

CONTRACT DOCUMENTS

NIINAATIG WAY AND PARKING AREAS
PART A: ROAD CONSTRUCTION AND
PART B: HMA, ULTRA-THIN OVERLAY

LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS
7500 ODAWA CIRCLE
HARBOR SPRINGS, MICHIGAN 49740

FEBRUARY 2024

PREPARED BY:



4241 Old US 27 South
Suite 1
Gaylord, MI 49735

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APPENDIX C

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Division 00
Procurement and Contracting Requirements

Section 00 0115 List of Drawing Sheets

Part 1 General

1.01 Description

- A. The Plans bearing the general title of NIINAATIG WAY AND PARKING AREAS, PART A: ROAD CONSTRUCTION AND PART B: HMA- ULTRA-THIN OVERLAY PROJECT and dated FEBRUARY 1, 2023, included with, and form a part of the Contract Documents for this Project.

1.02 List of Plans

<u>SHEET NUMBER</u>	<u>TITLE</u>
T1.0	TITLE SHEET
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Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 00 1113 Advertisement for Bids

NIINAATIG WAY AND PARKING AREAS
PART A: ROAD CONSTRUCTION AND
PART B: HMA, ULTRA-THIN OVERLAY
LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS
HARBOR SPRINGS, MICHIGAN

Little Traverse Bay Bands of Odawa Indians solicits bids for NIINAATIG WAY AND PARKING AREAS, PART A: ROAD CONSTRUCTION AND PART B: HMA, ULTRA-THIN OVERLAY project. Bid shall be submitted to the Little Traverse Bay Bands of Odawa Indians at 7500 Odawa Circle, Harbor Springs, Michigan 49740, until **10:00 am**, Local Time, **Thursday, March 14, 2024**, at which time and place said Bids will be opened and publicly read aloud for the following approximate quantities of work:

Construction of 0.21 miles of new road construction, and 213 tons of HMA, ultra-thin overlay including Excavation, Earth; Embankment, CIP; Aggregate Base; HMA Paving; Curb Slp, HMA; HMA Spillway; Aggregate Shoulders; Slope Restoration; Trenching, Sidewalk Removal, Curb Ramp, Concrete, and all other miscellaneous appurtenances.

Contract Documents are on file with:

Little Traverse Bay Bands of Odawa Indians, Planning Department, 1345 US-31 N, Petoskey, MICHIGAN, 49770, contact Tammy Willis at (231) 242-1581.
Wade Trim, Inc., 4241 Old US-27 South, Gaylord, MI 49735 or
<http://www.wadetrim.com/resources/bid-tab/>
McGraw-Hill Dodge Reports & Builders Exchanges will have Contract Documents, Builders Exchanges are authorized to share the contract documents with other exchanges.

Each Bid package shall be accompanied by a certified check, cashier's check, money order, or bid bond, in the amount of at least five (5) percent of the amount bid, drawn payable to the OWNER as security for the proper execution of the Agreement.

The Little Traverse Bay Bands of Odawa Indians reserves the right to accept or reject any or all bids and to waive any informality in any bids should it consider same to be in its best interest.

Bids may not be withdrawn for the period of **sixty (60)** days after date of receiving bids.

All inquiries shall be directed to Paul Repasky, PE, at Phone: (989) 619-3454, Fax: (989) 732-6391, or Email: prepasky@wadetrim.com

Wade Trim, Inc.
4241 Old US 27 South
Suite 1
Gaylord, MI 49735

Little Traverse Bay Bands of Odawa Indians
7500 Odawa Circle
Harbor Springs, MI 49740

Section 00 2113 Instructions to Bidders

Part 1 General

1.01 Defined Terms

- A. Terms used in these Instructions to Bidders have the meanings assigned to them in the General Conditions.
1. The term "Bidder" means one who submits a Bid directly to OWNER as distinct from a subbidder who submits a Bid to a Bidder.
 2. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom OWNER makes an award.
 3. The term "OWNER" means Little Traverse Bay Bands of Odawa Indians, being a party of the first part of this Contract.
 4. The term "ENGINEER" means Wade Trim, Inc., 4241 Old US 27 South, Suite 1, Gaylord, Michigan 49735, or his duly authorized representative.

1.02 Scope of Work

- A. The scope and location of Work are indicated in the Plans.

1.03 Bidders Qualifications

- A. No Bid will be considered from any Bidder unless known to be skilled and regularly engaged in work of a character similar to that covered by the Contract Documents. In order to aid the OWNER in determining the responsibility of any Bidder, the Bidder, within 48 hours after being requested in writing by the OWNER to do so, shall furnish evidence, satisfactory to the OWNER, of the Bidder's experience and familiarity with Work of the character specified, and his financial ability to properly prosecute the proposed Work to completion within the specified time. The evidence requested may include, but shall not be limited to, the following:
1. The address and description of the Bidder's plant or permanent place of business.
 2. The Bidder's performance records for all Work awarded to or started by him within the past three years.
 3. An itemized list of the Bidder's equipment available for use on the proposed Contract.
 4. The Bidder's financial statement, including statement of ownership of equipment necessary to be used in executing Work under Contract.
 5. Evidence that the Bidder is authorized to do business in the state in which the project is located, in case of a corporation organized under the laws of any other state; and,
 6. Such additional information as will satisfy the OWNER that the Bidder is adequately prepared to fulfill the Contract.

1.04 Examination of Contract Documents and Site

- A. It is the responsibility of each Bidder before submitting a Bid, to:
 - 1. examine the Contract Documents thoroughly,
 - 2. visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work,
 - 3. consider federal, state, and local Laws and Regulations that may affect cost, progress, performance, or furnishing of the Work; and
 - 4. study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data; and
 - 5. promptly notify ENGINEER in writing of all conflicts, errors, ambiguities or discrepancies which Bidder has discovered in or between Contract Documents and such related documents.
 - 6. purchase official Procurement Documents from ENGINEER in order to be included on the project Plan Holder List and be considered eligible for bidding.

- B. Reference is made to the Supplementary Conditions for the identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparing the Contract Documents.
 - 1. If such reports are not included as appendices to the Contract Documents, OWNER will make copies available to any Bidder requesting them. These reports are included for reference only and are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents.
 - 2. The Bidder may rely upon the general accuracy of the "technical data" contained in such reports but not upon other data, interpretations, opinions or information contained in such reports or otherwise relating to the subsurface conditions at the site, nor upon the completeness thereof for bidding or construction purposes.
 - 3. Before submitting his Bid each Bidder will, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

- C. On request OWNER will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid. Bidder shall fill all holes and clean up and restore the site to its former conditions upon completion of such investigations and tests.

- D. The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Plans.

- E. The locations of utilities as shown on the Plans are taken from sources believed to be reliable. Neither the OWNER nor the ENGINEER will be responsible for any omissions of, or variations from, the indicated location of existing utilities which may be encountered in the Work.
- F. The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 1.04, that without exception the Bid is based upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown, indicated or required by the Contract Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in Contract Documents and the resolution by ENGINEER is acceptable to Bidder, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performing and furnishing the Work, and that the time stated in the Proposal is sufficient to complete the project.

1.05 Interpretations and Addenda

- A. Should any prospective bidder find discrepancies in, or omissions from the Plans, Specifications or other parts of the Contract Documents, he may submit a written request to the ENGINEER for an interpretation thereof. The person submitting the request will be held responsible for its prompt delivery at least seven (7) days prior to the date for opening of Bids. Questions received less than seven (7) days prior to the date for opening of bids will not be answered. Any interpretation of inquiry will be made by Addendum duly issued to all prospective bidders.
- B. Any change in or addition to the Contract Documents deemed necessary by the OWNER shall be made in the form of an Addendum issued to all prospective bidders who have taken out Contract Documents and all such Addenda shall become a part of the Contract Documents as though same were incorporated into same originally. Oral explanations and information do not constitute official notification and are not binding.

1.06 Bid Security

- A. Bid Security shall be made payable to OWNER, in an amount of five (5) percent of the Bidder's maximum Bid price and in a form as indicated in the Advertisement. Bid Bonds, if indicated as acceptable in the Advertisement, shall be issued on the form included in the Contract Documents by a Surety meeting the requirements of paragraph 5.01 of the General Conditions.
- B. The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if the successful Bidder fails to execute and deliver the Agreement and furnish the required Contract Security within 15 days of the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earliest of the seventh day after the "Effective Date of Agreement" (which term is defined in the General Conditions) or the expiration of the hold period on the Bids. Bid Security of other Bidders will be returned within 14 days of the Bid opening, unless indicated otherwise in the Advertisement.

1.07 Contract Time

- A. The number of days within which, or the date by which, the Work is to be Substantially Completed, if applicable, and also completed and ready for final payment (the Contract Time) are set forth in the Proposal and will be included in the Agreement.

1.08 Substitute and “Or-Equal” Items

- A. The Contract, if awarded, will be on the basis of materials and equipment described in the Plans or specified in the Specifications without consideration of possible substitute or “or-equal” items. Whenever it is indicated in the Plans or specified in the Specifications that a substitute or an “or-equal” item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of Agreement. In addition, in no case shall ENGINEER’s denial of CONTRACTOR’s application give rise to any claim for additional cost, it being understood by CONTRACTOR that acceptance of substitute or an “or equal” item of material is at the sole discretion of ENGINEER.

1.09 Receipt and Form of Bid

- A. Bids shall be submitted at the time and place indicated in the Advertisement for Bids and shall be included in an opaque sealed envelope, marked with the Project title and name and address of the Bidder and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face thereof. Any Bid received after the scheduled time and place indicated in the Advertisement for Bids shall be returned unopened.
 1. OWNER invites bids on the Proposal and other form(s) attached hereto. Bids will be received at the time and place indicated in the Advertisement and thereupon will be publicly opened and read. An abstract of the amounts of the base bids and any major alternates will be made available after the opening of Bids.
 2. OWNER may consider as informal any Bid on which there is an alteration of, or departure from the Proposal Form attached hereto.
 3. The complete set of Contract Documents must be used in preparing Bids: neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents. In order to verify the completeness of the set of Contract Documents the Bidder used in preparing his Bid, the OWNER may require the Bidder to submit the set of Contract Documents he used in preparing his Bid. The Bidder shall submit his Bid on the separate Proposal form included in these Contract Documents.
 4. The Proposal shall be legibly prepared, with ink or typewriter, on the form included in these Contract Documents. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given. Proposals will be compared on basis of lump sum items, if any, and on product of the quantities of items listed at the respective unit prices bid.
 5. Erasures or other changes in the Bids must be explained or noted over the signature of the Bidder.
 6. Names must be typed or printed below the signature.

7. The quantities as shown in the Proposal are approximate only and will be used as a basis of comparison of Bids, and award of Contracts. Payment will be made on basis of actual quantities of Work performed in accordance with the Contract Documents. The Unit Prices bid, shall include such amounts as the Bidder deems proper for overhead, profit, taxes, General Conditions and such other incidentals as noted in the Contract Documents.
8. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Proposal Form.
9. The Legal Status of Bidder Form contained in the Contract Documents must be submitted with each Proposal and must clearly state the legal position of a Bidder. In the case of a corporation, the home address, name and title of all officers must be given. In the case of a partnership, show names and home addresses of all partners. If an individual, so state. Any individual bid not signed by the individual must have attached, thereto, a power of attorney evidencing authority to sign.
10. Other documents to be attached to the Proposal and made a condition thereof are identified in the Proposal. The same individual signing the Proposal shall sign these other documents.

1.10 Modifications and Withdrawal of Bids

- A. Bids 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 at any time prior to the opening of Bids. If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw his Bid and the Bid Security will be returned. Thereafter, at the sole option of OWNER, that Bidder will be disqualified from further Bidding on the Work to be provided under the Contract Documents.

1.11 Award of Contract

- A. OWNER reserves the right to reject any and all Bids for any reason, to waive any and all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, non-responsive, unbalanced, or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies in the multiplication of units of work and unit prices, will be resolved in favor of unit price. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- B. In evaluating Bids, OWNER shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data if requested in the Bid forms. It is OWNER's intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid form but OWNER may accept them in any order or combination.
- C. Subject to the approval of OWNER, the Contract will be awarded to the lowest responsive and responsible Bidder. Responsibility of Bidder will be determined on basis of past performance and Work of similar character, equipment and labor available to do the Work and financial status.

