-7179 Contact: Steve Marth
Gas DTE Energy 1250 Mich Con Lane, SW PO Box 279 Kalkaska, MI 49646 231-258-3785 Contact: Larry Bourke	Communication AcenTek 5351 N M37 Mesick, MI 49668 231-885-3165 Contact: Kelly P Stiner

Roadway Grand Traverse County Road Commission 1881 LaFranier Road Traverse City, MI 49696 231-922-4848 Contact: Wayne Schoonover	Traffic Signals Grand Traverse County Road Commission 1881 LaFranier Road Traverse City, MI 49696 231-392-1454 Contact: Hayley Avery
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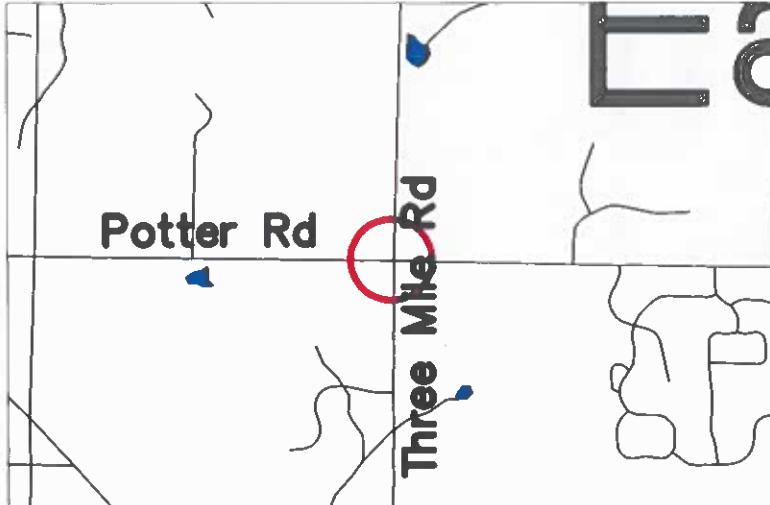
The owners of existing service facilities that are within grading or structure limits and in conflict will move them to locations designated by the Engineer or will remove them entirely from the road Right-of-Way, when feasible. Owners of Public Utilities will not be required by the Grand Traverse County Road Commission to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are dangerous to the Contractor's operations.

GRAND TRAVERSE COUNTY ROAD COMMISSION

24S203 ADVANCED WARNING BEACON MODERNIZATION PROJECT

PLANS OF PROPOSED IMPROVEMENTS TO:

THREE MILE RD AND POTTER RD
(EAST BAY TWP)
ADVANCED WARNING BEACON (F00013)

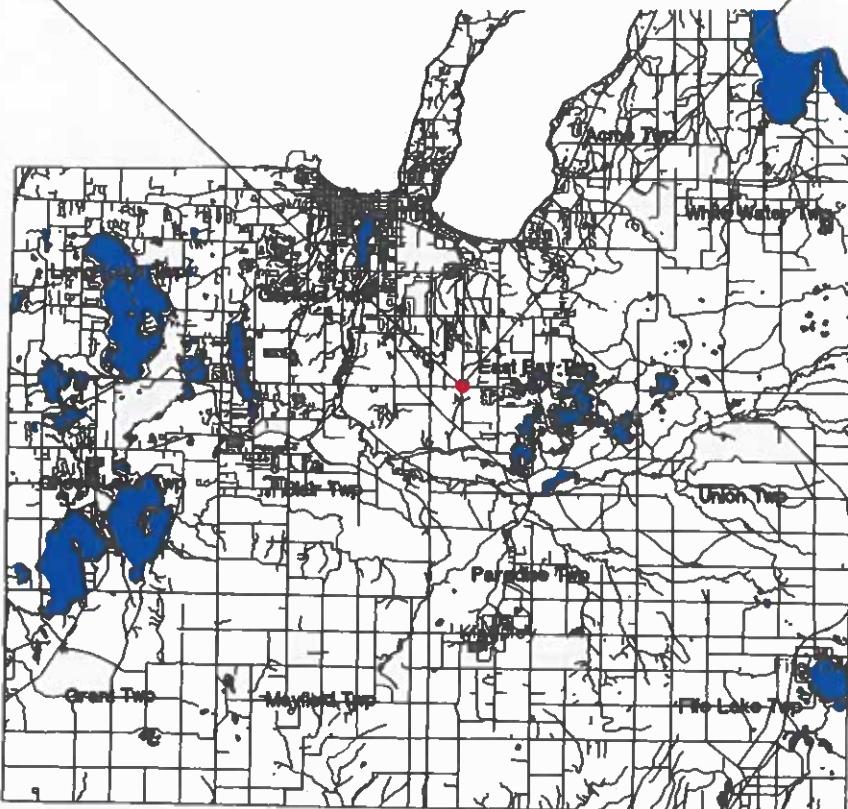


LOG INDEX.

- 1 - COVER
- 2 - 3 PROJECT LOG
- 3 - # SPECIAL PROVISIONS

THE IMPROVEMENTS COVERED BY THESE PLANS
 SHALL BE DONE IN ACCORDANCE WITH THE
 MICHIGAN DEPARTMENT OF TRANSPORTATION
 STANDARD SPECIFICATIONS FOR CONSTRUCTION
 THE MICHIGAN MANUAL OF UNIFORM TRAFFIC
 CONTROL DEVICES

CONTRACT FOR FULL REPLACEMENTS OF EACH
 ADVANCED WARNING BEACON FOR THE THREE
 MILE RD AND POTTER RD INTERSECTION



PLANS PREPARED UNDER THE
 SUPERVISION OF THE STATE OF MICHIGAN

DEREK WEICHLIN
 ENGINEER
 No. 6201069344

LICENSED PROFESSIONAL ENGINEER

Derek Weichlein 1/2/24

DEREK WEICHLIN, P.E.
 GRAND TRAVERSE COUNTY ROAD
 COMMISSION
 1881 LAFRANIER RD
 TRAVERSE CITY, MI 49686

APPROVED FOR BIDDING

Derek Weichlein 1/2/24

DEREK WEICHLIN, P.E.
 GRAND TRAVERSE COUNTY ROAD
 COMMISSION
 1881 LAFRANIER RD
 TRAVERSE CITY, MI 49686

DATE



GRAND TRAVERSE
 COUNTY
 ROAD
 COMMISSION
 1881 LaFRANIER ROAD
 TRAVERSE CITY, MI 49686-8911
 231.922.4848 PHONE
 231.929.1836 FAX

COVER SHEET
PROJECT LOG
ADVANCED WARNING BEACON MODERNIZATION PROJECT

REVISIONS	DATE: 11-28-2023
	GTCCR NO. 24S203
	DRAWN HRA
	CHECKED

SHEET 1 OF 5

PROJECT LOG

2024 GRAND TRAVERSE COUNTY TRAFFIC SIGNALS

HEAVY MAINTENANCE ADVANCED WARNING BEACON MODERNIZATION

Project Locations:

Location 1:

Advanced Warning Beacon F00013 Three Mile Rd and Potter Rd located in East Bay Township, Grand Traverse County.

Description of Work:

Location 1:

The F00013 Three Mile Rd and Potter Rd consists of replacing all four (4) W3-1 Stop Ahead signs, four (4) R1-1 Stop signs, and two (2) W2-1 Intersection ahead signs. Each sign is on a wooden break away post set into a concrete base. Also replacing the flashing solar beacons on top of the wooden posts four (4) red LED and six (6) amber LED. Red flashing beacons to be placed on the four R1-1 Stop sign posts.

Items of Work:

Miscellaneous Project Quantities

The following quantities are for use throughout the projects:

Location 1: F00013 Three Mile Rd and Potter Rd

Pay Item	Description	Job Qty	Units
1100001	Mobilization, Max 5%	1.00	LSUM
8127051	Temporary Traffic Control	1.00	LSUM
8200072	Flsh Beacon, Solar, Rem	10.00	Ea
8100403	Sign, Type III, Rem	10.00	Ea
8100280	Fdn, Wood Support, Rem	10.00	Ea
8200071	Flsh Beacon, Solar	10.00	Ea
8100404	Sign, Type IIIA	90.00	Sft
8100382	Post, Wood, 6 inch by 8 inch	160.00	Ft

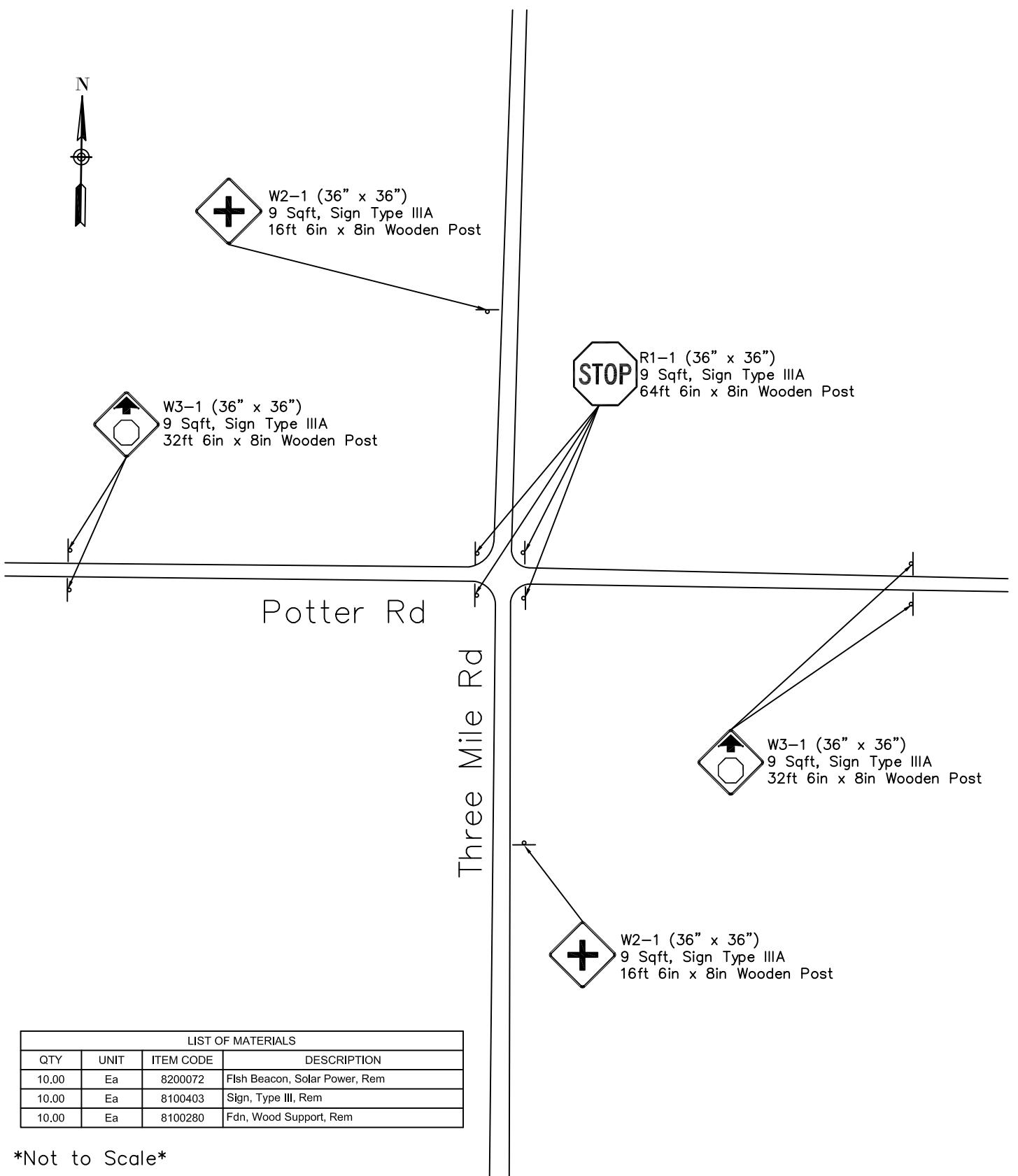
Maintaining Traffic

Continuous traffic flow is to be maintained during work. Proposed traffic signal equipment shall be put into operation at the time of removal of existing traffic signal facilities. Contractor shall notify GTCRC if unable to always maintain traffic signal in an operable condition. Proper signage and advanced notification of traffic control shall comply with Michigan Manual on Uniform Traffic Control Devices (MMUTCD) standards. GTCRC to be notified of lane or shoulder closures prior to closures for public notifications.

General Log Notes:

Underground Utilities/MISS DIG

For protection of underground utilities and in conformance with Public Act 174 of 2013, the contractor shall dial 1-800-482-7171 or 811 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the contractor of the responsibility of notifying utility owners who may not be a part of the "MISS DIG" alert system.