1. The Contract shall be considered to have been awarded after the approval of the OWNER has been duly obtained and a formal Notice of Award duly served on the successful Bidder by OWNER.
 2. The Contract shall not be binding upon the OWNER until the Agreement has been duly executed by the Bidder and the duly authorized officials of the OWNER.
- D. If the Contract is to be awarded, OWNER will give the successful Bidder a Notice of Award within 60 days after the day of the Bid opening, unless such other time is specified in the Advertisement for Bids.

1.12 Signing of Agreement

- A. Within fifteen (15) days after OWNER gives a Notice of Award to the successful Bidder, the CONTRACTOR shall sign and deliver the specified number of counterparts of the Agreement to OWNER with all other Contract Documents attached. Within ten (10) days thereafter, OWNER will deliver two (2) fully signed counterparts to CONTRACTOR. ENGINEER will identify, date or correct those portions of the Contract Documents not fully signed, dated or executed by OWNER and CONTRACTOR and such identification, dating or correction shall be binding on all parties.

1.13 Sales and Use Taxes

- A. Per the tax agreement in effect between the Owner and State of Michigan, this project is exempt from state sales taxes and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Bid. Bidders shall fully cooperate with Owner to effectuate any administrative requirements of the agreement.

1.14 Contracts to be Assigned (Indian Preference)

- A. The Contractor agrees to give preference to Indians who can perform the work required, and to the extent feasible consistent with training opportunities, regardless of age (subject to existing laws and regulation), sex, religion, or tribal affiliation, for training and employment opportunities under this contract. The Contractor also agrees to give preference to Indian organizations and Indian-owned economic enterprises in the awarding of any subcontracts consistent with the effective performance of this contract. The Contractor shall maintain and provide to the Bureau's Contracting Officer, such records as are necessary to indicate compliance with this paragraph.

1.15 Wage Rate Requirements

- A. The Contractor and Subcontractors are required to pay prevailing wage rates.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 00 2213 Supplementary Instructions to Bidders

Part 1 General

1.01 Modifications

- A. These Supplementary Instructions to Bidders amend or supplement, Section 00 2213, Instructions to Bidders, as indicated below. All provisions which are not amended or supplemented remain in full force and effect.

- B. The terms used in these Supplementary Instructions to Bidders have the meanings assigned to them in the Instructions to Bidders, General Conditions, and as follows:
 - 1. OWNER – Little Traverse Bay Bands of Odawa Indians, being a party of the first part of this Contract.

 - 2. ENGINEER - Wade Trim, Inc., or his duly authorized representative.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 00 4243 Proposal

LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS
7500 ODAWA CIRCLE
HARBOR SPRINGS, MI 49740

Re: NIINAATIG WAY AND PARKING AREAS
PART A: ROAD CONSTRUCTION AND
PART B: HMA, ULTRA-THIN OVERLAY

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with the Little Traverse Bay Bands of Odawa Indians in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents. In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that:

- a) Bidder has examined copies of all Contract Documents which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

Addendum No.	Date of Release	Signature

- b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work and has made such independent investigations as Bidder deems necessary.
- c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation 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 person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

PART A: ROAD CONSTRUCTION

<u>Item</u>	<u>Pay Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
1.	1500001	Mobilization, Max	1.00	LSUM	\$ _____	\$ _____
2.	2020004	Tree, Rem, 6 inch to 18 inch	1	EA	\$ _____	\$ _____
3.	2030001	Culv, Rem, Less than 24 inch	1	EA	\$ _____	\$ _____
4.	2040060	Structures, Rem	1	LSUM	\$ _____	\$ _____
5.	2050010	Embankment, CIP	700	CYD	\$ _____	\$ _____
6.	2050016	Excavation, Earth	1,600	CYD	\$ _____	\$ _____
7.	2080036	Erosion Control, Silt Fence	1,000	FT	\$ _____	\$ _____
8.	3020001	Aggregate Base	1,450	TON	\$ _____	\$ _____
9.	3070121	Shld, Cl II	27	TON	\$ _____	\$ _____
10.	4010015	Culv End Sect, 15 inch	2	EA	\$ _____	\$ _____
11.	4010540	Culv, Cl E, Conc, 15 inch	40	FT	\$ _____	\$ _____
12.	4030005	Dr Structure Cover, Adj. Case 1	1	EA	\$ _____	\$ _____

<u>Item</u>	<u>Pay Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
13.	5010005	HMA Surface, Rem	22	SYD	\$ _____	\$ _____
14.	5012024	HMA, 4EL	256	TON	\$ _____	\$ _____
15.	5012036	HMA, 5EL	256	TON	\$ _____	\$ _____
16.	8050010	Curb Slp, HMA	1,134	FT	\$ _____	\$ _____
17.	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furnished	4	EA	\$ _____	\$ _____
18.	8120013	Barricade, Type III, High Intensity, Doubled Sided, Lighted, Oper	4	EA	\$ _____	\$ _____
19.	8120350	Sign, Type B, Temp, Prismatic, Furn	128	SFT	\$ _____	\$ _____
20.	8120351	Sign, Type B, Temp, Prismatic, Oper	128	SFT	\$ _____	\$ _____
21.	8140005	Ditch, Plain Cobble	57	SYD	\$ _____	\$ _____
22.	8147011	HMA Spillway	29	SYD	\$ _____	\$ _____
23.	8160028	Mulch Blanket, High Velocity	1,000	SYD	\$ _____	\$ _____
24.	8167011	Slope Restoration, Special	5,500	SYD	\$ _____	\$ _____

TOTAL PART A CONTRACT PRICE \$ _____
(Items 1 through 24) (numeric)

(In Words)

PART B: HMA, ULTRA-THIN OVERLAY

<u>Item</u>	<u>Pay Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
1.	2010001	Clearing	0.04	ACRE	\$ _____	\$ _____
2.	2040055	Sidewalk, Rem	18	SYD	\$ _____	\$ _____
3.	2050010	Embankment, CIP	50	CYD	\$ _____	\$ _____
4.	2087050	Stone, Decorative	4	EA	\$ _____	\$ _____
5.	3020001	Aggregate Base	193	TON	\$ _____	\$ _____
6.	3070200	Trenching	6.3	STA	\$ _____	\$ _____
7.	4030005	Dr Structure Cover, Adj, Case 1	1	EA	\$ _____	\$ _____
8.	5010002	Cold Milling HMA Surface	70	SYD	\$ _____	\$ _____
9.	5010025	Hand Patching	21	TON	\$ _____	\$ _____
10.	5010025	HMA, 4EL	20	TON	\$ _____	\$ _____
11.	5010036	HMA, 5EL	20	TON	\$ _____	\$ _____
12.	5047031	HMA Ultra-thin Overlay	213	TON	\$ _____	\$ _____
13.	8030010	Detectable Warning Surface	10	FT	\$ _____	\$ _____
14.	8032001	Curb Ramp, Conc, 4 inch	160	SFT	\$ _____	\$ _____
15.	8050010	Curb Slp, HMA	328	FT	\$ _____	\$ _____
16.	8070090	Post, Wood Guide	1	EA	\$ _____	\$ _____
17.	8077050	Bridge Guard Rail Post, Rem and Replace	1	EA	\$ _____	\$ _____
18.	8100405	Sign, Type IIIB	3	SFT	\$ _____	\$ _____
19.	8127001	Temporary Speed Bump	40	FT	\$ _____	\$ _____
20.	8167011	Slope Restoration, Special	800	SYD	\$ _____	\$ _____

TOTAL PART B CONTRACT PRICE \$ _____
(Items 1 through 20) (numeric)

(In Words)

TOTAL PART A AND PART B CONTRACT PRICE

\$ _____
(numeric)

(In Words)

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employ has examined the Contract Documents provided by OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions and from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose and agrees that he will Contract with OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will be Substantially Completed on or before Friday, June 7, 2024, and completed by Friday, June 21, 2024.

Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the above Substantial Completion date.

Engineering and inspection costs incurred after the above final completion date shall be paid by CONTRACTOR to OWNER as specified in the Conditions of the Contract and Agreement.

Proposals may not be withdrawn for a period of sixty (60) days after bid opening.

The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

Certified Check Cashier's Check Money Order Bid Bond

b) Legal Status of Bidder.

c) Bidder's Name: _____

By: _____
(Signature) (Printed Name)

Address: _____

Phone No.: _____ Fax No.: _____

Email: _____

**Section 00 4313
Bid Bond Form**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
as Principal, hereinafter called the Principal, and _____
a corporation duly organized under the laws of the State of _____, and duly authorized to
transact business in the state of Michigan, as Surety, hereinafter called the Surety, are held and firmly
bound unto Charlevoix County Road Commission, hereinafter called the OWNER, in the sum of _____
_____ Dollars (\$ _____)
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the Principal has submitted a Bid for _____

NOW, THEREFORE, if the OWNER shall accept the Bid of the Principal and the Principal shall enter into a
Contract with the OWNER in accordance with the terms of such Bid, and give such Bond or Bonds as may
be specified in the Contract Documents with good and sufficient surety for the faithful performance of
such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or
in the event of the failure of the Principal to enter such Contract and give such Bond or Bonds, if the
Principal shall pay to the OWNER the difference not-to-exceed the penalty hereof between the amount
specified in said Bid and such larger amount for which the OWNER may in good faith contract with
another party to perform the Work covered by said Bid, then this obligation shall be null and void,
otherwise to remain in full force and effect.

Signed and Sealed this _____ day of _____, 20____.

(Witness)

(Principal)

(Title)

(Witness)

(Surety)

(Title)

**Section 00 4345
Legal Status of Bidder**

This Proposal is submitted in the name of:

(Print) _____

The undersigned hereby designates below his business address to which all notices, directions or other communications may be served or mailed:

Street _____

City _____

State _____ Zip Code _____

The undersigned hereby declares that he has legal status checked below:

- SOLE PROPRIETOR
- SOLE PROPPRIETOR DOING BUSINESS UNDER AN ASSUMED NAME
- CO-PARTNERSHIP
The Assumed Name of the Co-Partnership is registered in the County of _____, Michigan
- CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____ . The Corporation is
 - authorized to conduct business in the State of Michigan
 - not now authorized to conduct business in the State of Michigan
 - possess all required licenses for the work being bid
 - limited liability corporation

The name, titles, and home addresses of all persons who are officers or partners in the organization are as follows:

NAME AND TITLE	HOME ADDRESS
_____	_____
_____	_____
_____	_____
_____	_____

Signed this _____ day of _____, 20____.

By _____ (Signature)

Printed Name of Signer _____

Title _____

**Section 00 5100
Notice of Award**

To: _____

Date: _____

Attention: _____

Project: NIINAATIG WAY AND PARKING AREAS

Pursuant to the provisions of Article 1.11 of the Instructions to Bidders, you are hereby notified that the Little Traverse Bay Bands of Odawa Indians (OWNER) during a regular Meeting held on _____, _____, 20_____, has directed the acceptance of your Bid for the above-referenced Project in the amount of \$_____. This project shall consist of Construction of 0.21 miles of new road construction, and 213 tons of HMA, ultra-thin overlay including Excavation, Earth; Embankment, CIP; Aggregate Base; HMA Paving; Curb Slp, HMA; HMA Spillway; Aggregate Shoulders; Slope Restoration; Trenching, Sidewalk Removal, Curb Ramp, Concrete, and all other miscellaneous appurtenances, as delineated in your Bid submitted to the Little Traverse Bay Bands of Odawa Indians on _____.

Please comply with the following conditions within 15 days of the date of this Notice of Award; that is by _____.