LIST OF MATERIALS			
QTY	UNIT	ITEM CODE	DESCRIPTION
10.00	Ea	8200072	Fish Beacon, Solar Power, Rem
10.00	Ea	8100403	Sign, Type III, Rem
10.00	Ea	8100280	Fdn, Wood Support, Rem

Not to Scale



GRAND TRAVERSE COUNTY
ROAD COMMISSION
1881 LeFRANIER ROAD
TRAVERSE CITY, MI 49686-8911

231.922.4848 PHONE
231.929.1836 FAX

STANDARD PLAN

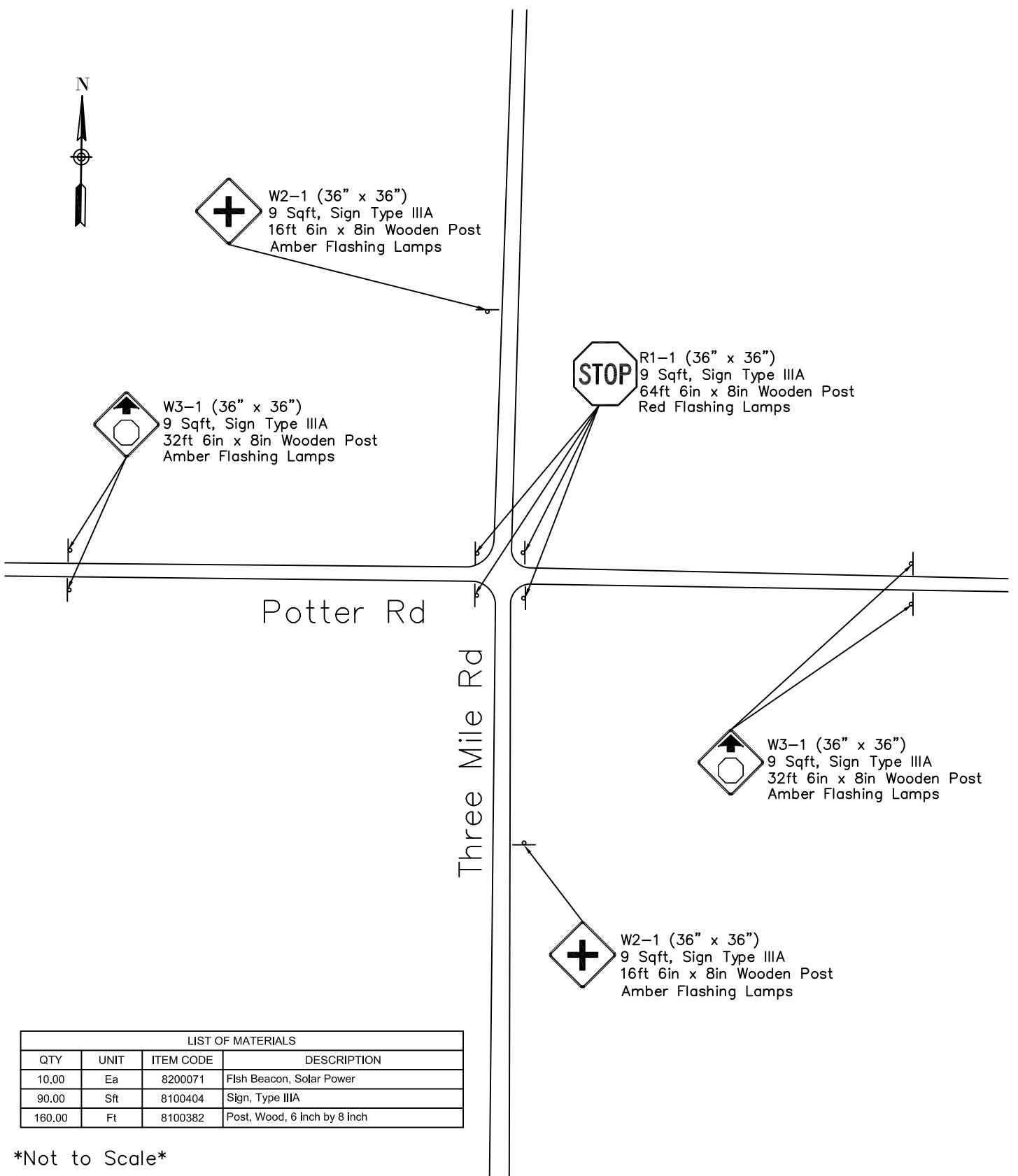
F00013 Three Mile Rd and Potter Rd
Advanced Warning Beacon Removal Plan

REVISIONS

DATE: 12-06-2023
GTCRC NO. 24S203
DRAWN HRA.
CHECKED

Page 67 of 98

SHEET 1 OF 1



LIST OF MATERIALS			
QTY	UNIT	ITEM CODE	DESCRIPTION
10.00	Ea	8200071	Fish Beacon, Solar Power
90.00	Sft	8100404	Sign, Type IIIA
160.00	Ft	8100382	Post, Wood, 6 inch by 8 inch

Not to Scale



GRAND TRAVERSE COUNTY
ROAD COMMISSION
1881 LaFRANIER ROAD
TRAVERSE CITY, MI 49686-8911

231.922.4848 PHONE
231.929.1836 FAX

STANDARD PLAN

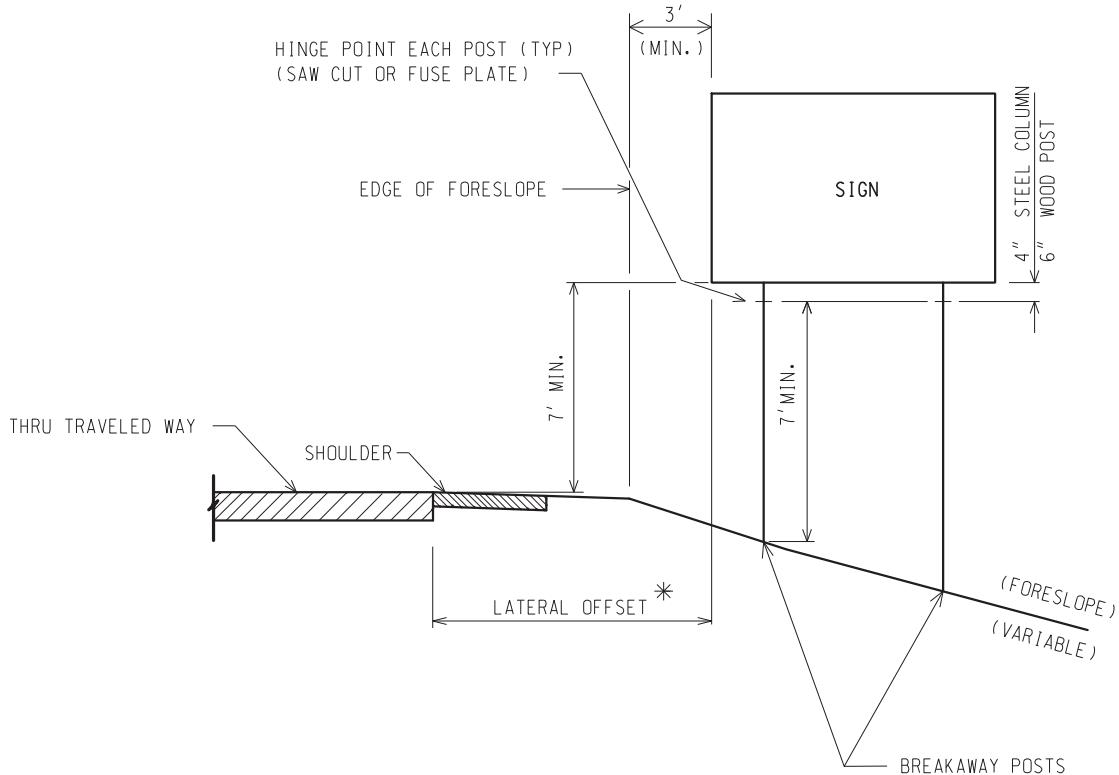
F00013 Three Mile Rd and Potter Rd
Advanced Warning Beacon Proposed Plan

REVISIONS

DATE: 12-06-2023
GTCRC NO. 24S203
DRAWN HRA.
CHECKED

PAGE 68 OF 98

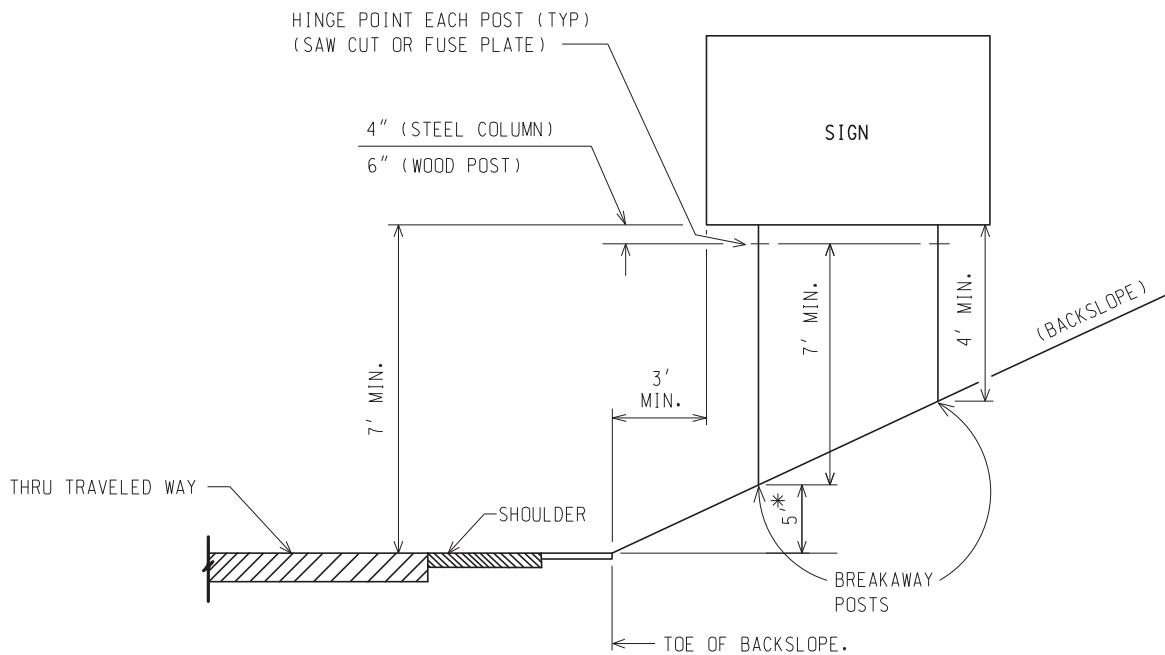
SHEET 1 OF 1



* THE LATERAL OFFSET SHALL BE 30' (MIN.), FOR MAINTENANCE PURPOSES.

SIGN PLACEMENT-ELEVATION VIEW: FREEWAY (FORESCOPE)

MDOT <small>Michigan Department of Transportation</small>	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		
	APPROVED BY: <u>Kimberly Avery</u> DIRECTOR, BUREAU OF FIELD SERVICES	ROADSIDE SIGN LOCATIONS & SUPPORT SPACING		
	Bradley C. Wieferich Bradley C. Wieferich May 9 2018 7:43 AM			
	APPROVED BY: <u>cosign</u> DIRECTOR, BUREAU OF DEVELOPMENT	05/24/18 F.H.W.A. APPROVAL	02/13/17 PLAN DATE	SIGN-120-E SHEET 1 OF 9
	Page 69 of 90			



* IN DEPRESSED SECTIONS WITH 3:1 OR STEEPER BACKSLOPE, IF THE FRONT (TRAFFIC SIDE) POST CANNOT BE LOCATED AT 7' ABOVE SHOULDER ELEVATION, THEN A 3' MINIMUM OFFSET FROM THE TOE OF SLOPE SHALL BE MAINTAINED AND THE SIGN PROTECTED WITH AN APPROVED BARRIER. SEE GENERAL NOTE 5.

SIGN PLACEMENT-ELEVATION VIEW: FREEWAY (BACKSLOPE)

NOT TO SCALE

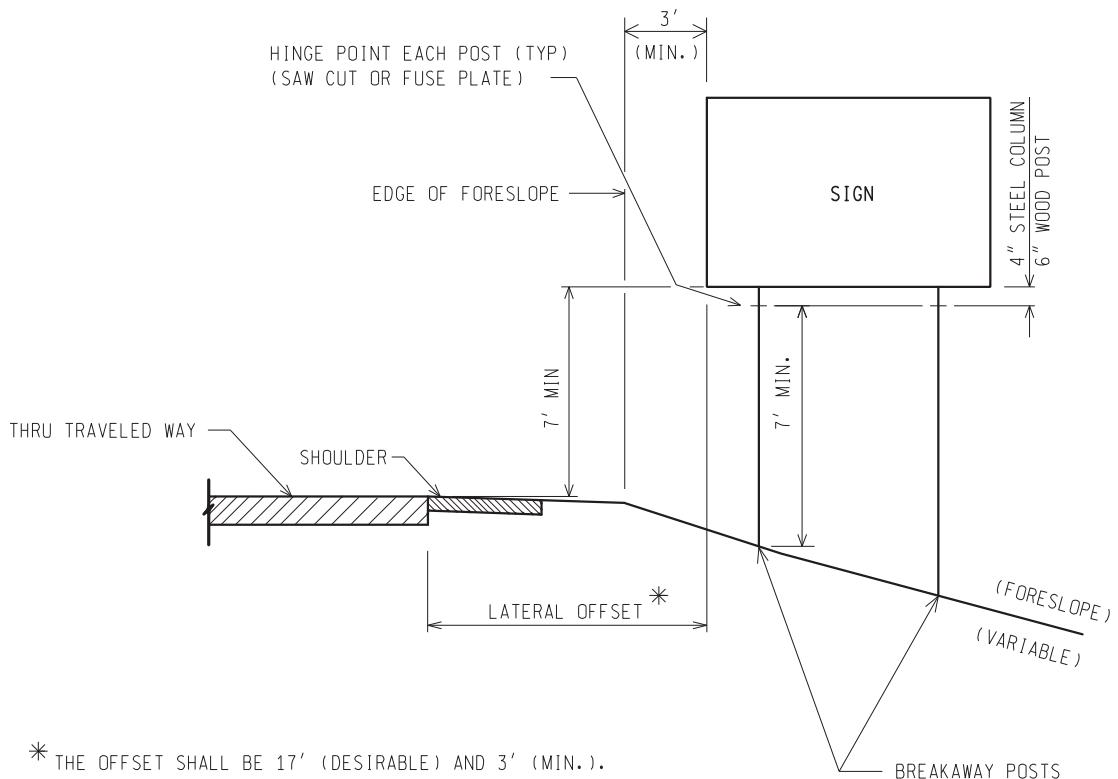
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/24/18
F.H.W.A. APPROVAL

02/13/17
PLAN DATE

SIGN-120-E

SHEET
2 OF 9



SIGN PLACEMENT-ELEVATION VIEW: NON-FREEWAY (FORESLOPE)

NOT TO SCALE

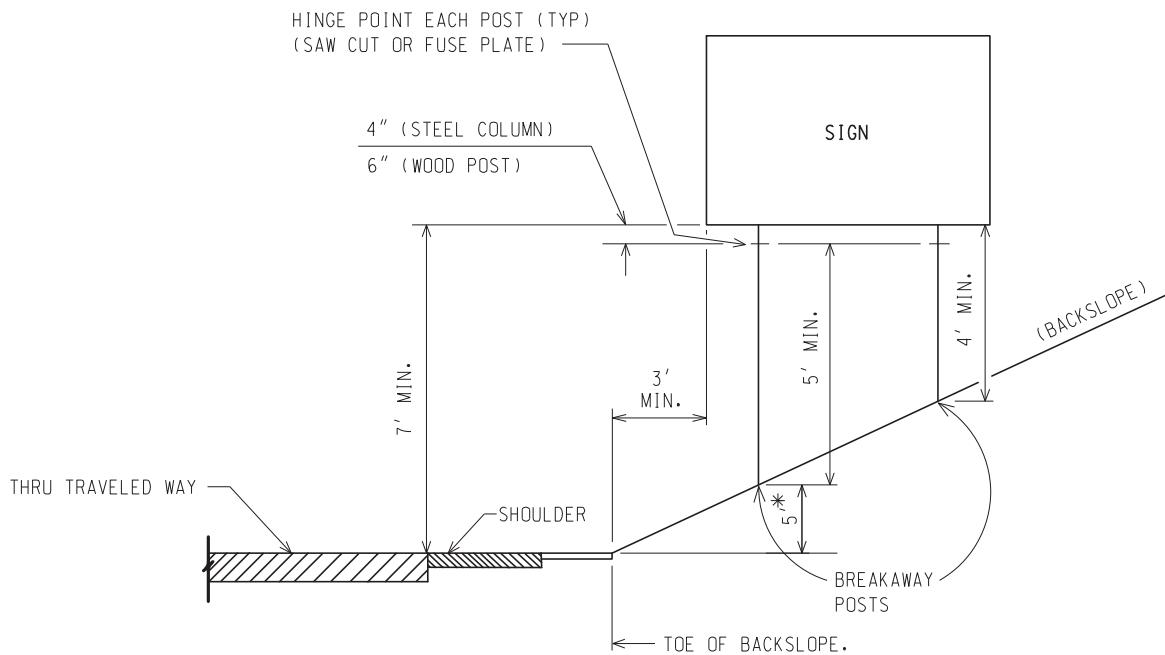
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/24/18
F.H.W.A. APPROVAL

02/13/17
PLAN DATE

SIGN-120-E

SHEET
3 OF 9



* IN DEPRESSED SECTIONS WITH 3:1 OR STEEPER BACKSLOPES, IF THE FRONT (TRAFFIC SIDE) POST CANNOT BE LOCATED AT 5' ABOVE SHOULDER ELEVATION, THEN A 3' MINIMUM OFFSET FROM THE TOE OF SLOPE SHALL BE MAINTAINED AND THE SIGN PROTECTED WITH AN APPROVED BARRIER. SEE GENERAL NOTE 5.

SIGN PLACEMENT- ELEVATION VIEW: NON-FREEWAY (BACKSLOPE)

NOT TO SCALE

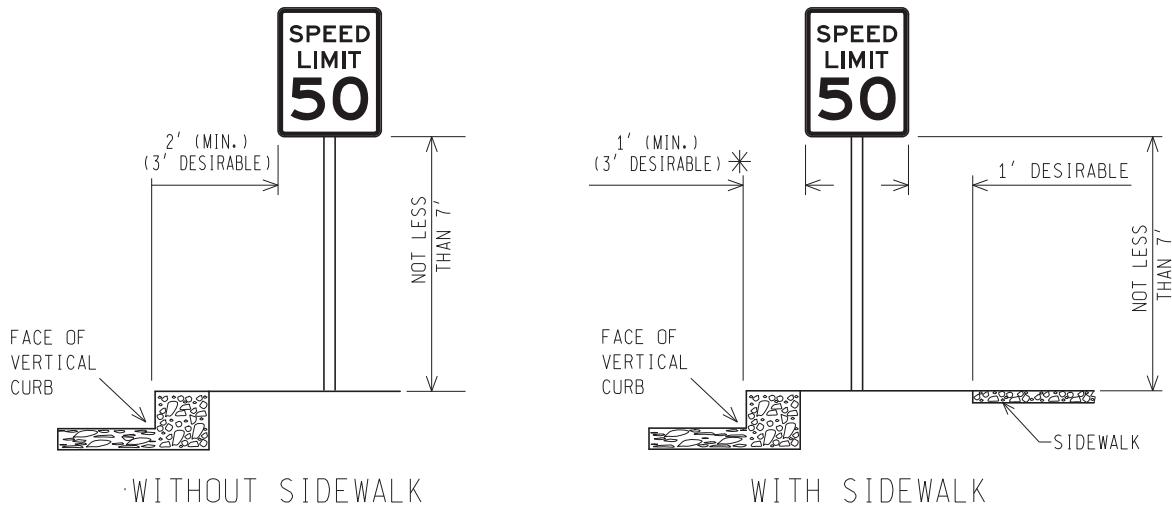
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/24/18
F.H.W.A. APPROVAL

02/13/17
PLAN DATE

SIGN-120-E

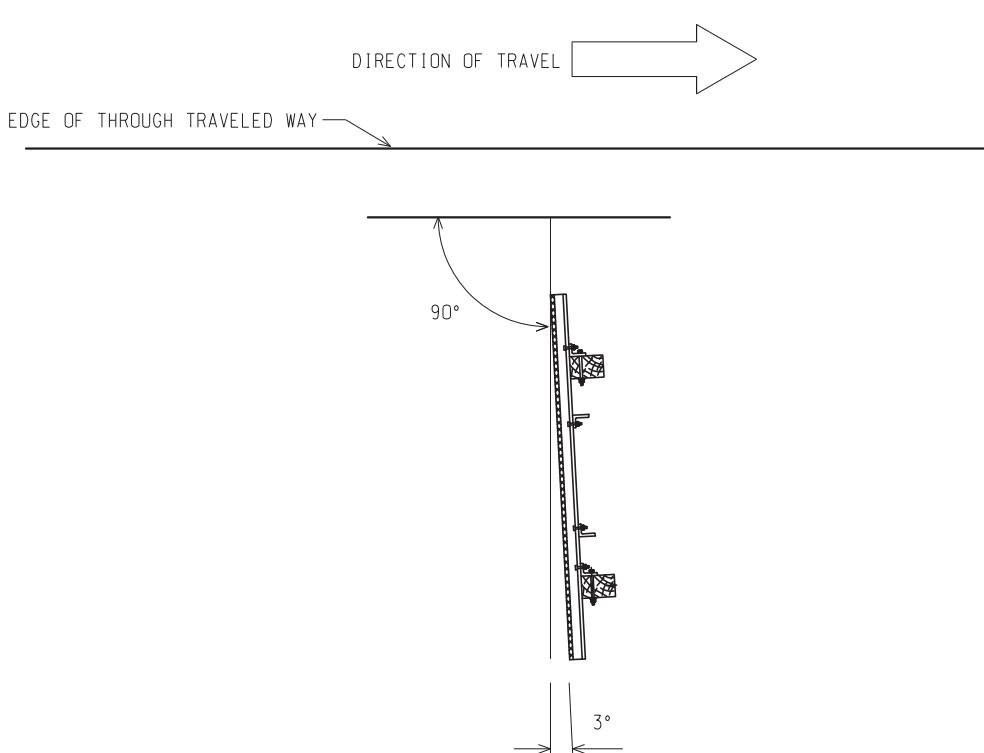
SHEET
4 OF 9



*WHEN DIRECTED BY THE ENGINEER, 1' IS PERMITTED IN AREAS WHERE SIDEWALK OR UTILITY POLES ARE CLOSE TO CURB PER MMUTCD.

NOTE: SLOPING CURBS SHOULD BE TREATED AS FLAT.

SIGN PLACEMENT ALONG VERTICAL CURB ELEVATION VIEW



SIGN ORIENTATION

NOT TO SCALE

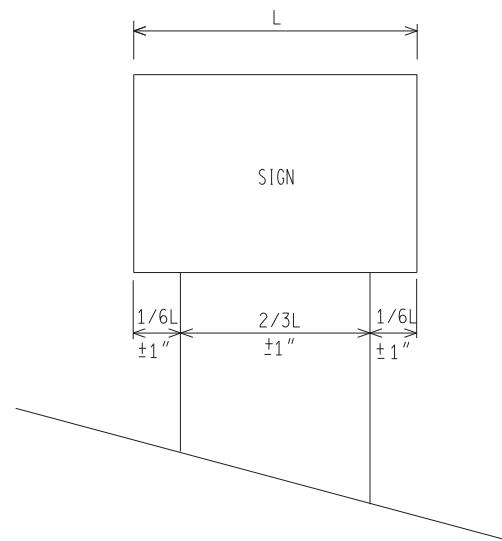
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/24/18
F.H.W.A. APPROVAL

02/13/17
PLAN DATE

SIGN-120-E

SHEET
5 OF 9



2 POST SIGN SUPPORT SPACING

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/24/18
F.H.W.A. APPROVAL

02/13/17
PLAN DATE

SIGN-120-E

SHEET
6 OF 9

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

SIGN BOTTOM HEIGHTS

CONVENTIONAL ROADS

7'- RURAL AREAS

7'- URBAN AREAS

7'- ALL CONDITIONS WHERE SIDEWALKS EXISTS

RAMPS/CROSSROADS

7'- RAMP AND CROSSROAD SIGNING
(WITHOUT VERTICAL CURB)

7'- RAMP AND CROSSROAD SIGNING
(WITH VERTICAL CURB)

7'- ALL CONDITIONS WHERE SIDEWALK EXISTS

4'- DO NOT ENTER AND WRONG WAY SIGNS
(FOR FREEWAY RAMPS)

FREeways/EXPRESSways

7'- ROUTE MARKERS, WARNING AND
REGULATORY SIGNS

7'- ALL OTHER FREEWAY/EXPRESSWAY SIGNS

NOTES:

1. PARKING SIGNS MOUNTED BELOW A PARENT SIGN MAY HAVE A BOTTOM HEIGHT 1' OR 1.5' (DEPENDING ON SIGN SIZE) LESS THAN BOTTOM HEIGHTS LISTED FOR PARENT SIGNS.
2. BOTTOM HEIGHT OF ALL SIGNS ARE 7'
EXCEPT THE FOLLOWING:
OBJECT MARKERS- 4'
MILE POST MARKERS- 4'
WRONG WAY/DO NOT ENTER (FRWY RAMPS)- 4'
3. CONVENTIONAL ROAD-A STREET OR HIGHWAY
OTHER THAN A FREEWAY OR EXPRESSWAY.
4. EXPRESSWAY-A DIVIDED HIGHWAY WITH
PARTIAL CONTROL OF ACCESS.
5. FREEWAY-A DIVIDED HIGHWAY WITH FULL
CONTROL OF ACCESS.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/24/18
F.H.W.A. APPROVAL

02/13/17
PLAN DATE

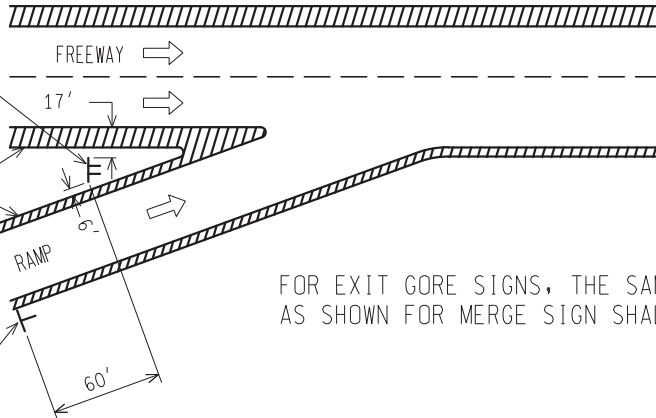
SIGN-120-E

SHEET
7 OF 9

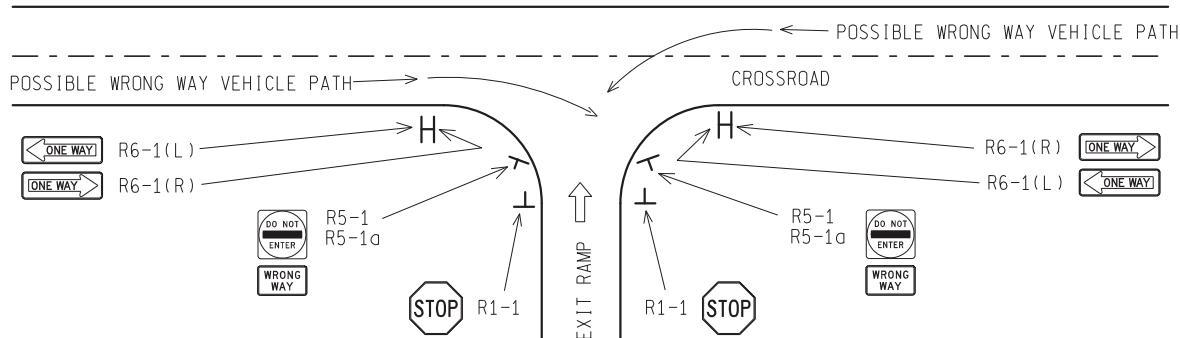
NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