1. Deliver to the ENGINEER **three (3)** fully executed counterparts of the Agreement including all the Contract Documents.
2. Deliver with the executed Agreement the Contract Security (Bonds), on the form included in the Contract Documents, as specified in the General Conditions (Article 5).
3. Deliver with the executed Agreement the Insurance Certificates (and other evidence of insurance) as specified in the General Conditions (Article 5).
4. Please do not date Agreement and Contract Security (Bonds), as these will be dated by the OWNER when executed by him.

It is important to comply with these conditions and time limits as failure to comply with these conditions within the time specified will entitle OWNER to consider your bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

Within ten days after you comply with those conditions, OWNER will return to you two (2) fully signed counterparts of the Agreement with the Contract Documents attached.

In accordance with paragraph 2.05 of the General Conditions, please submit to the ENGINEER the required schedules prior to the scheduling of a Pre-Construction Meeting.

Copy to ENGINEER:

Wade Trim, Inc.
4241 Old US 27 South, Suite 1
Gaylord, MI 49735

Little Traverse Bay Bands of Odawa Indians

By: _____
(Authorized Signature)

Section 00 5200 Agreement

This Agreement, made and entered into this ____ day of ____ in the year 20____ by and between the Little Traverse Bay Bands of Odawa Indians hereinafter called OWNER, and _____ hereinafter called CONTRACTOR, in consideration of the mutual covenants hereinafter sent forth, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Construction of 0.21 miles of new road construction, and 213 tons of HMA, ultra-thin overlay including Excavation, Earth; Embankment, CIP; Aggregate Base; HMA Paving; Curb Slp, HMA; HMA Spillway; Aggregate Shoulders; Slope Restoration; Trenching, Sidewalk Removal, Curb Ramp, Concrete, and all other miscellaneous appurtenances.

ARTICLE 2. CONTRACT TIME

- 2.1 The Work included in **NIINAATIG WAY AND PARKING AREAS, PART A: ROAD CONSTRUCTION AND PART B: HMA, ULTRA-THIN OVERLAY** shall be substantially completed on or before **June 7, 2024**, and completed and ready for final payment in accordance with paragraph 14.11 of the General Conditions on or before **June 21, 2024**.
- 2.2 Engineering and inspection costs incurred after the specified final completion date shall be paid by the CONTRACTOR to the OWNER prior to final payment authorization. Charges shall be made at such times and in such amounts as the ENGINEER shall invoice the OWNER, provided however said charges shall be in accordance with the ENGINEER's current rate schedule at the time the costs are incurred. The costs of ENGINEER incurred after the specified final completion date shall be deducted from the CONTRACTOR's progress payments.
- 2.3 Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not Substantially Complete within the time specified in Article 2.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not Substantially Complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as penalty) CONTRACTOR shall pay OWNER **FIVE HUNDRED Dollars (\$500)** for each day that expires after the time specified in Article 2.1 for Substantial Completion until the Work is Substantially Complete. Liquidated damages charged shall be deducted from the CONTRACTOR's progress payment.

ARTICLE 3. CONTRACT PRICE

- 3.1 OWNER shall pay CONTRACTOR as provided in the attached Proposal for performance of the Work in accordance with the Contract Documents.

ARTICLE 4. PAYMENT PROCEDURES

Progress payments and retainage under this Contract are governed by the provisions of PA 1980, No. 524 (MCLA 125.1561 et seq.). That Act is incorporated herein by reference and made a part of this Contract. Without excluding any provisions of the Act from this Contract, but in order to comply therewith and summarize certain provisions, the following shall apply:

- 4.1 The person representing CONTRACTOR who will submit written requests for progress payments shall be: _____
- 4.2 The person representing OWNER to whom requests for progress payments are to be submitted shall be: _____
- 4.3 CONTRACTOR's representative, listed above, shall submit Applications for Payment on the form provided in the Contract Documents in accordance with Article 14 of the General Conditions. Applications for Payment will be processed as provided in the General Conditions.

ARTICLE 5. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

- 5.1 CONTRACTOR has considered the nature and extent of the Contract Documents, Work, locality, and all local conditions and federal, state and local laws, and regulations that may affect cost, progress, performance, or furnishing of the Work.
- 5.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon in the preparation of the Plans and Specifications and which have been identified in the Supplementary Conditions.
- 5.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in Article 5.2 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.
- 5.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.
- 5.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Contract between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

- 6.1 Procurement Requirements (including Advertisement for Bids, Instructions to Bidders, Supplementary Instructions to Bidders, Proposal, Legal Status of Bidder, and other documents listed in the Table of Contents thereof).
- 6.2 This Agreement
- 6.3 Performance and other Bonds
- 6.4 Notice of Award
- 6.5 Notice to Proceed (if issued)
- 6.6 Conditions of the Contract (including General Conditions and Supplementary Conditions, if any)

- 6.7 Specifications contained within Division 01 through 49 of the Contract Documents dated August 2023
- 6.8 Plans consisting of sheets dated 02.01.2024 and numbered T1.0 through C5.0 inclusive with each sheet bearing the following general title: NIINAATIG WAY AND PARKING AREAS, PART A: ROAD CONSTRUCTION AND PART B: HMA, ULTRA-THIN OVERLAY.
- 6.9 Addenda numbers ____ to ____, inclusive
- 6.10 Documentation submitted by CONTRACTOR prior to Notice of Award
- 6.11 Any Modification, including Change Orders, duly delivered after execution of Agreement.

ARTICLE 7. MISCELLANEOUS

- 7.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.
- 7.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on any other party without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
- 7.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.
- 7.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in _____ counterparts. _____ counterparts each have been delivered to OWNER and CONTRACTOR; one counterpart has been delivered to the ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on _____, _____, 20____.

OWNER _____

CONTRACTOR _____

By _____

By _____

Attest _____

Attest _____

Address for giving notices

Address for giving notices

License No. _____

Agent for service of process: _____

**Section 00 5500
Notice to Proceed**

To: _____

Date: _____, 20____

Attention: _____

Project: NIINAATIG WAY AND PARKING AREAS

Please note that the Contract Time under the above Contract will commence to run on _____, _____, 20____. Within ten (10) days of this date you are to start performing the Work. The dates of Substantial Completion and Final Completion are set forth in the Agreement: they are _____, and _____, respectively.

In accordance with paragraph 2.05 of the General Conditions, please submit to the ENGINEER the required schedules prior to the scheduling of a Pre-Construction Meeting.

Also, in accordance with paragraph 2.05 of the General Conditions, please request a Pre-Construction Meeting from the ENGINEER prior to delivery of any materials or start of any construction. A minimum of three (3) full working days notice is required to set up the Pre-Construction Meeting. Also, please notify the ENGINEER three (3) full working days in advance of any staking requirements or other activity on the Project.

Work at the site must be started by _____, _____, 20____.

Copy to ENGINEER:
Wade Trim, Inc.
4241 Old US 27 South
Suite 1
Gaylord, MI 49735

Little Traverse Bay Bands of Odawa Indians
(OWNER)

By: _____
(Authorized Signature)

**Section 00 6112
Performance Bond**

Bond No. _____

KNOW ALL BY THESE PRESENT, That we, _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Michigan, hereinafter called the "Principal," and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Michigan, as Surety, hereinafter called "Surety", are held and firmly bound unto _____, as Obligee, and hereinafter called "Obligee," in the just and full sum of _____ Dollars (\$ _____) lawful money of the United States of America, to be paid to the said Obligee, to which payment well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION is such that, WHEREAS, the above Principal has entered into a contract with the said Obligee, dated the _____ day of _____, _____, for _____

_____.

Herein referred to and made a part hereof as fully and to the same extent as if the same were entirely written herein, and

WHEREAS, it was one of the conditions of the award of the said Obligee, pursuant to which said contract was entered into, that these presents should be executed.

AND THE SAID SURETY, for value received, hereby stipulates and agrees that no change, extension of time, or any other forbearance, alteration or addition to the terms of the contract or to the work to be performed thereunder or the Contract Documents accompanying the same shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, or any other forbearance, alteration or addition to the terms of the contract or to the Work or to the Contract Documents.

NOW, THEREFORE, if the above Principal shall in all respects comply with the terms and conditions of said contract, and his (their or its) obligations thereunder, including the Contract Documents therein referred to and made a part thereof, and such alteration as may be made in such contract or Contract Documents, as herein or therein provided for, then this obligation shall be void; otherwise, this bond and obligation shall be and remain in full force and effect.

Signed and sealed this _____ day of _____.

Signed, sealed and delivered in the presence of:

Witness for CONTRACTOR

(Principal)

(Title)

By _____

Witness for Surety

(Surety)

(Title)

By _____

Attorney-In-Fact (Seal)

Address

Address of Surety

City

Zip Code

City

Zip Code

Telephone

Telephone

**Section 00 6113
Labor and Material Payment Bond**

Bond No. _____

KNOW ALL BY THESE PRESENT, that we, _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Michigan, hereinafter called the "Principal," and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Michigan, as Surety, hereinafter called "Surety", are held and firmly bound unto _____, as Obligee, and hereinafter called "Obligee," in the just and full sum of _____ Dollars (\$ _____), lawful money of the United States of America, to be paid to the said Obligee, to which payment well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION is such that, WHEREAS, the above Principal has entered into a contract with the said Obligee, dated the _____ day of _____, _____, for _____

which contract is herein referred to and made a part hereof as fully and to the same extent as if the same were entirely written herein, and

WHEREAS, it was one of the conditions of the award of the said Obligee, pursuant to which said contract was entered into, that these presents should be executed.

AND WHEREAS, this Bond is given in compliance with and subject to the provisions of Act No. 213 of the Public Acts of Michigan for the year 1963, as amended, including all notices, time limitation provisions and other requirements set forth therein, which are incorporated herein by reference.

AND THE SAID SURETY, for value received, hereby stipulates and agrees that no change, extension of time, or any other forbearance, alteration or addition to the terms of the contract or to the Work to be performed thereunder or the Contract Documents accompanying the same shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, or any other forbearance, alteration or addition to the terms of the contract or to the Work or to the Contract Documents.

NOW, THEREFORE, the condition of this obligation is such that if all claimants as defined in Act No. 213 of the Public Acts of Michigan for the year 1963, as amended, are timely paid for all labor and material used or reasonably required for use in the performance of the contract, then this obligation shall be void; otherwise, it shall remain in full force and effect.

Signed and sealed this _____ day of _____.

Signed, sealed and delivered in the presence of:

Witness for CONTRACTOR

(Principal)

(Title)

By _____

Witness for Surety

(Surety)

(Title)

By _____

Attorney-In-Fact (Seal)

Address

Address of Surety

City

Zip Code

City

Zip Code

Telephone

Telephone

Section 00 6275 Engineer's Certificate for Payment

Job Number: _____ Certificate Number: _____ Date: _____

OWNER: _____

CONTRACTOR: _____

Project: _____

Contract Date: _____

Substantial Completion Date: _____ Extended To: _____

Completion Date: _____ Extended To: _____

Original Contract Price.....	Total Earned To Date.....
Adjustments to Quantities.....	Retention.....
Extras.....	Deductions.....
Total Change Orders.....	Total Withheld.....
Amended Contract Price.....	Total Net Due.....
Less Total Net Due.....	Less Previous Certificates.....
Balance on Contract.....	Total Balance Due this Certificate....

ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on the data comprising the above application, the ENGINEER to the best of his knowledge, information, and belief and subject to the limitations stated in the Contract Documents certifies to the OWNER that: (1) Work has progressed to the point indicated, (2) that the quality of the Work is in accordance with the Contract Documents, and (3) the CONTRACTOR is entitled to payment of the Total Balance Due This Certificate.