W4-1 AS CALLED FOR
ON PLANS

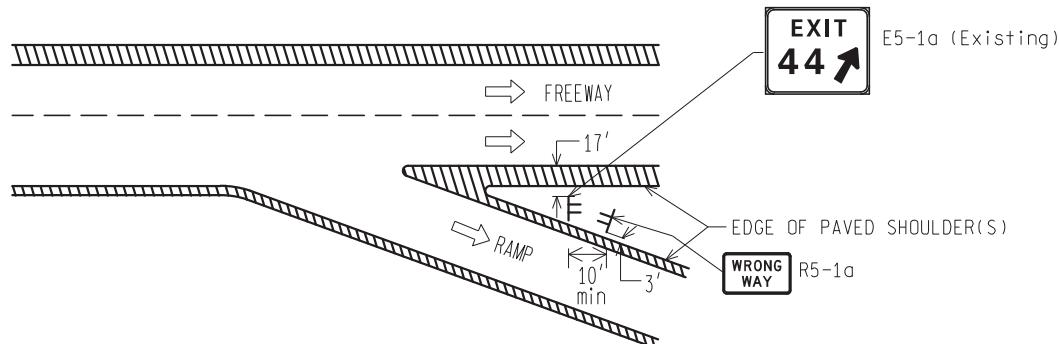


PLACEMENT OF MERGE & NO LEFT TURN SIGNS AT ENTRANCE RAMP



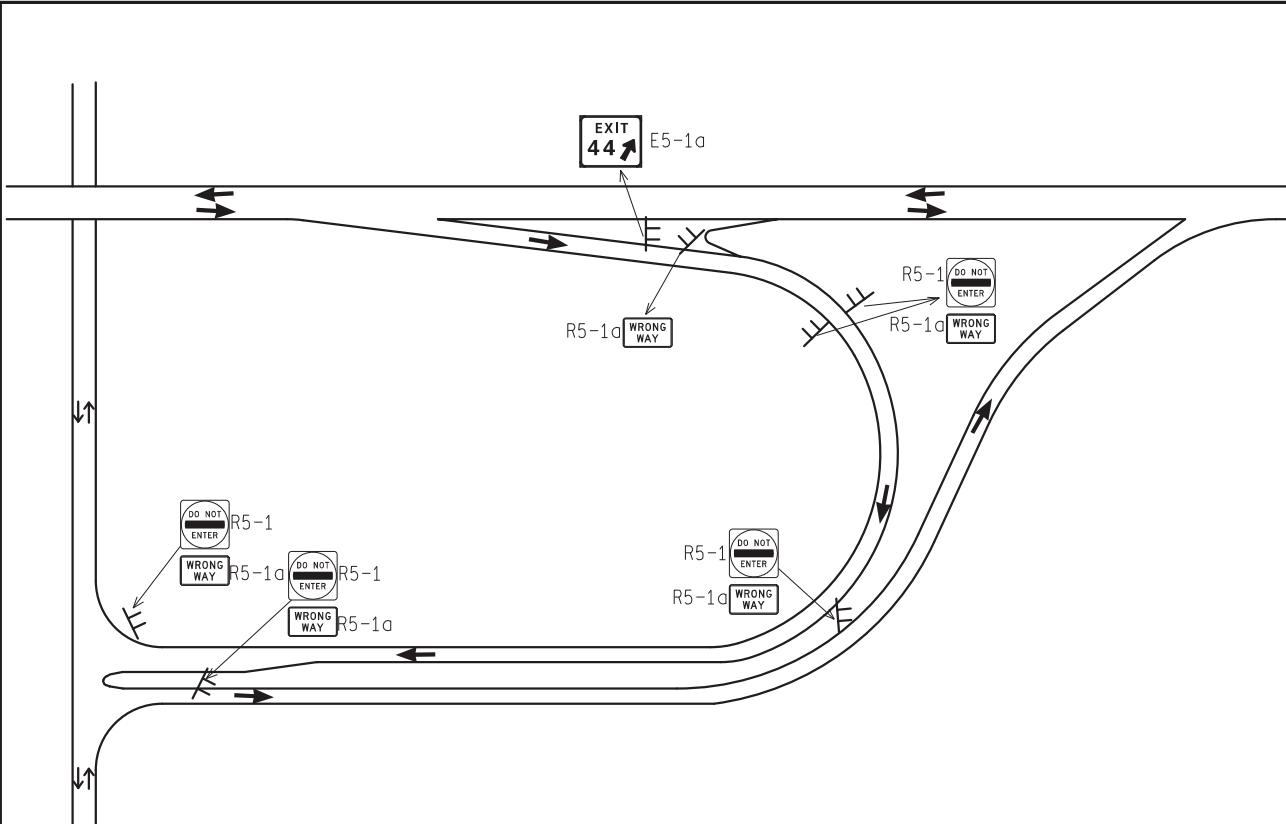
TYPICAL LOCATION OF R5-1 & R5-1a ON EXIT RAMPS. THESE SIGNS SHOULD BE TURNED APPROXIMATELY 20 DEGREES FROM THE CROSSROAD TO FACE THE PATHS OF POSSIBLE WRONG WAY VEHICLE MOVEMENTS.

PLACEMENT OF SIGNS AT EXIT RAMP TERMINALS



PLACEMENT OF EXIT GORE & DO NOT ENTER SIGNS AT EXIT RAMP

NOT TO SCALE



PLACEMENT OF EXIT GORE, DO NOT ENTER & WRONG WAY SIGNS AT EXIT RAMP

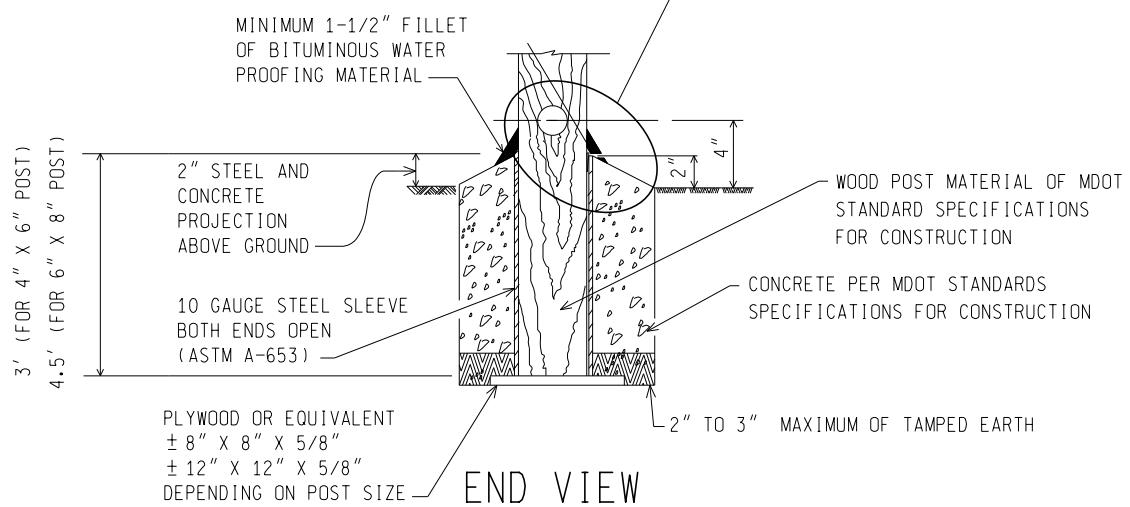
GENERAL NOTES:

1. LATERAL OFFSET CLEARANCE OF ALL SIGNS SHALL BE AS INDICATED UNLESS OTHERWISE SHOWN ON CONTRACT SIGN PLAN SHEETS OR IN THE PROPOSAL.
2. THE TERM "SIGN" AS USED ON THIS PLAN MEANS A SINGLE PANEL OR GROUP OF PANELS COMBINED TO FORM ONE INSTALLATION.
3. BOTTOM HEIGHT (BH) SHALL BE AS INDICATED ON SHEET 7 UNLESS OTHERWISE SHOWN ON THE ELEVATION SIGN PLAN SHEET OR IN THE PROPOSAL. BOTTOM HEIGHT IS THE DIFFERENCE IN ELEVATION OF THE NEAREST EDGE OF THE TRAVELED LANE AND BOTTOM OF THE SIGN.
4. SIGN LOCATIONS SHALL BE AS SHOWN UNLESS OTHERWISE SPECIFIED ON CONTRACT SIGN PLAN SHEETS OR IN THE PROPOSAL.
5. WHEN SIGNS ARE TO BE INSTALLED BEHIND CONCRETE BARRIER OR GUARDRAIL, THE NEAR EDGE OF SIGN SHOULD BE SET BACK A MINIMUM OF 3' MEASURED FROM THE BACK OF BARRIER OR GUARDRAIL POSTS. BREAKWAY SIGN POSTS ARE NOT REQUIRED AT THESE LOCATIONS.
6. FOR PLACEMENT OF STOP SIGNS AT CROSSROADS SEE MMUTCD.
7. WRONG WAY AND DO NOT ENTER SIGN SUPPORTS FOR FREEWAY RAMPS SHALL HAVE RED REFLECTIVE STRIP(S) INSTALLED ON THE SIGN SUPPORTS.

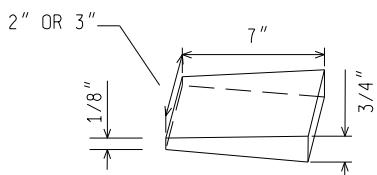
NOT TO SCALE

4" X 6" (NOMINAL POST) 1-1/2" DIA. 2 HOLES
6" X 8" (NOMINAL POST) 3-1/2" DIA. 2 HOLES

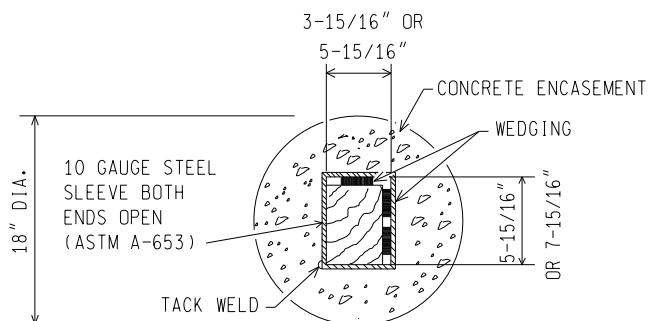
TAPERED HARD WOOD WEDGES (HARDWOOD WEDGE TO BE OAK, MAPLE OR OTHER APPROVED DENSE HARDWOODS) TO HOLD POST IN A STABLE POSITION AFTER CONCRETE HAS SET. USE 2" OR 3" WEDGES TO COVER APPROXIMATELY 75% OF POST WIDTH ON TWO ADJACENT SIDES.



NOTE: INSIDE DIMENSIONS OF SLEEVE MAY BE A MAXIMUM OF 1/8" GREATER THAN SHOWN.



WEDGE



WOOD POST FOUNDATION DETAILS



PREPARED
BY
TSMO DIVISION

DRAWN BY: DHD

CHECKED BY: AJU

DEPARTMENT DIRECTOR
Paul C. Ajegba

APPROVED BY: Randy V. Pritchard
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: Mark A. Van Pelt
DIRECTOR, BUREAU OF DEVELOPMENT

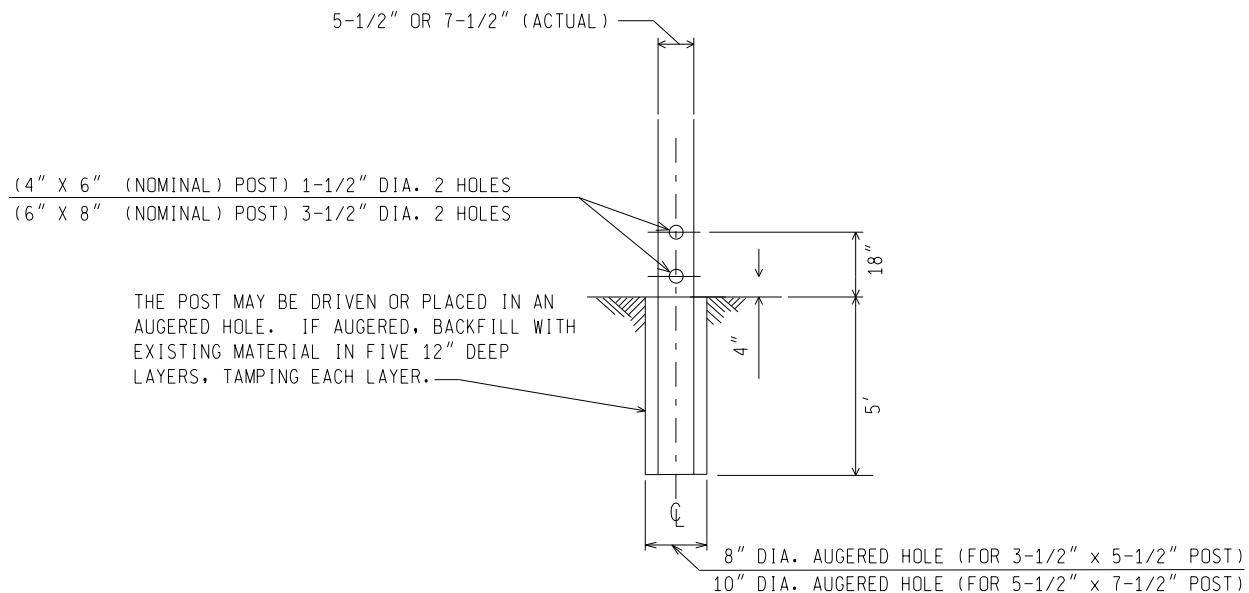
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

WOOD POSTS

05/01/15
F.H.W.A. APPROVAL

08/13/14
PLAN DATE

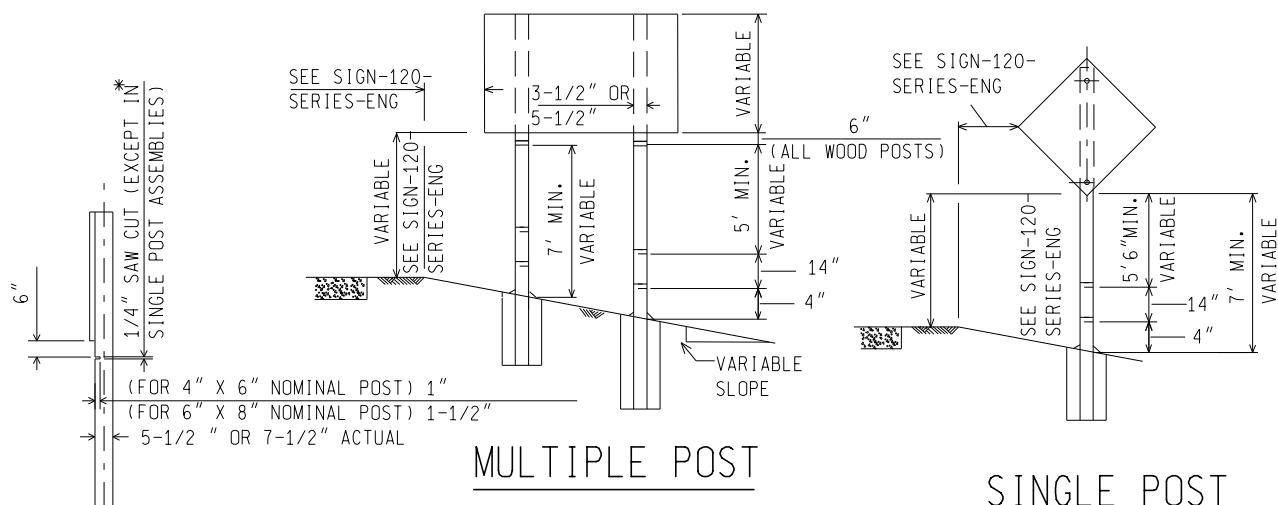
SIGN-210-B
SHEET
1 OF 5



END VIEW

WOOD POST DIRECT EMBEDMENT DETAIL
SINGLE POST INSTALLATIONS ONLY

NOTE: DIRECT EMBEDMENT ONLY AT LOCATIONS IDENTIFIED IN PLANS OR PROPOSAL.

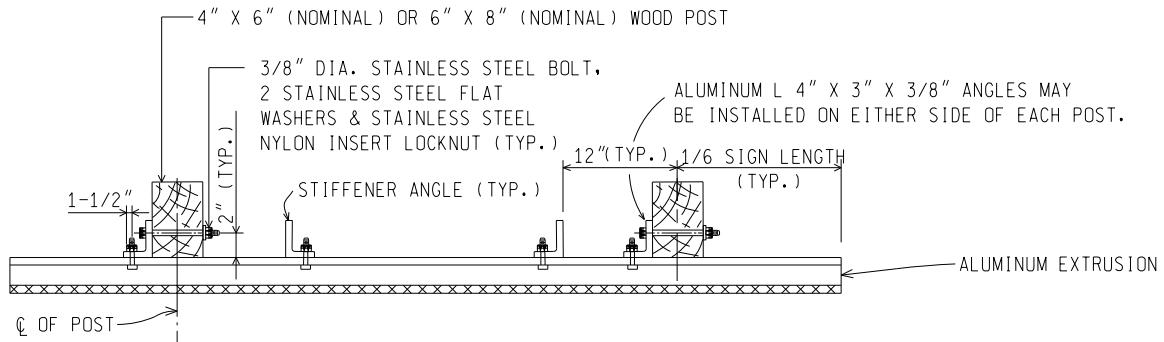


SAW CUT DETAIL

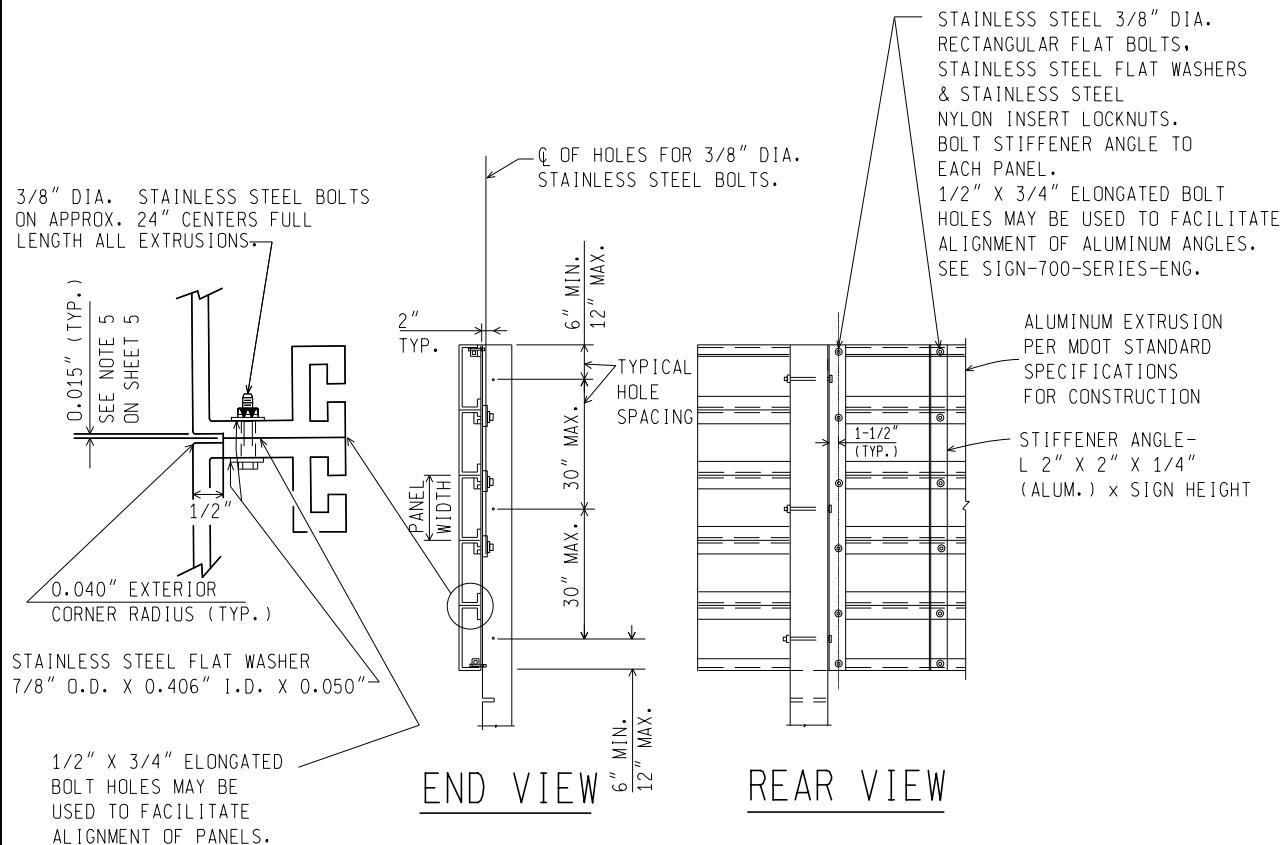
BREAKAWAY HOLES/SAWCUT RELATIONSHIP

*SAW CUT SHALL BE PLACED ON APPROACH TRAFFIC SIDE OF POST.

NOT TO SCALE



TOP VIEW
SINGLE TYPE I SIGN



TYPE I SINGLE SIGN - ERECTION DETAILS

NOT TO SCALE

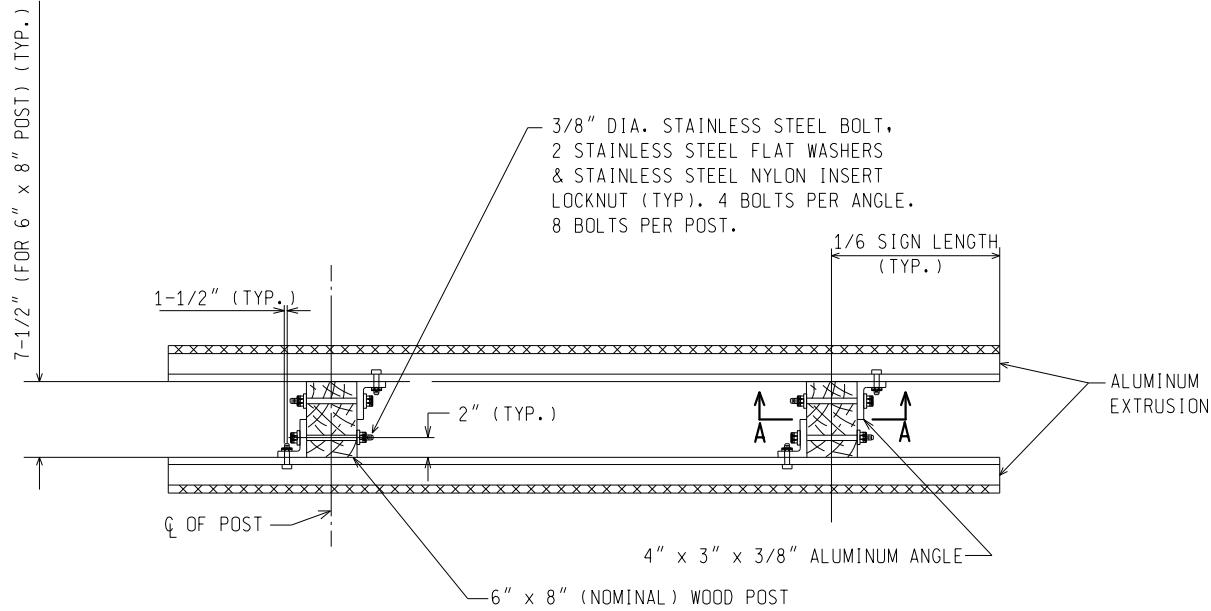
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/01/15
F.H.W.A. APPROVAL

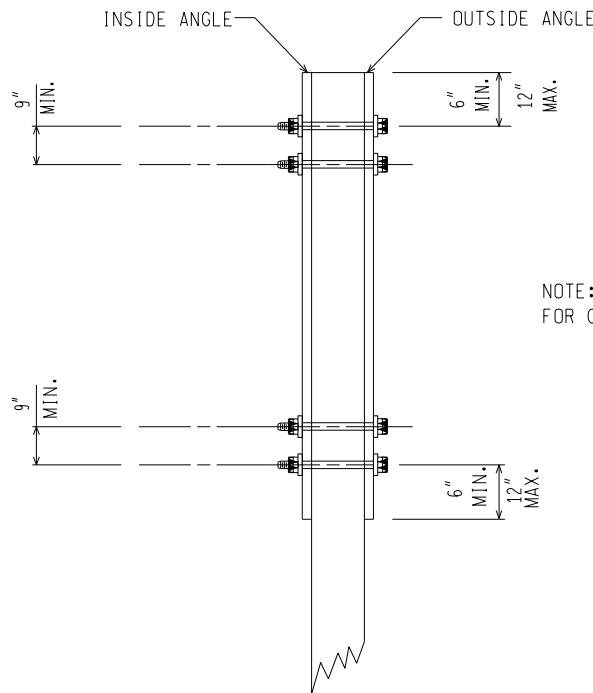
08/13/14
PLAN DATE

SIGN-210-B

SHEET
3 OF 5



TOP VIEW
BACK-TO-BACK TYPE I SIGNS



SECTION A-A

TYPE I BACK-TO-BACK SIGNS-ERCTION DETAILS

NOT TO SCALE

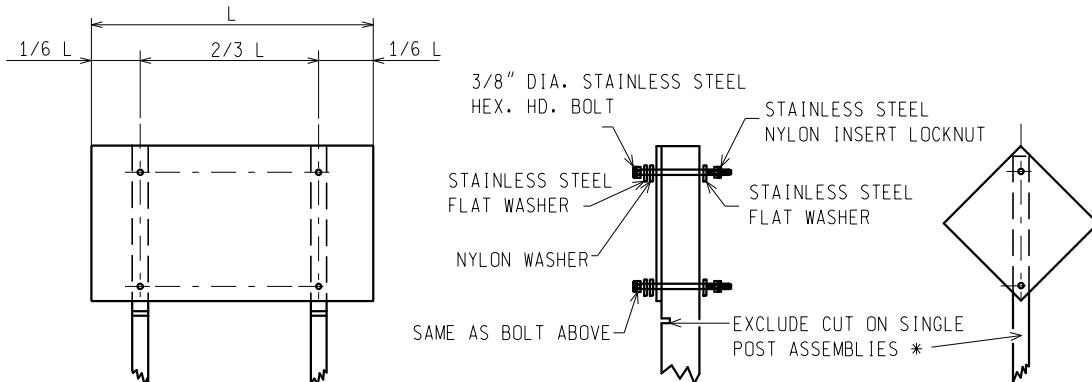
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

05/01/15
F.H.W.A. APPROVAL

08/13/14
PLAN DATE

SIGN-210-B

SHEET
4 OF 5



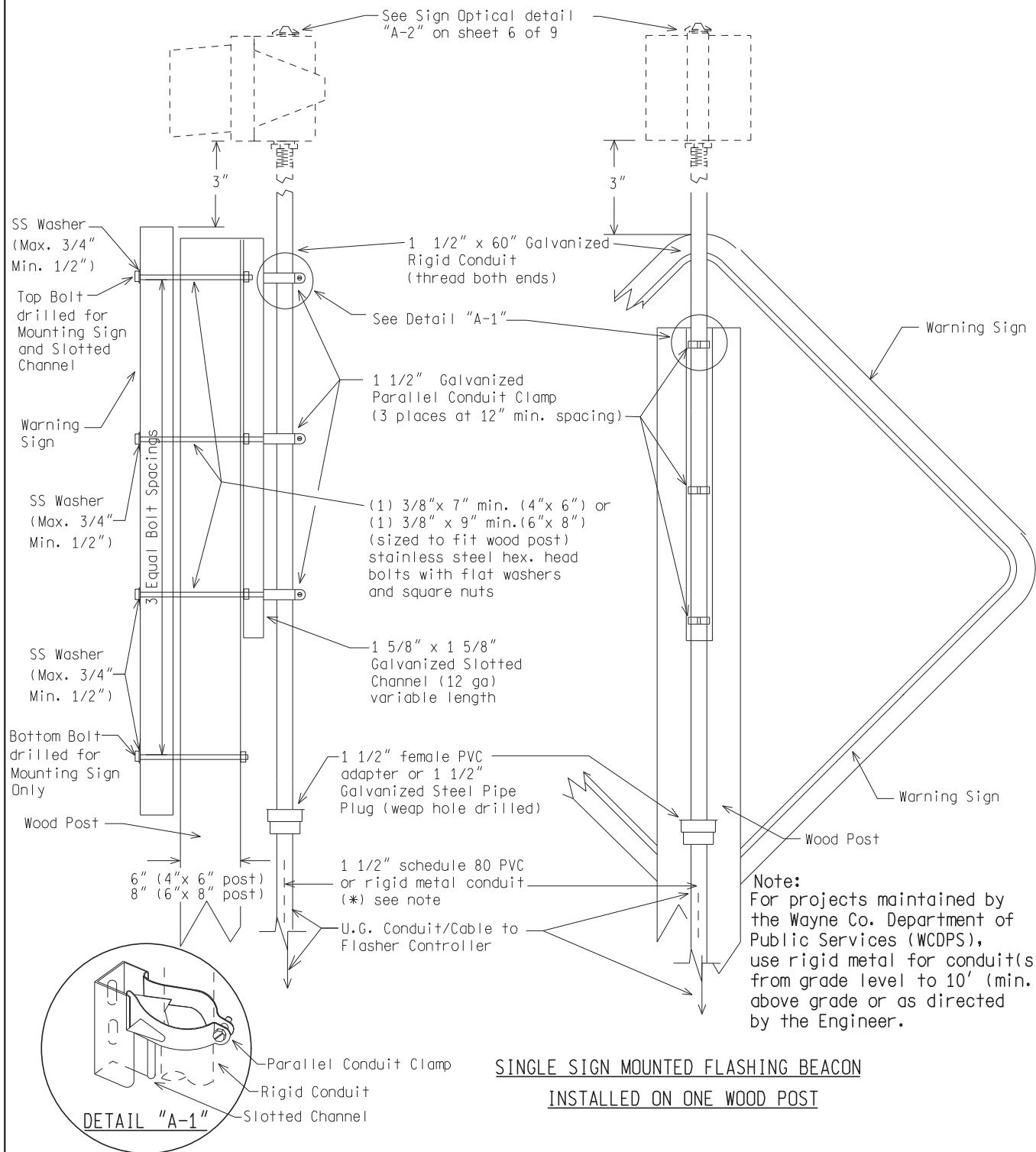
CONNECTION DETAIL

TYPES II & III SIGNS – ERECTION DETAILS

NOTES:

1. THE DRILLED BREAKAWAY HOLES ARE TO BE CAREFULLY CENTERED ON THE POSTS.
2. ALL CONCRETE FOUNDATIONS SHALL BE FINISHED AS SHOWN AND ANY SURPLUS MATERIAL SHALL BE COMPLETELY REMOVED FROM RIGHT-OF-WAY. SIGNS SHALL NOT BE ERECTED ON WOOD POSTS FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT OF THE CONCRETE.
3. THE PAY ITEM "SIGN, TYPE __" INCLUDES ALL ATTACHING DEVICES AND HARDWARE.
4. WOOD POSTS MAY BE DIRECTLY EMBEDDED ONLY AT THOSE LOCATIONS IDENTIFIED IN THE PLANS OR PROPOSAL.
5. A 0.500" WIDE X 0.015" DEEP GROOVE SHALL RUN THE ENTIRE LENGTH AT TOP AND BOTTOM OF ALL EXTRUDED ALUMINUM PANELS TO ACCOMMODATE OVERLAP SHEETING.
6. ALL STAINLESS STEEL BOLTS, NUTS, AND WASHERS SHALL BE MDOT STANDARDS SPECIFICATIONS FOR CONSTRUCTION.
7. FIELD DRILL ALUMINUM ANGLES AND WOOD POSTS.
8. ALL SIGNS SHALL BE ATTACHED SO THAT THE BOLTS ARE CENTERED HORIZONTALLY ON THE POSTS.
9. THE SIGNS SHOULD BE PLACED ON THE SUPPORT FOLLOWING SHS 10 – SUPPORT HOLE PLACEMENT. FOR RECTANGULAR SIGNS THE SUPPORT SHOULD BE LONG ENOUGH TO REACH THE TOP OF THE SIGN. THE SUPPORT SHOULD NOT EXTEND BEYOND THE TOP EDGE OF THE SIGN. FOR SIGNS THAT ARE NOT RECTANGULAR THE SUPPORT SHOULD EXTEND THE TOP OF THE SIGN WITHOUT EXTENDING BEYOND THE TOP EDGE. THE SUPPORT SHOULD NOT BE VISIBLE WHEN FACING THE SIGN.