Certified _____
ENGINEER Date

Recommended _____
Date

Section 00 6520 Sworn Statement

STATE OF MICHIGAN

COUNTY OF _____}

_____ being duly sworn, deposes and says:
That _____ is the (CONTRACTOR) (Subcontractor) for an improvement to the following described real property situated in _____ County, Michigan described as follows: _____

(Insert Legal Description of Property)

That the following is a statement of each Subcontractor and Supplier and laborer, for which the payment of wages or fringe benefits and withholdings is due but unpaid, with whom the (CONTRACTOR) (Subcontractor) has (contracted) (subcontracted) for performance under the contract with the OWNER or lessee thereof, and that the amounts due to the persons as of the date hereof are correctly and fully set forth opposite their names, as follows:

Name of Subcontractor, Supplier, or Laborer	Type of Improvement Furnished	Total Contract Price	Amount Already Paid	Amount Currently Owning	Balance to Complete (optional)	Amount of Laborer Wages Due but Unpaid	Amount of Laborer Fringe Benefits and Withholdings Due But Unpaid
TOTALS:							

(Some columns are not applicable to all persons listed)

(CONTINUED)

That the CONTRACTOR has not procured material from, or subcontracted with, any person other than those set forth on the reverse side and owes no money for the improvement other than the sums set forth on the reverse side.

Deponent further says that he or she makes the foregoing statement as the (CONTRACTOR) (Subcontractor) or as _____ of the (CONTRACTOR) (Subcontractor) for the purpose of representing to the OWNER or lessee of the described on the reverse side premises and his or her agents that the property described on the reverse side is free from claims of construction liens, or the possibility of construction liens, except as specifically set forth on the reverse side and except for claims of construction liens by laborers which may be provided pursuant to section 109 of the construction lien act, Act No. 497 of the Public Acts of 1980, as amended, being section 570.1109 of the Michigan Compiled Laws.

WARNING TO OWNER: AN OWNER OR LESSEE OF THE PROPERTY DESCRIBED ON THE REVERSE SIDE MAY NOT RELY ON THIS SWORN STATEMENT TO AVOID THE CLAIM OF A SUBCONTRACTOR, SUPPLIER, OR LABORER WHO HAS PROVIDED A NOTICE OF FURNISHING OR A LABORER WHO MAY PROVIDE A NOTICE OF FURNISHING PURSUANT TO SECTION 109 OF THE CONSTRUCTION LIEN ACT TO THE DESIGNEE OR TO THE OWNER OR LESSEE IF THE DESIGNEE IS NOT NAMED OR HAS DIED.

(Deponent)

WARNING TO DEPONENT: A PERSON, WHO WITH INTENT TO DEFRAUD, GIVES A FALSE SWORN STATEMENT IS SUBJECT TO CRIMINAL PENALTIES AS PROVIDED IN SECTION 110 OF THE CONSTRUCTION LIEN ACT, ACT NO. 497 OF THE PUBLIC ACTS OF 1980, AS AMENDED, BEING SECTION 570.1110 OF THE MICHIGAN COMPILED LAWS.

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

Notary Public

_____ County, Michigan

My Commission Expires _____

INSTRUCTIONS

1. A Sworn Statement in the preceding form must be provided before any CONTRACTOR or Subcontractor can file a Complaint, Cross-Claim, or Counter-Claim to enforce a construction lien.
2. An OWNER or lessee may withhold payment to a CONTRACTOR or Subcontractor who has not provided a Sworn Statement. An OWNER or lessee may withhold from a CONTRACTOR or Subcontractor who has provided a Sworn Statement the amount sufficient to pay all sums shown on the statement as owing Subcontractors, Suppliers, and laborers, or the amount shown to be due to lien claimants who have provided Notices of Furnishing pursuant to the Construction Lien Act of 1980.
3. An OWNER or lessee may rely on a Sworn Statement to avoid a lien claim unless the lien claimant has provided the OWNER or lessee with a Notice of Furnishing pursuant to the Construction Lien Act of 1980.
4. If the contract provides for payments by the OWNER to the general contractor, if any, in the normal course of construction, but the OWNER elects to pay lien claimants directly, the first time the OWNER elects to make payment directly to a lien claimant he or she shall provide at least 5 business days' notice to the general contractor of the intention to make direct payment. Subsequent direct disbursements to lien claimants need not be preceded by the 5-day notice provided in this section unless the OWNER first returns to the practice of paying all sums to the general contractor.

Section 00 6521 Prevailing Federal Wage Rate – Davis Bacon Act

Part 1 General

1.01 Summary

- A. P.L. 111-88 requires compliance with the Davis Bacon Act and adherence to the current U.S. Department of Labor Wage Decision. Attention is called to the fact that not less than the minimum salaries and wages as set forth in the Contract Documents (see Wage Decision included herein) must be paid on this project. The Wage Decision, including modifications, must be posted by the Contractor on the job site. A copy of the Federal Labor Standards Provisions is included and is hereby a part of this contract.
- B. In case there is an omission of any trade from the list of wage and fringe benefit rates to be paid to each class of mechanic by CONTRACTOR, it shall be understood that the trades omitted shall also be paid not less than the wage and fringe benefit rates prevailing in the locality in which the work is to be performed.
- C. A finding by the U.S. Department of Labor's Wage and Hour Division that CONTRACTOR or subcontractor is in violation of the requirements of the contract shall be final.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

See Appendix A for Wage Rate Determination.

**Section 00 7200
General Conditions**

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Article 1 Definitions

1.01 Defined Terms

- A. Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:
1. Addenda -- Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Contract Documents.
 2. Agreement -- The written Agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.
 3. Application and Certificate for Payment -- The form included in the Contract Documents which is to be used by CONTRACTOR in requesting progress or final payment and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. Bid -- The offer or proposal of the bidder submitted on the prescribed form setting forth the price(s) for the Work to be performed.
 5. Bidding Requirements -- The Advertisement for Bids, Instructions to Bidders, Supplementary Instructions to Bidders, Proposal, Legal Status of Bidder, Bid Bond, and any other documents identified in the Proposal, to be submitted with the Bid.
 6. Bonds -- Bid, Performance and Payment bonds and other instruments of security.
 7. Change Order -- A written order to CONTRACTOR, reviewed by the ENGINEER and signed by OWNER, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Price or the Contract Time. The Contract Price and Contract Time may be changed only by Change Order. A Change Order signed by CONTRACTOR indicates his agreement therewith, including that the Change Order constitutes a final adjustment in the Contract Price or Contract Time for all issues addressed or described in the Change Order.
 8. Change Proposal -- A written request by CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by ENGINEER concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 9. Claims --
 - a. A demand or assertion by OWNER directly to CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by ENGINEER concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting ENGINEER's decision regarding a Change Proposal; seeking resolution of a contractual issue that ENGINEER has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by CONTRACTOR directly to OWNER, duly submitted in compliance with the procedural requirements set forth herein, contesting ENGINEER's decision regarding a Change Proposal, or seeking resolution of a contractual issue that ENGINEER has declined to address.
 - c. A demand or assertion by OWNER or CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, arising after ENGINEER has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
10. Constituents of Concern -- Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 11. Contract -- The entire and integrated written contract between OWNER and CONTRACTOR concerning the Work
 12. Contract Documents -- Those items so designated in the Agreement, and which together comprise the Contract.
 13. Contract Price -- The monies or other considerations payable by OWNER to CONTRACTOR for completion of acceptable Work in accordance with the Contract Documents as stated in the Agreement.
 14. Contract Time -- The number of days or the date stated in the Agreement:
 - a. to achieve Substantial Completion of all or any specified portions of the Work, and;
 - b. to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.11.
 15. CONTRACTOR -- The person, firm or corporation with whom OWNER has entered into the Agreement.
 16. Cost of the Work -- The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined in paragraph 12.01.
 17. Day -- A calendar day of 24 hours measured from midnight to the next midnight.
 18. Defective -- An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.
 19. Drawings -- See Plans.

20. Effective Date of Agreement -- The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
21. Electronic Document -- Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
22. Electronic Means -- Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow:
 - a. the transmission or communication of Electronic Documents;
 - b. the documentation of transmissions, including sending and receipt;
 - c. printing of the transmitted Electronic Document by the recipient;
 - d. the storage and archiving of the Electronic Document by sender and recipient; and
 - e. the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
23. ENGINEER -- The person, firm, or corporation identified in the Supplementary Instructions to Bidders hired by OWNER to prepare Plans and Specifications for the Project and to assist OWNER in interpreting Plans and Specifications during the performance of the Work. ENGINEER's authority and responsibility are set forth in the Contract between OWNER and ENGINEER. CONTRACTOR acknowledges and agrees that ENGINEER's obligations and duties under ENGINEER's contract with OWNER are obligations and duties to OWNER only, and ENGINEER has no independent obligation to CONTRACTOR of any kind, including but not limited to providing services, or to take any action or to refrain from taking action on behalf of CONTRACTOR or any Subcontractor, Sub-Subcontractor or Supplier.
24. Field Order -- A written order issued by ENGINEER which clarifies or interprets the Contract Documents or orders minor changes in the Work in accordance with paragraphs 9.04 and 9.05 but which does not involve a change in the Contract Price or the Contract Time.
25. Hazardous Environmental Conditions -- The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

- c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
26. Laws and Regulations; Laws or Regulations Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.
 27. Lump Sum -- Construction Work where the OWNER pays a single stipulate price (Lump Sum) for the entire scope of Work; plus or minus alternates and/or allowances. However, unit prices may be required for individual items of Work for the purposes of changes, additions, or deletions.
 28. Milestone -- A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of the Work.
 29. Notice of Award -- The written notice by OWNER to the apparent successful Bidder stating that, upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.
 30. Notice to Proceed -- A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligation under the Contract Documents.
 31. OWNER -- The public body or authority, corporation, limited liability company, association, partnership, or individual with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided and as identified in the Supplementary Instructions to Bidders.
 32. Partial Utilization -- Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.
 33. Plans -- The part of the Contract Documents which graphically show the extent, character and Scope of the Work to be furnished and performed by CONTRACTOR and which have been prepared or approved by the ENGINEER or OWNER; sometimes also referred to as Drawings.
 34. Progress Schedule -- A schedule, prepared and maintained by CONTRACTOR, describing the sequence and duration of the activities comprising CONTRACTOR's plan to accomplish the Work within the Contract Times.
 35. Project -- The total construction of which the Work to be provided under the Contract Documents may be the whole or a part as indicated elsewhere in the Contract Documents.
 36. Project Manual -- The volume assembled for the Project which may include, among other parts, Procurement Requirements, Contracting Requirements and Specifications.
 37. Proposal -- The offer or bid of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 38. Radioactive Material -- Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 as amended.

39. Resident Project Representative -- The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.
40. Samples -- Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
41. Schedule of Submittals -- A schedule, prepared and maintained by CONTRACTOR, of required Submittals and the time requirements for ENGINEER's review of the Submittals.
42. Schedule of Values -- A schedule, prepared and maintained by CONTRACTOR, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing CONTRACTOR's Applications for Payment.
43. Shop Drawings -- All drawings, diagrams, illustrations, schedules and other data or information required by the Contract Documents which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.
44. Site -- Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by OWNER which are designated for the use of CONTRACTOR.
45. Specifications -- That part of the Contract Documents which consist of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.
 - a. Project Specifications are those portions of the Contract Documents which have been prepared specifically for this Project and which are identified by the job number in the lower right-hand corner of each page.
 - b. Standard Specifications are Specification sections that are the same from Project to Project as of the revision date shown in the lower left-hand corner of the page.
 - c. Standard Specification Section Revisions -- Section 00 9120 of the Specifications which amends or supplements the Standard Specification Sections.
46. Subcontractor -- An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.
47. Submittal -- A written or graphic document, prepared by or for CONTRACTOR, which the Contract Documents require CONTRACTOR to submit to ENGINEER, or that is indicated as a Submittal in the Schedule of Submittals accepted by ENGINEER. Submittals may include Shop Drawings and Samples; schedules; product data; OWNER-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record

documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by ENGINEER, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

48. Substantial Completion -- The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by the Certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.11. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
49. Supplementary Conditions -- The part of the Contract Documents which amends or supplements these General Conditions.
50. Supplementary Instructions to Bidders -- The part of the Contract Documents which amends or supplements the Instructions to Bidders.
51. Supplier -- A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with CONTRACTOR, or with any Subcontractor, or with OWNER, to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.
52. Unit Price -- Construction Work where the OWNER pays a fixed sum (Unit Price) per each completed unit of Work. Units are listed on the Proposal Form.
53. Utilities -- Underground or above ground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any structures or encasements containing such facilities, which have been installed to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, water or other liquids or chemicals.
54. Work -- The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.
55. Work Change Directive -- A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and reviewed by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.03 or to emergencies under paragraph 6.18. A Work Change Directive will not change the Contract Price or Contract Time but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.01.