NOT TO SCALE

SIDE VIEWBACK VIEW

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn Rev. 02/16/17

PREPARED BY
TRAFFIC AND SAFETY

DRAWN BY:DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT
(SPECIAL DETAIL)

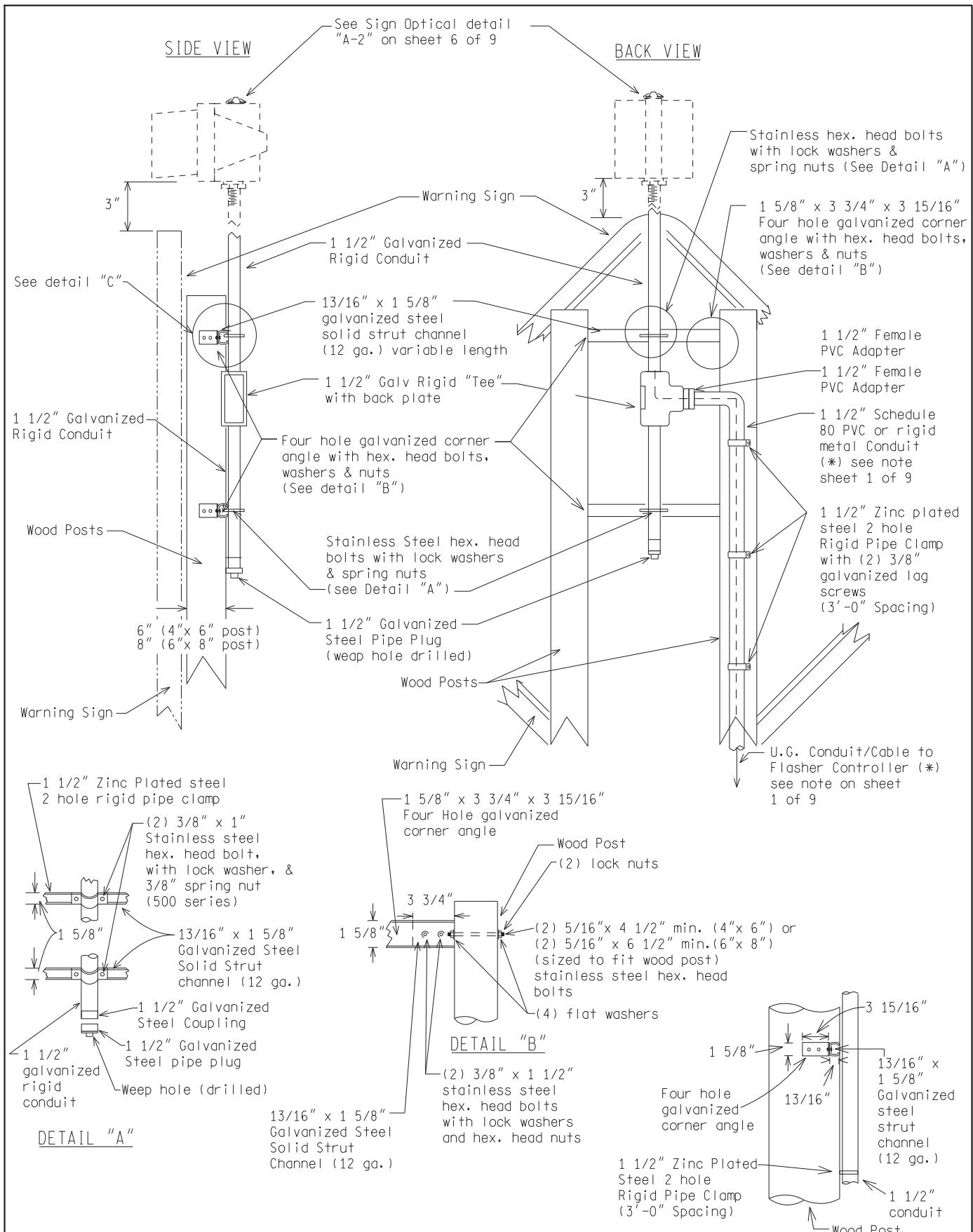
FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FORSIGN MOUNTED
BEACON

PLAN DATE

SIG-320-A

SHEET
1 of 9



SINGLE SIGN MOUNTED FLASHING BEACON

INSTALLED ON TWO WOOD POSTS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

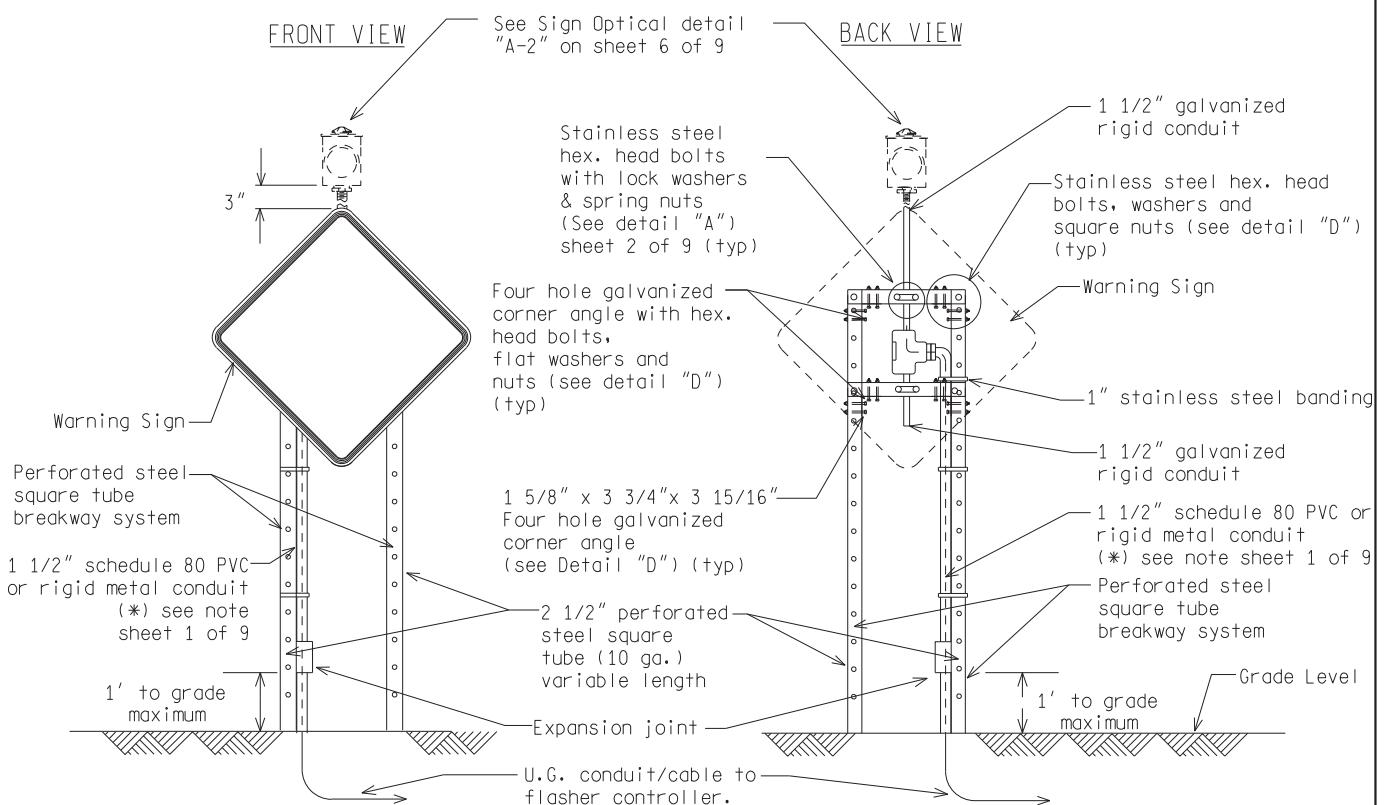
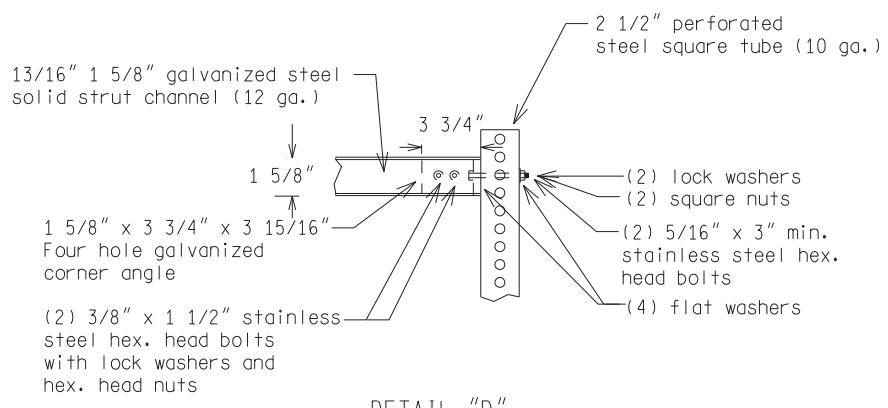
(SPECIAL DETAIL)
FHWA APPROVAL DATE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn Rev. 02/16/17

PLAN DATE

SIG-320-A

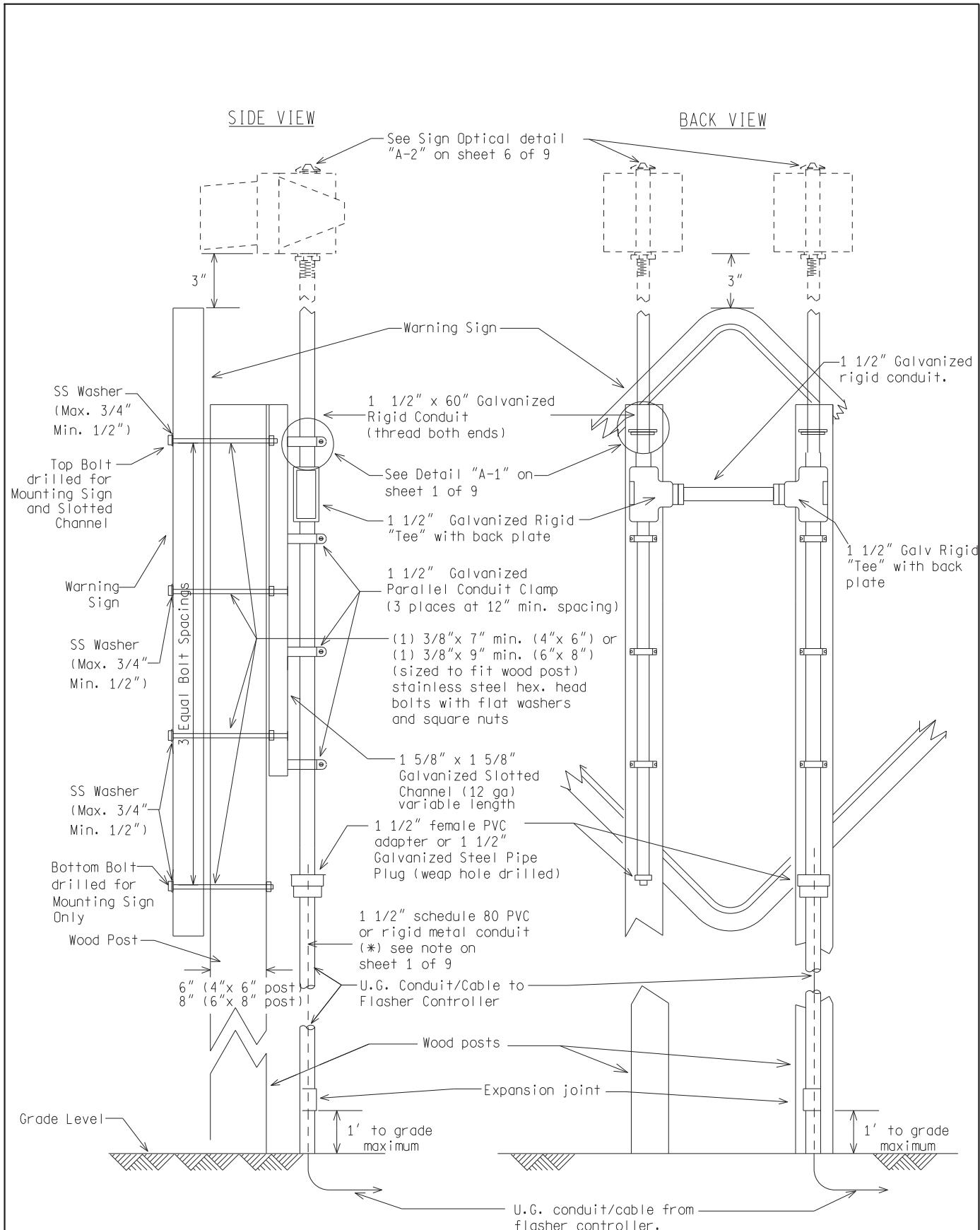
SHEET
2 of 9



SINGLE SIGN MOUNTED FLASHING BEACON
INSTALLED ON TWO STEEL POSTS
(PERFORATED STEEL SQUARE TUBE BREAKAWAY SYSTEM)

NOT TO SCALE

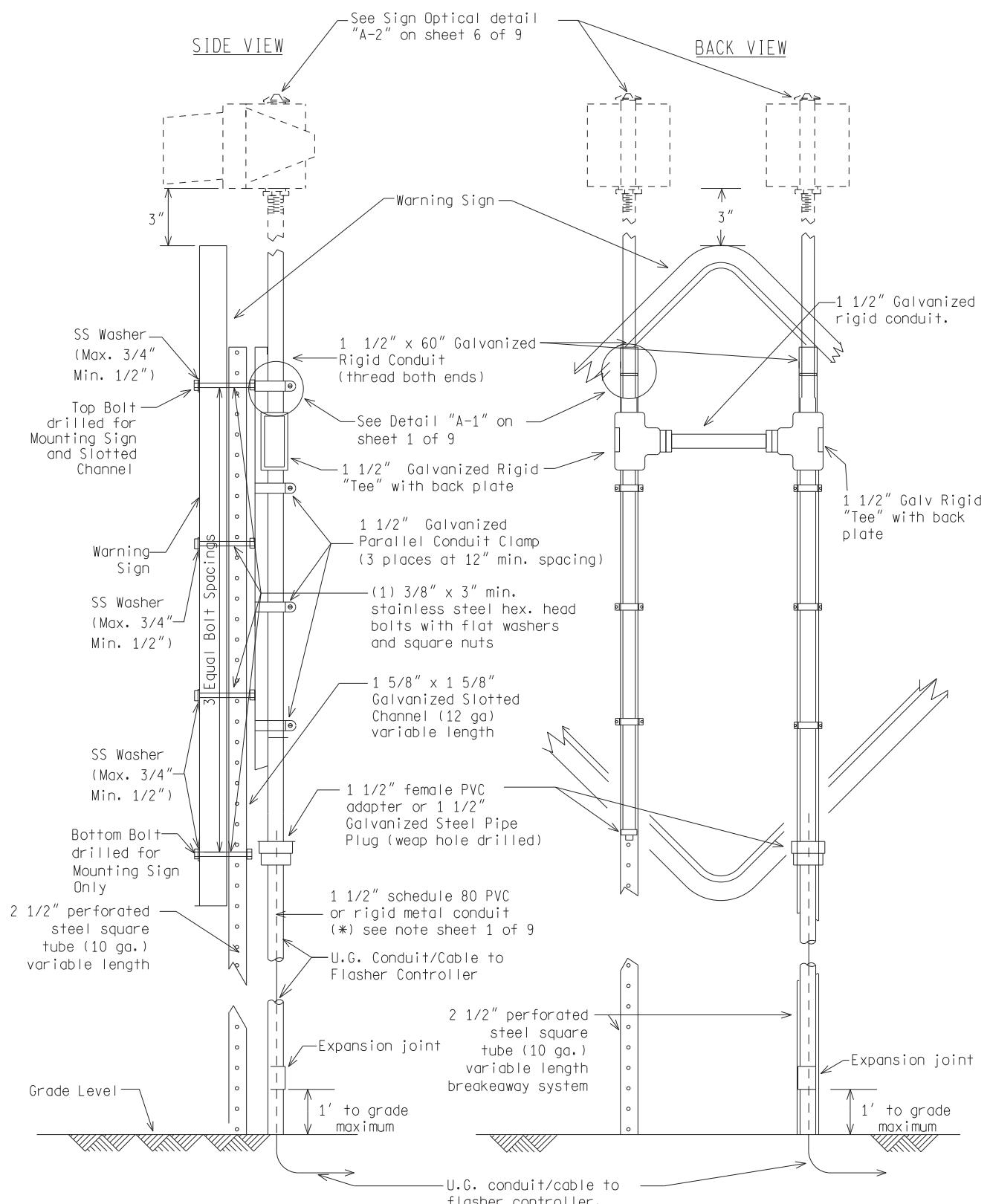
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-320-A	SHEET 3 of 9
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn	Rev. 02/16/17	PLAN DATE		



SIGN MOUNTED DUAL FLASHING BEACONS
INSTALLED ON TWO WOOD POSTS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-320-A	SHEET 4 of 9
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn	Rev. 02/16/17	PLAN DATE		



**SIGN MOUNTED DUAL FLASHING BEACONS
INSTALLED ON TWO STEEL POSTS
(PERFORATED STEEL SQUARE TUBE BREAKAWAY SYSTEM)**

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

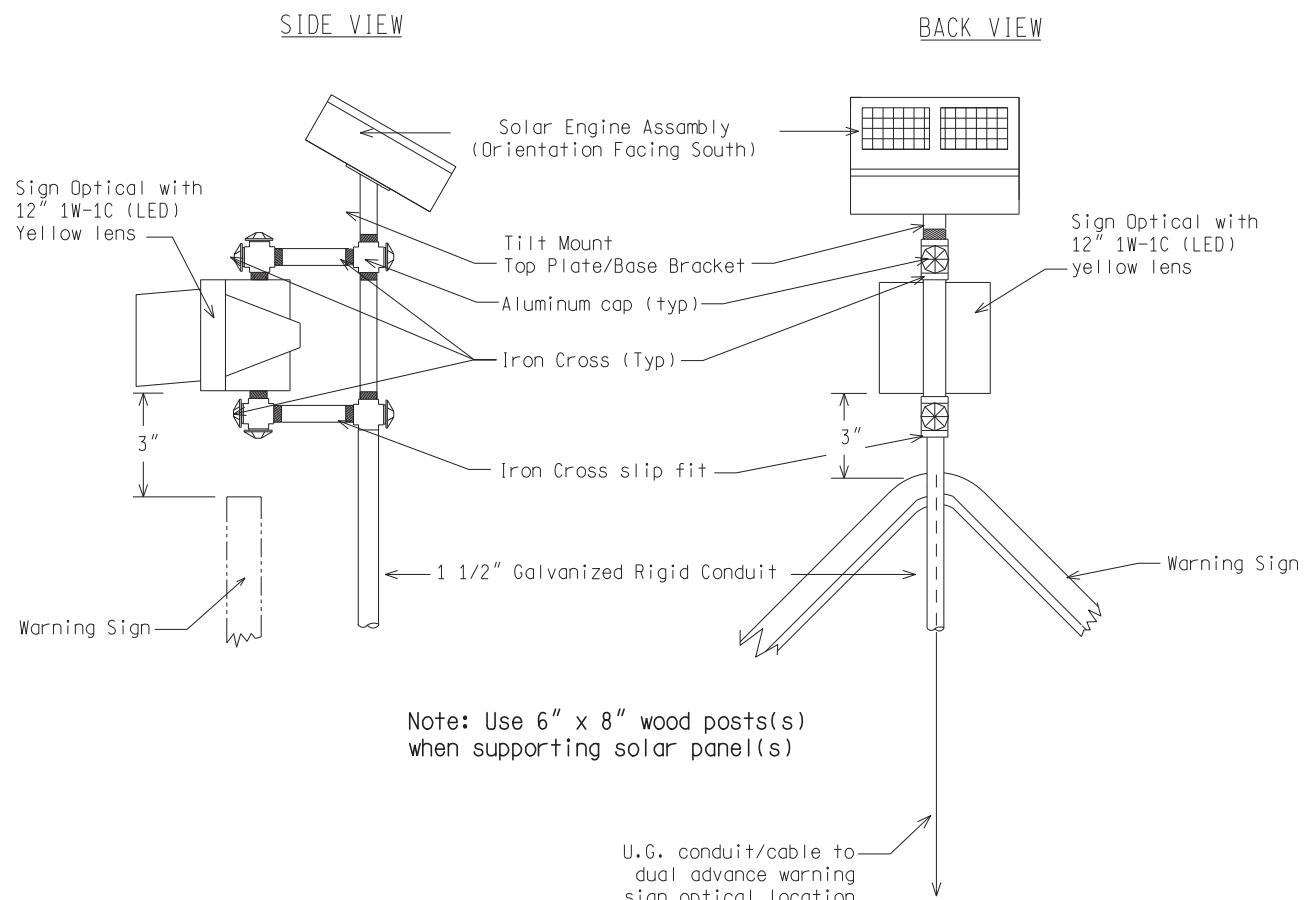
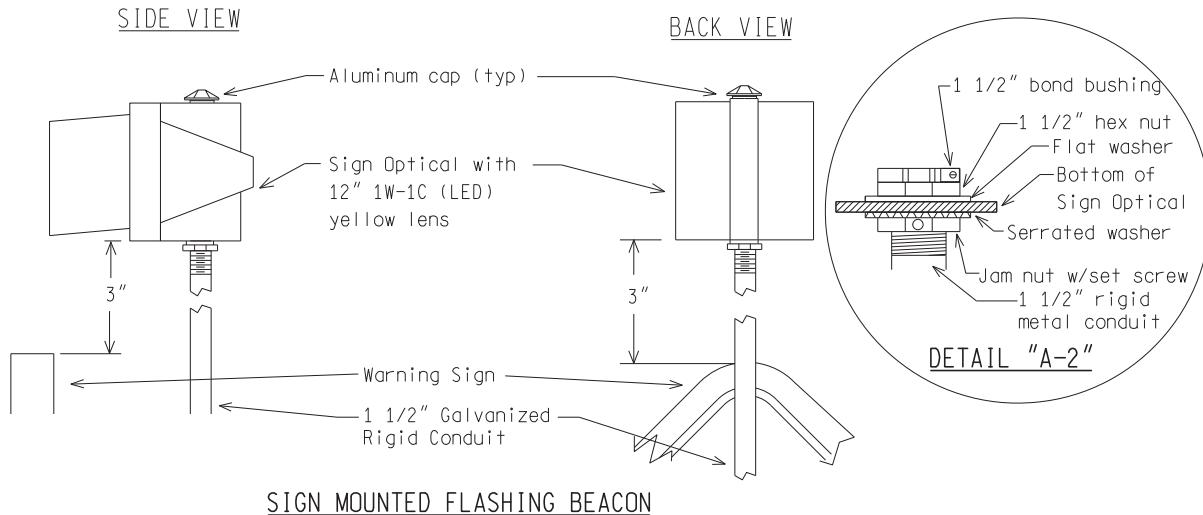
FHWA APPROVAL DATE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn Rev. 02/16/17

PLAN DATE

SIG-320-A

SHEET
5 of 9



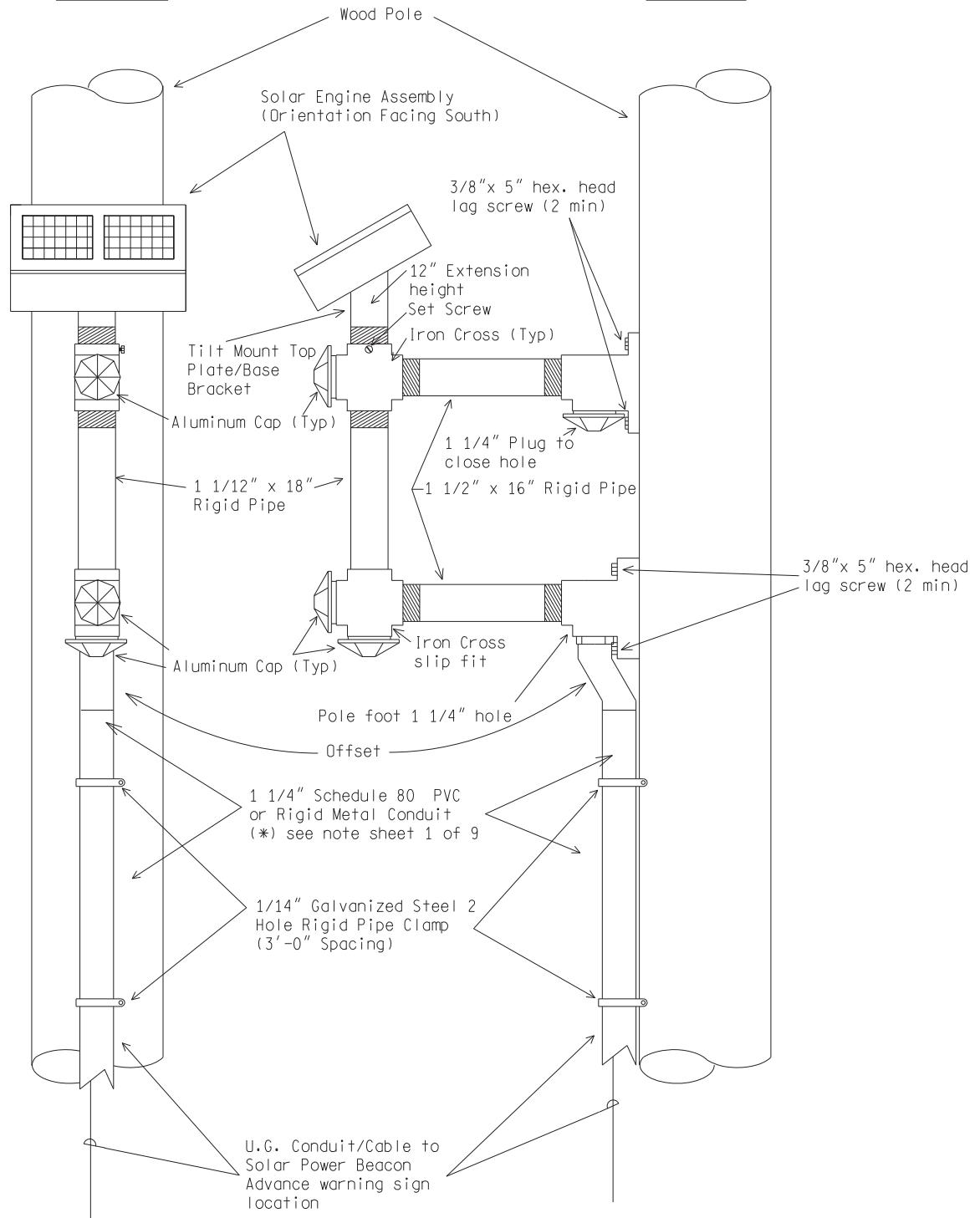
SIGN MOUNTED
FLASHING BEACON (ONE SOLAR ENGINE ASSEMBLY)