1.02 Terminology

- A. The following words, terms, or phrases are not defined but, when used in the Contract Documents, have the following meaning:
1. Whenever in the Contract Documents the terms “as ordered,” “as directed,” “as required,” “as allowed,” “as approved” or terms of like effect or import are used; or the adjectives “reasonable,” “suitable,” “acceptable,” “proper” or “satisfactory” or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the technical requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.
 2. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 3. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 4. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 5. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, “provide” is implied.
- B. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

Article 2 Preliminary Matters

2.01 Delivery of Bonds and Insurance

- A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds and Insurance Certificates and other evidence of Insurance requested as CONTRACTOR may be required to furnish in accordance with Article 5. No Work at the site may begin or progress payments made to CONTRACTOR until all Bonds and Insurance Certificates in the form and substance required in Article 5 have been submitted and approved by OWNER.

2.02 Copies of Documents

- A. OWNER shall furnish to CONTRACTOR up to 5 copies of the Contract Documents (including at least one fully signed counterpart of the Agreement) as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.03 Commencement of Contract Time; Notice to Proceed

- A. Time is of the essence in the performance of the Work. The Contract Time will commence to run on the 30th day after the effective date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the effective date of the Agreement. In no event will the Contract Time commence to run later than the 30th day after the effective date of the Agreement. Time limits stated in the Contract Documents are of the essence of the Agreement.

2.04 Starting the Project

- A. CONTRACTOR shall start to perform the Work within 10 days of when the Contract Time commences to run, but no Work shall be done at the Site prior to the date on which the Contract Time commences to run. CONTRACTOR shall notify the ENGINEER at least 3 working days in advance of the time he intends to start Work.

2.05 Preconstruction Meeting

- A. Within 10 days of the Effective Date of the Agreement and prior to the delivery of materials or the start of any construction, the CONTRACTOR shall request a Preconstruction Meeting from ENGINEER. A minimum of 3 full working days' notice shall be required.
- B. Prior to the scheduling of the Preconstruction Meeting, CONTRACTOR shall submit to ENGINEER for review:
 - 1. A preliminary Progress Schedule indicating the starting and completion dates of the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. A preliminary Schedule of Submittals which will list each required Submittal and the times for submitting, reviewing and processing such Submittal;
 - 3. An estimated monthly payment schedule, and a preliminary Schedule of Values for all of the Work.
- C. The Preconstruction Meeting will be held for review and acceptance of the schedules, to establish procedures for handling Shop Drawings and other Submittals, for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

2.06 Electronic Transmittals

- A. Except as otherwise stated elsewhere in the Contract, the OWNER, ENGINEER, and CONTRACTOR may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then OWNER, ENGINEER, and CONTRACTOR shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

Article 3 Contract Documents Intent and Reuse

3.01 Intent

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. ENGINEER will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon OWNER and CONTRACTOR, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between OWNER or ENGINEER and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations; or
 - 3. any obligation on the part of ENGINEER to CONTRACTOR.

3.02 Reference to Standards and Specifications of Technical Societies

- A. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, or Laws or Regulations in effect at the time of opening of Bids or, on the effective date of the Agreement if there were no Bids, except as may be otherwise specifically stated in the Contract Documents.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result shall be furnished and performed whether or not it is specifically called for.

- C. No provision of any standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, ENGINEER or any of ENGINEER's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.10 or any other provision of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

- A. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR has a duty to and shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR should reasonably have discovered and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby.
- B. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision 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 ENGINEER in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.18) until receiving written instruction or clarification from ENGINEER or OWNER. However, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.
- C. Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement issued by one of the methods indicated in paragraph 3.05, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and;
 - 1. the provisions of any standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - 2. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Requirements of Contract Documents

- A. During the performance of the Work and until final payment, CONTRACTOR and OWNER shall submit to the ENGINEER in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. ENGINEER will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. ENGINEER will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. ENGINEER's written clarification, interpretation, or decision will be final and binding on CONTRACTOR, unless it appeals by submitting a Change Proposal, and on OWNER, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve
 - 1. the performance or acceptability of the Work under the Contract Documents,
 - 2. the design (as set forth in the Drawings, Specifications, or otherwise), or
 - 3. other engineering or technical matters, then ENGINEER will promptly notify OWNER and CONTRACTOR in writing that ENGINEER is unable to provide a decision or interpretation. If OWNER and CONTRACTOR are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in paragraph 11.01.

3.05 Order of Precedence

- A. In resolving conflicts, errors or discrepancies between Plans and Specifications,
 - 1. figured dimensions shall govern over scaled dimensions;
 - 2. Plans shall govern over Standard Specifications;
 - 3. and Project Specifications shall govern over Standard Specifications and Plans.

3.06 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:
 - 1. a Field Order (pursuant to paragraph 9.05), or,
 - 2. a Change Order (pursuant to paragraph 10.01.A.1), or
 - 3. a Work Change Directive Order (pursuant to paragraph 10.01.A.2)
- B. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:
 - 1. a Field Order (pursuant to paragraph 9.05),
 - 2. ENGINEER's review of a Shop Drawing or Sample (pursuant to paragraph 6.21), or
 - 3. ENGINEER's written interpretation or clarification (pursuant to paragraph 9.04).

3.07 Reuse of Documents

- A. Neither CONTRACTOR nor any Subcontractor, manufacturer, fabricator, Supplier, distributor, or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER:
 - 1. shall have or acquire any title to or ownership rights in any of the Plans, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, and

2. they shall not reuse any of such Plans, Specification, other documents or copies on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

3.08 Electronic Data

- A. Except as otherwise stated elsewhere in the Contract Documents, OWNER, ENGINEER and CONTRACTOR may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information and graphics, including but not limited to Shop Drawings and other Submittals, in electronic media or digital format, either directly or through access to a secure Project website.
- B. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

Article 4 Availability of Lands; Subsurface and Physical Conditions; Reference Points

4.01 Availability of Lands

- A. OWNER shall furnish, as indicated in the Contract Documents and not later than the established date for beginning Work on the Contract, the lands upon which the Work is to be performed, rights of way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. OWNER shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment unless otherwise provided in the Contract Documents.

4.02 Subsurface and Physical Conditions; Investigations and Reports

- A. Reference is made to the Supplementary Conditions for identification of those reports of investigations and tests of subsurface and physical conditions at the Site or otherwise affecting cost, progress or performance of the Work which have been reviewed in preparation of the Contract Documents. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents.
- B. The locations of utilities or other physical conditions relating to existing surface or subsurface structures at or contiguous to the Site as shown on the Plans are taken from drawings from sources believed to be reliable. Neither the OWNER nor ENGINEER will be responsible for any omissions of, or variations from, the indicated location of existing utilities which may be encountered in the Work.
- C. CONTRACTOR shall draw its own conclusions as to the general accuracy of the "technical data" contained in such reports and drawings, and confirms such reports and drawings are not Contract Documents. CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

- a. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto, or
 - b. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or
 - c. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.
2. The cost of all the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for:
- a. reviewing and checking all such information and data,
 - b. locating all Utilities during construction,
 - c. coordination of the Work with the owners of such Utilities, and
 - d. the safety and protection of all such Utilities as provided in paragraph 6.15 and repairing any damage thereto resulting from the Work.

4.03 Unforeseen Physical Conditions

- A. A. If CONTRACTOR discovers one or both of the following physical conditions of surface or subsurface at the Project or improvement Site, before disturbing the physical condition, the CONTRACTOR shall immediately notify OWNER and ENGINEER of the physical condition; and follow up within 48 hours in writing:
 1. A subsurface or a physical condition at the Site differing materially from those indicated in the Contract Documents, or
 2. An unknown physical condition at the Site of a nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for the improvement project.
- B. ENGINEER's Review. After receipt of written notice as required by the preceding paragraph, ENGINEER will promptly review the subsurface or physical condition in question; determine the necessity of OWNER's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in paragraph 4.03.A above; obtain any pertinent cost or schedule information from CONTRACTOR; prepare recommendations to OWNER regarding the CONTRACTOR's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise OWNER in writing of ENGINEER's findings, conclusions, and recommendations.
- C. OWNER's Statement to CONTRACTOR Regarding Site Condition. After receipt of ENGINEER's written findings, conclusions, and recommendations, OWNER shall issue a written statement to CONTRACTOR (with a copy to ENGINEER) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting ENGINEER's written findings, conclusions, and recommendations, in whole or in part.

- D. Possible Price and Times Adjustments.
1. CONTRACTOR shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in paragraph 4.03.A;
 - b. with respect to Work that is paid for on a Unit Price basis, any adjustment in Contract Price will be subject to the provisions of paragraph 12.03; and
 - c. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times pursuant to paragraph 10.05.
 2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. CONTRACTOR knew of the existence of such condition at the time CONTRACTOR made a commitment to OWNER with respect to Contract Price and Contract times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such commitment; or
 - c. CONTRACTOR failed to give the written notice as required by paragraph 4.03.A.
 3. If OWNER and CONTRACTOR agree regarding CONTRACTOR's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order or Work Change Directive.
 4. CONTRACTOR may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after OWNER's issuance of the OWNER's written statement to CONTRACTOR regarding the subsurface or physical condition in question.

4.04 Utilities

- A. CONTRACTOR's Responsibilities. The information and data shown or indicated in the Contract Documents with respect to existing Utilities at or adjacent to the Site, if any, is based on information and data furnished to OWNER or ENGINEER by the owners of such Utilities, including OWNER, or by others.
1. OWNER and ENGINEER do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Utilities at the Site;
 - b. locating all Utilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including OWNER) of such Utilities, during construction; and
 - d. the safety and protection of all existing Utilities at the Site, and repairing any damage thereto resulting from the Work.
- B. Notice by CONTRACTOR. If CONTRACTOR believes that an Utilities that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.18), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER.
- C. ENGINEER's Review. ENGINEER will:
 1. promptly review the Utilities and conclude whether such Utilities was not shown or indicated in the Contract Documents,
 2. or was not shown or indicated with reasonable accuracy;
 3. obtain any pertinent cost or schedule information from CONTRACTOR;
 4. prepare recommendations to OWNER regarding the CONTRACTOR's resumption of Work in connection with the Utilities in question;
 5. determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Utilities;
 6. and advise OWNER in writing of ENGINEER's findings, conclusions, and recommendations.

During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.
- D. OWNER's Statement to CONTRACTOR Regarding Utilities. After receipt of ENGINEER's written findings, conclusions, and recommendations, OWNER shall issue a written statement to CONTRACTOR (with a copy to ENGINEER) regarding the Utilities in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting ENGINEER's written findings, conclusions, and recommendations in whole or in part.
- E. Possible Price and Times Adjustments:
 1. CONTRACTOR shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Utilities at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Utilities in question;
 - b. With respect to Work that is paid for on a Unit Price basis, any adjustment in Contract Price will be subject to the provisions of paragraph 12.03;
 - c. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times; and
 - d. CONTRACTOR gave the notice required in paragraph 4.04.B.
2. If OWNER and CONTRACTOR agree regarding CONTRACTOR's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. CONTRACTOR may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after OWNER's issuance of the OWNER's written statement to CONTRACTOR regarding the Underground Facility in question.

4.05 Reference Points

- A. OWNER shall provide engineering surveys for construction to establish property corners, monuments, bench marks and similar reference points which in his judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for the preservation of established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. Reference points destroyed by negligence of CONTRACTOR will be replaced by OWNER at the expense of CONTRACTOR. Construction Staking will be furnished by OWNER as provided in Division 01 of the Specifications.

4.06 Constituents of Concern

- A. OWNER shall be responsible for any Constituents of Concern uncovered or revealed at the Site which was not shown or indicated in Plans or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the Site. OWNER shall not be responsible for any such materials brought to the Site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.
- B. Upon discovering any such material, CONTRACTOR shall immediately:
 1. stop all Work in connection with such Hazardous Environmental Condition and in any area affected thereby (except in emergency as required by paragraph 6.18), and
 2. notify OWNER and ENGINEER (and thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such Hazardous Environmental Condition or take corrective action, if any.

- C. CONTRACTOR shall not be required to resume Work in connection with such Hazardous Environmental Condition or in any such affected areas until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice:
 - 1. specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or
 - 2. specifying any special conditions under which such Work may be resumed safely.
- D. If OWNER and CONTRACTOR cannot agree as to entitlement to, or the amount, or extent of an adjustment, if any, in Contract Price or Contract Terms as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a Claim therefor as provided in paragraph 11.01.
- E. If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such condition, or in such affected area, to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to, or the amount, or extent of an adjustment, if any, in Contract Price or Contract Time as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 11.01. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with paragraph 7.01.
- F. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents, other consultants and subcontractors of each and any of them from and against all claims, costs, losses, damages and expenses arising out of or resulting from such condition per this paragraph 4.06, provided that:
 - 1. any such claim, cost, loss or damage is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and
 - 2. nothing in this paragraph 4.06 shall obligate OWNER to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.
- G. The provisions of paragraph 4.03 are not intended to apply to the presence of Constituents of Concern or Hazardous Environmental Conditions uncovered or revealed at the Site.

Article 5 Bonds and Insurance

5.01 Performance and Other Bonds

- A. CONTRACTOR shall furnish performance and payment Bonds, on the form included in the Contract Documents, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until 1 year after the date when final payment becomes due, except as otherwise provided by Laws and Regulations or as specified in the Contract Documents or Bond. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions.

- B. All Bonds shall be in the forms prescribed by the Contract Documents and be executed by such Sureties as
 - 1. are licensed to conduct business in the state where the Project is located, and
 - 2. are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch.
- C. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.
- D. If Surety on any Bond furnished by CONTRACTOR is declared as bankrupt or becomes insolvent, or its right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of clauses (1) and (2) of paragraph 5.01, CONTRACTOR shall within 5 days thereafter substitute another Bond and Surety, both of which shall be acceptable to OWNER.

5.02 Licensed Insurers and Sureties

- A. Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required.

5.03 Insurance

- A. CONTRACTOR shall purchase and maintain during the term of the Project such insurance as will protect him, OWNER(s) and ENGINEER(s) from Claims arising out of the Work described in this Contract and performed by CONTRACTOR, Subcontractor(s) or Sub subcontractor(s) consisting of:
 - 1. Workers' Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation Statutes of the states in which Work is conducted under this Contract; disability benefit laws, if any; or Federal compensation acts such as U.S. Longshoremen or Harbor Workers', Maritime Employment, or Railroad Compensation Act(s), if applicable. Self-insurance plans approved by the regulatory authorities in the state in which Work on this Project is performed are acceptable.
 - 2. An occurrence form Commercial General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, plus appropriate endorsements to protect OWNER and ENGINEER against Claims, demands, and lawsuits from employees of CONTRACTOR and Subcontractors, including the following exposures:
 - a. All premises and operations.
 - b. Explosion, collapse and underground damage.
 - c. CONTRACTOR's Protective coverage for independent contractors or Subcontractors employed by him.

- d. Broad form blanket, contractual liability for the obligation assumed in the Indemnification or Hold Harmless agreement found in the General Conditions or Supplementary Conditions of this Contract.
 - e. Personal Injury Liability endorsement with no exclusions pertaining to employment.
 - f. Products and Completed Operations coverage. Coverage shall extend through the Contract guarantee period.
 - g. Broad form property damage.
 - h. Cross liability endorsement.
 - i. For design professional additional insureds, ISO Endorsement CG 20 32 04 13, "Additional Insured-Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
3. Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles. Comprehensive General Liability and the Comprehensive Auto Liability shall be written by the same insurance carrier, though not necessarily in one policy.
 4. CONTRACTOR shall purchase for OWNER an Owner's Protective Liability policy to protect OWNER, ENGINEER, their consultants, agents, employees and such public corporations in whose jurisdiction the Work is located for their liability for Work performed by the CONTRACTOR, the Subcontractor(s) or the Sub subcontractor(s) under this Contract.
 5. When a limit of liability is identified in the Supplementary Conditions, CONTRACTOR shall purchase a Builder's Risk Installation Floater in a form acceptable to OWNER covering property of the Project for the full cost of replacement as of the time of any loss which shall include, as named insureds,
 - a. CONTRACTOR,
 - b. all Subcontractors,
 - c. all Sub subcontractors,
 - d. OWNER, and ENGINEER(s) or Architect(s), as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this Contract, whether in place, stored at the Site, stored elsewhere, or in transit at the risk of the insured(s).

Coverage shall be effected on an "All Risk" form including, but not limited to, the perils of fire, wind, vandalism, collapse, theft, flood and earthquake, with removal of passive design error exclusion. Except as may otherwise be required by OWNER, CONTRACTOR may arrange for such deductibles as CONTRACTOR deems to be within CONTRACTOR's ability to self-assume, but CONTRACTOR will be held solely responsible for the amount of such deductible and for any co-insurance penalties. Any insured loss shall be adjusted with OWNER and CONTRACTOR and paid to OWNER and CONTRACTOR as Trustee for the other insureds.

6. Umbrella or Excess Liability
 - a. The CONTRACTOR is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to CONTRACTOR's General Liability and Automobile Liability Insurance and shall be written on an occurrence basis.
 7. Railroad Protective Liability
 - a. Where any of the Work is within a railroad right-of-way or where a limit of liability is identified in the Supplementary Conditions, CONTRACTOR will provide coverage in the name of each railroad company having jurisdiction over rights of way across which Work under the Contract is to be performed. The form of policy and the limits of liability shall be determined by the railroad company(ies) involved. See the Supplementary Conditions for limits and coverage requested.
 8. CONTRACTOR's Professional Liability Insurance
 - a. If CONTRACTOR will provide or furnish professional services under this Contract through a delegation of professional design services or otherwise, then CONTRACTOR shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against Claims arising out of performance of professional design or related services caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by CONTRACTOR itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- B. OWNER's responsibilities in respect of purchasing and maintaining insurance are set forth below:
1. OWNER shall assume responsibility for such boiler and machinery insurance as may be required or considered to be necessary by OWNER in the course of construction, testing or after completion.
 - a. OWNER shall assume responsibility for such insurance as will protect the OWNER against any loss of use of OWNER's property due to those perils insured pursuant to paragraph 1 above.

5.04 Limits of Liability

- A. The required limits of liability for insurance coverages required in paragraphs 5.03 shall be not less than those specified in the Supplementary Conditions.

5.05 Notice of Cancellation or Intent Not to Renew

- A. Policies will be endorsed to provide that at least 30 days written notice shall be given to OWNER and to ENGINEER of cancellation, intent not to renew, or material modification of the coverage.

5.06 Evidence of Coverage

- A. Prior to commencement of the Work, CONTRACTOR shall furnish to OWNER and ENGINEER, Certificates of Insurance in force on current Accord® Certificate of Insurance form. Other forms of Certificate are acceptable only if;
 - 1. they include all of the items prescribed in the current Accord® Certificate of Insurance form, including agreement to cancellation provisions outlined in paragraph 5.05 above; and
 - 2. they have approval of OWNER and ENGINEER.
- B. Prior to the commencement of the Work, CONTRACTOR shall furnish to OWNER complete "originally signed" copies of the Owner's Protective Liability Policy. The number of copies shall be the same as the number of counterparts of the Agreement. OWNER reserves the right to request complete copies of other policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "Originally Signed Copies," and so designated.

5.07 Qualification of Insurers

- A. In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the state in which the Project is located and shall have a financial rating not lower than XI and a policyholder's service rating no lower than B+ as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than B+:XI will be acceptable only upon written consent of OWNER.

5.08 Damage Claims - Acknowledgment and Reports

- A. CONTRACTOR shall furnish to OWNER an acknowledgment receipt from the insurance carrier for each damage claim against the Project. The receipt shall include the insurance carrier's assigned claim number.
- B. Upon request, CONTRACTOR or his insurance carrier shall also furnish to OWNER a status report on all damage claims. This report shall include inspections made, the disposition of claims, and what action has been taken towards settlement of each claim.
- C. Failure of CONTRACTOR to comply with this paragraph 5.08 may result in the amount of such damage claims being withheld from CONTRACTOR's monthly pay estimate. Such withholding shall be reimbursed in the monthly pay estimate following compliance with this paragraph.

5.09 Cost of Insurance

- A. The unit cost of the insurance herein specified will not be a specific bid item, but the cost of such insurance will be included by the CONTRACTOR in the various prices bid.

5.10 Waiver of Rights

- A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.03 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants (and all other persons or entities identified in the Supplementary General Conditions to be listed as insureds or additional insureds in such policies) and will provide primary coverage for all losses and damages caused by the perils covered thereby. Such policies shall contain provisions to

the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder.

- B. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary General Conditions to be listed as insureds or additional insureds under such policies for loss and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11 Receipt and Application of Insurance Proceeds

- A. Any insured loss under the policies of insurance required by paragraph 5.03.A.5 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause. If no other special agreement is reached the damaged Work shall be repaired or replaced, the monies so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order, Field Order or Work Change Directive.
- B. OWNER as fiduciary shall have power to adjust and settle any loss under the policies required by paragraph 5.03.A.5 with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers.

Article 6 Contractor's Responsibilities

6.01 Supervision and Superintendence

- A. CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to see that the finished Work complies with the Contract Documents. However, if specific means, methods, techniques, sequences and procedures of construction are prescribed in the Plans or Specifications, CONTRACTOR shall be responsible to comply therewith, but may implement such prescribed Work in a manner of CONTRACTOR's choosing so long as the Work complies with the requirements of the Plans and Specifications.
- B. At all times during the progress of the Work, CONTRACTOR shall assign and maintain a competent superintendent who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. Any superintendent or foreman who neglects to have Work done in accordance with the Plans and Specifications shall be removed from the Project. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

6.02 Labor and Working Hours

- A. CONTRACTOR shall provide competent, suitably qualified personnel in their various duties. CONTRACTOR shall at all times maintain good discipline and order at the Site. Except as otherwise required for the safety or protection of persons, the Work, property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the Site shall be performed during regular working hours (7:00 a.m. to 7:00 p.m.), and CONTRACTOR will not permit the performance of Work on Sunday or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER.

6.03 Services, Materials and Equipment

- A. Unless otherwise specified in the Contract Documents, CONTRACTOR shall furnish and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start up and completion of the Work.
- B. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Contract Documents shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence, (including reports of required tests) as to the kind and quality of materials and equipment to be incorporated in the Work. The CONTRACTOR shall not use material in the Work until Shop Drawing or Submittals have been reviewed by the ENGINEER. All materials which do not meet the requirements of the Specifications at the time they are to be used will be rejected, and unless otherwise permitted by ENGINEER, shall be plainly marked and removed immediately from the Work.
- C. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, Supplier or distributor, except as otherwise provided in the Contract Documents.

6.04 Substitutes and "Or-Equals"

Whenever an item of materials or equipment is specified or described in the Contract Documents for installation in the Work by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor; or means, methods, techniques, sequences and procedures of construction are prescribed in the Plans or Specifications; the specification or description is intended to establish the type, function and quality required or the means, methods, techniques, sequences and procedures of construction required. Unless the specification or description contains or is followed by words indicating that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment or materials or equipment of other manufacturers, fabricators, suppliers or distributors; or other means, methods, techniques, sequences and procedures of construction may be accepted by ENGINEER under the following circumstances:

1. "Or-Equal": If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.
 2. Substitute Items: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.04.A; or a proposed means, methods, techniques, sequences and procedures of construction are different from what is prescribed in the Plans or Specifications, it will be considered a proposed substitute item.
- B. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment or means, methods, techniques, sequences and/or procedures proposed is essentially equivalent to that named and an acceptable substitute therefor. The procedure for review by the ENGINEER will include the following, as supplemented in the Specifications, and as ENGINEER may decide is appropriate under the circumstances. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.
- C. If CONTRACTOR wishes to furnish or use a substitute, CONTRACTOR shall make written application to ENGINEER on the Substitution Request Form provided for acceptance thereof, certifying that the proposed substitute will:
1. perform adequately the functions and achieve the results called for by the general design,
 2. be similar in substance to that specified,
 3. and be suited to the same use and capable of performing the same function as that specified.