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-320-A	SHEET 6 of 9
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn	Rev. 02/16/17	PLAN DATE		

FRONT VIEW

SIDE VIEW



SOLAR ENGINE ASSEMBLY MOUNTED WOOD POLE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

FHWA APPROVAL DATE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn Rev. 02/16/17

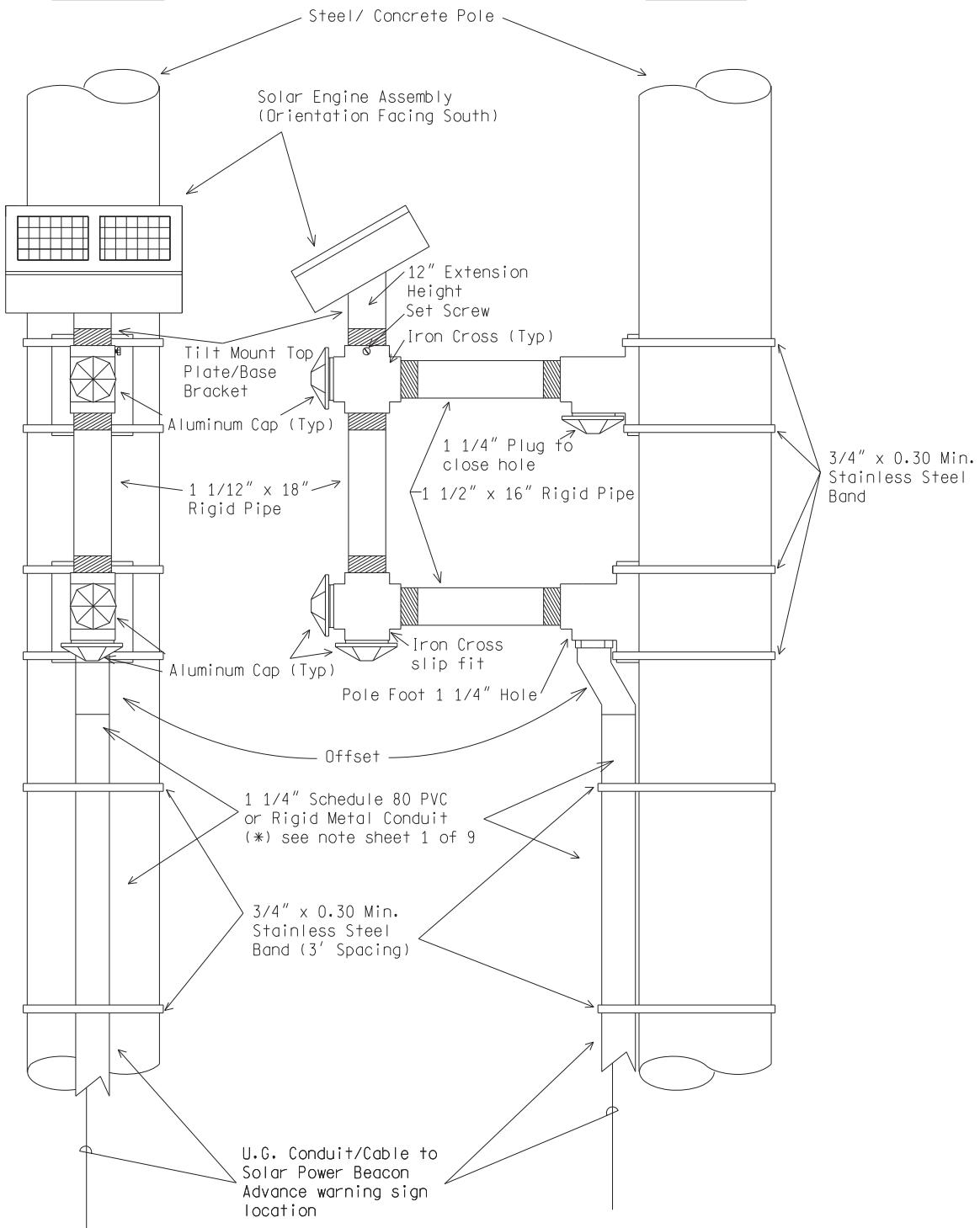
PLAN DATE

SIG-320-A

SHEET
7 of 9

FRONT VIEW

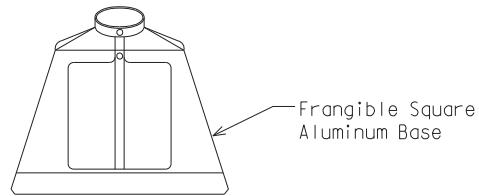
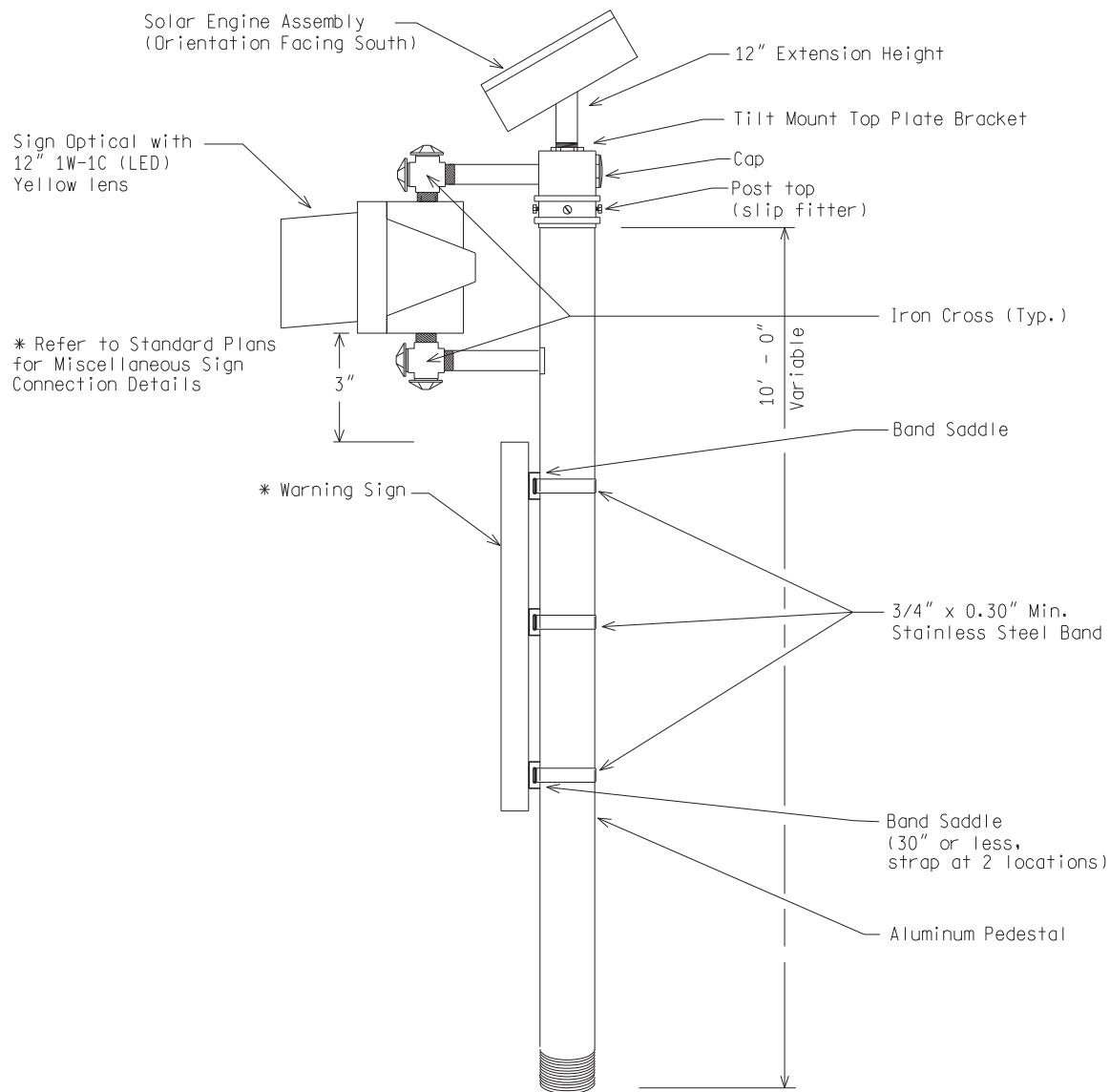
SIDE VIEW



SOLAR ENGINE ASSEMBLY MOUNTED ON STEEL/CONCRETE POLE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-320-A	SHEET 8 of 9
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn	Rev. 02/16/17	PLAN DATE		



SQUARE ALUMINUM BASE

Note: Use pedestal collar for pedestal length greater than 14'

SOLAR ENGINE MOUNTED ON PEDESTAL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-320-A	SHEET 9 of 9
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG320A.dgn	Rev. 02/16/17	PLAN DATE		



*"Our mission is to upgrade and maintain
a safe and efficient road system"*

BID FORM

PROJECT IDENTIFICATION:

GRAND TRAVERSE COUNTY ROAD COMMISSION
2024 HEAVY MAINTENANCE ADVANCED WARNING BEACON MODERNIZATION
CONTRACT #: 24S203

OWNER PROJECT NUMBER: 24S203

<u>Project Number</u>	<u>Location</u>
#24S203	F00013 Three Mile Rd and Potter Rd

THIS BID IS SUBMITTED TO:

GRAND TRAVERSE COUNTY ROAD
COMMISSION
1881 LAFRANIER ROAD
TRAVERSE CITY, MI 49696-8911

- 1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the Road Commission in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
- 2.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance and the prices guaranteed for 45 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of the Road Commission.
- 3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:
 - A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

Addendum No. Addendum Date



*"Our mission is to upgrade and maintain
a safe and efficient road system"*

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions, including subsurface conditions, that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local laws, rules, and regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site which may have been provided, if any, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which may have been provided.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the materials, means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific materials, means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by the Road Commission and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.



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a safe and efficient road system"*

- K. The Bidder understands that if it is the Successful Bidder, it is being selected by the Road commission to perform the Work because of Bidder's skill and expertise to perform the Work and Bidder specifically represents and agrees that it has the experience, knowledge, and competency necessary to perform the Work or oversee the performance of the Work and assumes the responsibility for the performance of the Work pursuant to the Contract documents and assumes the risk in performing the Work.
- 4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over the Road Commission.
- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

UNIT PRICE BID:

See included bid blank:

Unit Prices have been computed in accordance with the Instructions to Bidders.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

- 6.01 Bidder agrees that the Work will be substantially completed and completed and ready for final payment in accordance with the General Specifications on or before the dates or within the number of calendar days indicated in the Contract Documents.
- 7.01 Bidder accepts the provisions of the Contract as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Contract.
- 8.01 The required Bid security is attached to and made a condition of this Bid.
- 9.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Bidding Documents.

SUBMITTED on _____, 20____



*"Our mission is to upgrade and maintain
a safe and efficient road system"*

*Note to Bidders - Complete only one of the following three sections as appropriate for
your business status: individual, partnership or corporation.*

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

Business Address: _____

Phone: _____ Fax No.: _____

e-mail: _____

A Partnership

Name (typed or printed): _____

By: _____
(Authorized Individual's signature)

Doing business as: _____

Business Address: _____

Phone: _____ Fax No.: _____

e-mail: _____

A Corporation/Limited Liability Company/Professional Liability Company

Name (typed or printed): _____

State of Formation _____

Type: _____

GRAND TRAVERSE COUNTY ROAD COMMISSION
2024 HEAVY MAINTENANCE AWB MODERNIZATION

BID FORM
Page 4 of 5



*"Our mission is to upgrade and maintain
a safe and efficient road system"*

By _____
(signature)

Name: _____
(type or printed)

Title _____

Business Address: _____

Phone: _____ Fax No.: _____

e-mail: _____

SHRR 2835890v1

GRAND TRAVERSE COUNTY ROAD COMMISSION
2024 HEAVY MAINTENANCE AWB MODERNIZATION

BID FORM
Page 5 of 5



"Our mission is to upgrade and maintain
a safe and efficient road system"

BID BLANK

24S203 Heavy Maintenance Advanced Warning Beacon Modernization

Location 1: F00013 Three Mile Rd and Potter Rd					
Pay Item	Description	Quantity	Unit	Unit Price	Extended Price
1100001	Mobilization, Max 5%	1.00	LSUM		\$ -
8127051	_Temporary Traffic Control	1.00	LSUM		\$ -
8200072	Flsh Beacon, Solar Power, Rem	10.00	Ea		\$ -
8100403	Sign, Type III, Rem	10.00	Ea		\$ -
8100280	Fdn, Wood Support, Rem	10.00	Ea		\$ -
8200071	Flsh Beacon, Solar Power	10.00	Ea		\$ -
8100404	Sign, Type IIIA	90.00	Sft		\$ -
8100382	Post, Wood, 6 inch by 8 inch	160.00	Ft		\$ -

Contract Total Amount (Words):

Contract Total Amount (Number): \$ -

Contractor

Name

Date

AFFIDAVIT OF NON-COLLUSION BY CONTRACTOR

STATE OF MICHIGAN)
)
COUNTY OF _____)

I, _____, the _____ of _____, state:

1. That I have submitted a bid to the Grand Traverse County Road Commission.
2. That the bid was not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation.
3. That the bid is genuine and not collusive or a sham.
4. That I have not directly or indirectly by agreement, communication, or conference with anyone, attempted to induce action prejudicial to the interest of the Grand Traverse County Road Commission or of any other bidder, or anyone else interested in the proposed contract.
5. That prior to the public opening and reading of the bids, I:
 - a. Did not directly or indirectly induce or solicit anyone else to submit a false or sham bid.
 - b. Did not directly or indirectly collude, conspire, connive, or agree with anyone else that I or anyone would submit a false or sham bid or that anyone should refrain from bidding or withdraw a bid.
 - c. Did not, in any manner, directly or indirectly, seek by agreement, communication, or conference with anyone to raise or fix the bid of said bidder or of anyone else or to raise or fix any overhead, profit, or cost element of a bid price of that of anyone else.
 - d. Did not, directly or indirectly, submit a bid price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof or to any individual or group of individuals, except to any person or persons who have a partnership or other financial interest with me in my business.

Its: _____

Subscribed and sworn to before me this ____ day of _____, 20__.

Notary Public

Co., MI
Acting in _____ Co., MI
My Commission Expires: _____