The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the proposed substitute for use in the Work will require a change in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute, and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.

- D. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service shall be indicated. The application shall also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute.

- E. All data to be provided by CONTRACTOR in support of any proposed “or-equal” or substitute item will be at CONTRACTOR’s expense. ENGINEER will be the sole judge of acceptability, and ENGINEER’s determination shall be final and binding, may not be reversed through an appeal under any provisions of the Contract Documents, and no “or-equal” or substitute shall be ordered, installed or utilized without ENGINEER’s prior written acceptance. OWNER may require CONTRACTOR to furnish at CONTRACTOR’s expense a special performance guarantee or other surety with respect to any “or-equal” or substitute which has been approved by ENGINEER.
- F. ENGINEER will record time required by ENGINEER and ENGINEER’s consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER’s consultants for evaluating any proposed substitute and in making any changes in the Contract Documents resulting therefrom.

6.05 Concerning Subcontractors

- A. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organizations, including those who are to furnish the principal items of materials or equipment, whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall furnish ENGINEER a complete list of any Subcontractor, Supplier or other person or organization furnishing principal items of material or equipment within 4 days of request. Failure to object to any Subcontractor, Supplier, other person or organization by OWNER or ENGINEER shall not constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.
- B. If OWNER or ENGINEER, after due investigation, has reasonable objection to any Subcontractor, Supplier, other person or organization proposed by CONTRACTOR after the Notice of Award, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order shall be issued. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.
- C. The CONTRACTOR shall not award Work to Subcontractor(s), in excess of 50% of the Contract Price, without prior written approval of the OWNER.

CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors, Suppliers and of persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR’s own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor, Supplier or other person or organization. OWNER or ENGINEER may furnish to any Subcontractor, Supplier or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done.

- D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.
- E. If the amount of the subcontract or the nature of the Work to be performed thereunder warrants, OWNER may require Subcontractor to furnish, for the benefit of OWNER and CONTRACTOR jointly, Bonds in an amount proportioned to the amount of his subcontract, and for the same purpose and under the same specifications as those of the general Contract. The Surety on the general Contract shall not be eligible to furnish such Subcontract Bonds.
- F. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as and additional insured on the property insurance provided in paragraph 5.03.A.5, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same. CONTRACTOR shall file a true copy of such agreement with OWNER.

6.06 Patent Fees and Royalties

- A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall defend, indemnify and hold harmless OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, costs, losses, damages and expenses arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

6.07 Permits and Licenses

- A. CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges, permit, review, and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work.

6.08 Laws and Regulations

- A. CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to furnishing and performance of the Work. Neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws, ordinances, rules, and Regulations.
- B. If CONTRACTOR performs any Work that is contrary to such laws, ordinances, rules and regulations, CONTRACTOR shall bear all claims, costs, losses, damages and expenses caused by, arising out of, or resulting therefrom. However, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Plans are in accordance with such laws, ordinances, rules, and regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.
- C. OWNER or CONTRACTOR may give notice to the other party of any changes after the submission of CONTRACTOR's Bid (or after the date when CONTRACTOR became bound under a negotiated Contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount, or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice CONTRACTOR may submit a Change Proposal, or OWNER may initiate a Claim.

6.09 Taxes

- A. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.10 Use of Premises

- A. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project Site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights of way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area or to the owner or occupant thereof or of any adjacent land or areas resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with any such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR's continuing obligations under paragraph 6.24 shall be applicable to any claim hereunder.

6.11 Removal of Debris and Cleaning

- A. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the Site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall restore to their original condition all property not designated for alteration by the Contract Documents. If CONTRACTOR shall fail to keep the above noted areas cleaned of dust or debris resulting from CONTRACTOR's operations, CONTRACTOR shall be so notified in writing by ENGINEER. If within 24 hours after receipt of such notice CONTRACTOR shall fail to clean such areas satisfactorily, OWNER may have such other agency as he shall designate, perform the work and all costs of such cleaning shall be paid for by CONTRACTOR.

6.12 Loading Structures

- A. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.13 Protection of Utilities

- A. When it is possible for construction operations to endanger any public or private utility, conduit, or structure, CONTRACTOR shall notify the utility owner of this possibility, and safeguard and support such utilities, conduits, or structures. Where it is the policy of any utility owner to make its own repairs to damaged conduit or other structures, CONTRACTOR shall cooperate to the fullest extent with the utility, and he shall see that his operations interfere as little as possible with these operations, and CONTRACTOR shall assume the cost of any charge against OWNER therefor. In cases where existing Utilities or Utility service connections are encountered, CONTRACTOR shall perform his operations in such a manner that service will be uninterrupted, and the cost thereof shall be at CONTRACTOR's expense, unless otherwise provided.

6.14 Record Documents

- A. CONTRACTOR shall maintain in a safe place at the Site 1 record copy of all Specifications, Plans, Addenda, Change Orders, Work Change Directives, and Field Orders, in good order and annotated to show all changes made during construction. These record documents together with all Samples and all Shop Drawings shall be available to ENGINEER for examination and shall be delivered to ENGINEER for OWNER upon completion of the Work.

6.15 Safety and Protection

- A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
1. all persons on the Work Site or who may be affected by the Work,
 2. all the Work and materials or equipment to be incorporated therein, whether in storage on or off the Site, and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and Utilities and not designated for removal, relocation or replacement in the course of construction.
- B. CONTRACTOR shall comply with all applicable Laws and Regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property, Utilities, and utility owners when prosecution of the Work may affect them.
 - C. CONTRACTOR shall restore, at his own expense, any public or private property damaged or injured in consequence of any act or omission on his part, or on the part of his employees or agents, to a condition equal or better than that existing before such injury or damage was done. If CONTRACTOR neglects to restore or make good such damages or injury, OWNER may, upon 48 hours' notice, proceed to restore or make good such damage or injury and to order the cost thereof deducted from any monies that are due, or may become due, to CONTRACTOR for this Work.
 - D. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.11 that the Work is Acceptable.
 - E. CONTRACTOR shall comply with the applicable requirements of OWNER's safety programs, if any. Any OWNER's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
 - F. CONTRACTOR shall inform OWNER and ENGINEER of the specific requirements of CONTRACTOR's safety program with which OWNER's and ENGINEER's employees and representatives must comply while at the Site.
 - G. CONTRACTOR's duties and responsibilities for safety and protection will continue until all the Work is completed, ENGINEER has issued a written notice to OWNER and CONTRACTOR in accordance with paragraph 14.11 that the Work is acceptable, and CONTRACTOR has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
 - H. CONTRACTOR's duties and responsibilities for safety and protection will resume whenever CONTRACTOR or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

6.16 Safety Representative

- A. CONTRACTOR shall be responsible to designate for itself and its employees, and its Subcontractors a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.17 Hazard Communication Program

- A. CONTRACTOR shall be responsible for coordinating any exchange of safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with applicable Laws or Regulations.

6.18 Emergencies

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued to document the consequences of such action.

6.19 Shop Drawings and Samples

- A. CONTRACTOR shall submit Shop Drawings required by the Contract Documents to ENGINEER for review, in accordance with an accepted schedule. All Submittals will be identified as ENGINEER may require and in the number of copies specified in the Specifications. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show ENGINEER the materials and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.21.
- B. CONTRACTOR shall also submit all samples required by the Contract Documents to ENGINEER for review in accordance with an accepted schedule. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, the use for which intended, and other data as ENGINEER may require to enable ENGINEER to review the Submittal for the limited purposes required by paragraph 6.21. The number of each sample to be submitted will be as specified in the Specifications.

6.20 Submittal Procedures

- A. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:
 - 1. all field measurements, quantities, dimension, specified performance criteria, installation requirements, manufacturer's recommendations, material, catalog numbers and similar information with respect thereto,
 - 2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and
 - 3. all information relative to CONTRACTOR's responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- B. CONTRACTOR shall have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
- C. Each Submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to review and approval of that Submittal.

- D. At the time of each submission, CONTRACTOR shall in writing call ENGINEER's attention to any deviations that the Shop Drawings or Samples may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to ENGINEER for review of each such variation.
- E. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous Submittals.
- F. CONTRACTOR shall furnish required Submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. ENGINEER will record ENGINEER's time for reviewing a fourth or subsequent submittal of Shop Drawings, sample, or other item requiring approval, and CONTRACTOR shall be responsible for ENGINEER's charges to OWNER for such time. OWNER may impose a set-off against payments due to CONTRACTOR to secure reimbursement for such charges.
- G. If CONTRACTOR requests a change of a previously approved Submittal item, CONTRACTOR shall be responsible for ENGINEER's charges to OWNER for its review time, and OWNER may impose a set-off against payments due to CONTRACTOR to secure reimbursement for such charges, unless the need for such change is beyond the control of CONTRACTOR.

6.21 Engineer's Review

- A. ENGINEER will review Shop Drawings and Samples in accordance with the Schedule of Submittals accepted by ENGINEER as required by paragraph 2.05. ENGINEER's review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions.
- B. ENGINEER's review of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variations from the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to such variation at the time of submission and ENGINEER has given written concurrence to the specific variation, nor shall any concurrence by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings. ENGINEER's review shall not relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.20.
- C. Where a Shop Drawing or sample is required by the Contract Documents or the Schedule of Submittals accepted by ENGINEER per paragraph 2.05, no related Work shall be commenced until the Submittal has been reviewed by the ENGINEER.

6.22 Continuing the Work

- A. CONTRACTOR shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as CONTRACTOR and OWNER may otherwise agree in writing.

6.23 Contractor's General Warranty and Guarantee

- A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee excludes defects or damage caused by:
1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or their employees, agents, or representatives, or any person or entity for whom CONTRACTOR is responsible; or
 2. normal wear and tear under normal usage.
- B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:
1. observations by ENGINEER;
 2. recommendation of any progress or final payment by ENGINEER;
 3. the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;
 4. use or occupancy of any part of the Work by OWNER;
 5. any acceptance by OWNER or failure to do so;
 6. any review or approval of a Shop Drawing or Sample Submittal or the issuance of a notice of acceptability by ENGINEER per paragraph 14.11;
 7. any inspection, test or approval by others; or
 8. any correction of defective Work by OWNER.
- C. If Contract requires the CONTRACTOR to accept the assignment of a contract entered into by OWNER, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to CONTRACTOR's performance obligations to OWNER for the Work described in the assigned Contract.
- D. CONTRACTOR shall assign to OWNER all warranties extended to CONTRACTOR by material Suppliers and Subcontractors. If an assignment of warranty requires the material Supplier or Subcontractor to consent to same, then CONTRACTOR shall secure the material Supplier's or Subcontractor's consent to assign said warranties to OWNER.
- E. The warranties provided in this section shall be in addition to, and not in limitation of, any other warranty or remedy required by law.

6.24 Indemnification

- A. To the fullest extent permitted by law, CONTRACTOR shall indemnify, defend (with counsel acceptable to OWNER) and hold harmless OWNER, ENGINEER and any additional indemnitees identified in the Supplementary Conditions and their respective directors, officers, members, partners, affiliates, employees, agents and successors, from and against any and all liabilities, claims, causes of action, lawsuits, liens, injuries, damages, losses and expenses (collectively "Demands") to the extent caused by, arising out of, resulting from or occurring in connection with:

1. CONTRACTOR's breach of, or failure to comply with, the Agreement, the Contract Documents, or any other contract that it enters into regarding the Work, including any default in performance; or
 2. Personal injury or death to any person (including, but not limited to, CONTRACTOR, CONTRACTOR's employees, Subcontractors, Subcontractors' employees, and material Suppliers) or injury to or destruction of property (including claims for loss of use) caused by, arising out of, resulting from, or in any way connected with
 - a. the Work,
 - b. any activity associated with the Work, or
 - c. the operations or acts of commission or omission of CONTRACTOR, CONTRACTOR's employees, Subcontractors, Subcontractors' employees, material suppliers, or anyone for whom CONTRACTOR is legally liable in the performance of Work, whether arising before or after completion of the Work.
- B. To the extent caused by, arising out of, resulting from, or occurring in connection with the provisions of the above paragraph 6.24.A, CONTRACTOR's indemnity obligations under this Agreement shall include, but are not limited to:
1. Indemnity for all damages and judgment interest, all costs and fees, including, but not limited to, all defense costs, expenses and actual attorneys' fees, and all settlement payments relating to, arising out of, resulting from or in any way connected with any demand requiring indemnity by this Agreement;
 2. All expenses, including but not limited to, costs, expenses and actual attorneys' fees, incurred in securing and enforcing indemnity from CONTRACTOR if CONTRACTOR fails or refuses promptly to fulfill any of the indemnity obligations under this Agreement;
 3. All indemnification obligations imposed upon OWNER or ENGINEER, or both, arising out of or in connection with the Work; and
 4. Indemnification for any penalties and/or fines arising or resulting from CONTRACTOR's or any SUBCONTRACTOR's failure to comply with laws and/or regulations applicable to its/their Work.
- C. Contractor's duty to indemnify under Subpart A.2. of Article 6.24 is limited to the negligence of Contractor, Contractor's employees, Subcontractors, Subcontractor's employees, material Suppliers, or anyone for whom Contractor is legally liable in the performance of the Work, whether arising before or after the completion of the Work.
- D. The indemnification rights under this Agreement shall not be construed to negate, abridge, or otherwise reduce any other right or obligations of indemnity which would otherwise exist.
- E. OWNER, at its option, may select counsel to defend any demand brought against it without impairing any obligation of the CONTRACTOR to provide indemnification.
- F. The indemnification provisions under this Agreement shall survive the completion or termination of this Agreement.

- G. In the case of claims by any employee of CONTRACTOR, anyone directly or indirectly employed by CONTRACTOR, or anyone for whose acts CONTRACTOR may be liable, the indemnification obligations under this Agreement shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR under workers' compensation acts. Such obligations shall not be construed to negate, abridge or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Agreement.
- H. Indemnification, additional insured and hold harmless obligations of CONTRACTOR and Subcontractor under the Contract Documents shall survive the termination of this Agreement.
- I. CONTRACTOR and Subcontractors will compel their insurance company to waive subrogation against OWNER, all ENGINEERS and all CONTRACTORS and Subcontractors identified as additional insureds in the Contract Documents, including any municipal entity now existing or newly created during the term of the Contract Documents.

6.25 Delegation of Professional Design Services

- A. CONTRACTOR will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out CONTRACTOR's responsibilities for construction means, methods, techniques, sequences or procedures. CONTRACTOR shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, equipment, structures, means, methods, techniques or sequences of construction are specifically required of CONTRACTOR by the Contract Documents, OWNER and ENGINEER will specify all performance and design criteria that such services must satisfy. CONTRACTOR shall cause such services or certifications to be provided by a professional properly licensed in the state in which the project is located, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other Submittals prepared by such professional. Shop Drawings and other Submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to ENGINEER.
- C. OWNER and ENGINEER shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals.
- D. Pursuant to this paragraph 6.25, ENGINEER's review or approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. ENGINEER's review or approval of Shop Drawings and other Submittals (except design calculations and design drawings) will be only for the purpose stated in paragraph 6.21.
- E. CONTRACTOR shall not be responsible for the adequacy of the performance or design criteria specified by OWNER or ENGINEER.

Article 7 Work by Others

7.01 Related Work at Site

- A. In addition to and apart from the Work under the Contract Documents, the OWNER may perform other work at or adjacent to the Site. Such other work may be performed by OWNER's employees, or through contracts between the OWNER and third parties. OWNER may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If any part of CONTRACTOR's Work depends on proper execution or results upon the work of any such other contractor or utility owner, CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such other work that render it unavailable, or unsuitable for such proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report shall constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.
- C. CONTRACTOR shall afford each contractor who is party to such a direct contract, and each utility owner, (and OWNER, if OWNER is performing the additional work with OWNER's employees), proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting and patching of CONTRACTOR's Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected.
- D. If the performance of additional work by other contractors, utility owner, or OWNER was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work by OWNER or others involves additional expense to CONTRACTOR, or requires an extension of the Contract Time, CONTRACTOR may make a Claim therefor as provided in paragraph 11.01. Claims for delay or inconveniences due to operations of such other parties for work noted in the Contract Documents will not be allowed.

Article 8 Owner's Responsibilities

8.01 Communication to Contractor

- A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 Replacement of Engineer

- A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 Furnishing Data

- A. OWNER shall furnish the data required of OWNER under the Contract Documents promptly.

8.04 Pay When Due

- A. OWNER shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.05 and 14.11.

8.05 Lands and Easements; Reports and Tests

- A. OWNER's duties in respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of investigations and tests of subsurface and latent physical conditions at the Site.

8.06 Change Orders

- A. In connection with OWNER's rights to request changes in the Work in accordance with Article 10, OWNER (especially in certain instances as provided in paragraph 10.01) is obligated to execute Change Orders.

8.07 Inspections, Tests, and Approvals

- A. OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.02.

8.08 Limitation on Owner's Responsibility

- A. OWNER shall not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.09 Undisclosed Hazardous Materials

- A. OWNER's responsibility in respect of undisclosed Constituents of Concern uncovered or revealed at the Site is set forth in paragraph 4.06.

8.10 Owner'S Designated Representative

- A. OWNER shall designate a person to act as its representatives during the performance of the Work. OWNER's designated representative will attend meetings and perform on behalf of OWNER all obligations required of OWNER under the provisions of the Contract Documents.

Article 9 Engineer's Status During Construction

9.01 Owner's Representative

- A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER'S representative during construction shall be as set forth in the Contract Documents.

9.02 Visits to Site

- A. ENGINEER may make visits to the Site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work, and to determine solely for the benefit of OWNER, in general, if the Work is proceeding in accordance with the technical requirements of the Contract Documents. It will not be the responsibility of ENGINEER to make exhaustive or continuous on Site inspections to check the quality or quantity of the Work.

9.03 Resident Project Representative

- A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more continuous observation of the Work. A Resident Project Representative will act as directed by and under the supervision of ENGINEER and will confer with ENGINEER regarding his actions. Resident Project Representative's dealings in matters pertaining to the on Site Work shall in general be only with ENGINEER and CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of CONTRACTOR. The Resident Project Representative's duties and responsibilities include:
1. Schedules
 - a. Review the Progress Schedule, Schedule of Submittals and Schedule of Values prepared by CONTRACTOR.
 2. Conferences
 - a. Arrange a schedule of progress meetings and other job conferences as required in consultation with ENGINEER and OWNER, and notify those expected to attend in advance.
 3. Liaison
 - a. Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist him in understanding the intent of the technical aspects of the Contract Documents. Assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on Site operations.
 4. Shop Drawings and Samples
 - a. Advise ENGINEER and CONTRACTOR, or CONTRACTOR's superintendent, immediately of the commencement of any Work requiring a Shop Drawing or Sample submission if the submission was identified on the schedule and has not been reviewed by ENGINEER.
 5. Review of Work, Rejection of Defective Work, Inspections, and Tests:
 - a. Conduct on Site observations of the Work and report to ENGINEER whenever Resident Project Representative believes that technical aspects of any executed Work is unsatisfactory, faulty or defective or does not meet the requirements of any inspections, tests or approval required to be made or has been damaged prior to final payment; and advise ENGINEER when Resident Project Representative believes that any partially completed portion of the Work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
 - b. Observe, record and report to ENGINEER appropriate details relative to test procedures and startups.
 - c. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections and report to ENGINEER.

6. Modifications
 - a. Consider CONTRACTOR's suggestions for modifications in Plans or Specifications and report them to ENGINEER.
7. Reports
 - a. Prepare periodic reports as required of progress of the Work and CONTRACTOR's compliance with the approved Progress Schedule and Schedule of Submittals.
8. Completion
 - a. Verify that all items on final list of items requiring completion or correction have been completed or corrected and make recommendations to ENGINEER concerning acceptance.
9. Exceptions
 - a. Resident Project Representative:
 - (1) Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
 - (2) Shall not approve or accept any portion of the completed Work.
 - (3) Shall not undertake any of the responsibilities of CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the Work.
 - (4) Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
 - (5) Shall not advise on or issue directions as to safety precautions and programs in connection with the Work.
 - (6) Shall not advise on or issue directions regarding CONTRACTOR's failure to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

9.04 Clarifications and Interpretations

- A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

9.05 Authorized Variations in Work - Field Order

- A. ENGINEER may authorize minor adjustments in the Work to avoid obstructions or interferences which do not involve an adjustment in the Contract Price or the Contract Time, and which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and shall be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly. If OWNER or CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a request for a Change Proposal may be made therefore as provided in paragraph 10.06 or a Claim may be submitted as set forth in paragraph 11.01.

9.06 Rejecting Defective Work

- A. ENGINEER will have authority to disapprove or reject completed portions of the Work which ENGINEER believes to be defective and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed or completed.

9.07 Shop Drawings, Change Orders, and Payments

- A. ENGINEER's responsibility for Shop Drawings and samples are set forth in paragraphs 6.19 through 6.21 inclusive.
- B. ENGINEER's responsibilities as to Change Orders are set forth in Articles 10, 11, and 12.
- C. ENGINEER's responsibilities in respect of Applications for Payment are set forth in Article 14.

9.08 Determinations for Unit Price Work

- A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.06.

9.09 Decisions on Disagreements, Claims

- A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work performed thereunder. Claims, disputes and other matters relating to the acceptability of the Work, or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work, shall be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph 9.09.
- B. ENGINEER will, with reasonable promptness, render a written decision on the issue referred. If OWNER or CONTRACTOR believe that any such decision entitles them to an adjustment in the Contract Price, or Contract Times, or both, a Claim may be made under paragraph 11.01.
- C. ENGINEER's written decision on the issue referred will be final and binding on OWNER and CONTRACTOR, subject to the provisions of paragraph 11.01.
- D. In this capacity ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.10 Limitations on Engineer's Responsibilities

- A. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents, nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority, shall give rise to any duty or responsibility of ENGINEER to OWNER or CONTRACTOR, any Subcontractor, any manufacturer, fabricator, Supplier, distributor, surety, or any other person, employee, or agent of any of them.

- B. ENGINEER will not supervise, direct, control or have authority over, or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents. These limitations on authority and responsibility shall also apply to ENGINEER's Consultant's, Resident Project Representative and assistants.
- C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, Supplier, or of any other individual or entity performing any of the Work.
- D. ENGINEER will not be responsible to CONTRACTOR or any Subcontractor, or Supplier, or to their agents or employees for injuries, damages, claims, losses, or expenses (including attorney's fees) of whatsoever kind resulting from or caused by any act or omission of ENGINEER in preparation for, arising from, relating to, or concerning the Project. Such acts or omissions include, but are not limited to, ENGINEER's negligence, tortuous conduct, errors, omissions, strict liability, breach of contract, or breach of warranty. ENGINEER makes no representations to CONTRACTOR, Subcontractors, Suppliers or their agents or employees regarding or respecting any work performed by ENGINEER in preparation for, arising from, relating to, or concerning the Project.
- E. Neither CONTRACTOR, its agents or employees, nor any Subcontractors or Suppliers or their agents or employees, are intended beneficiaries of ENGINEER's agreement with OWNER, nor are such parties intended beneficiaries of ENGINEER's duties or responsibilities arising therefrom. ENGINEER disclaims all duties to CONTRACTOR, Subcontractors, Suppliers or their agents or employees arising from, relating to, or concerning ENGINEER's involvement in the Project. OWNER and CONTRACTOR further agree to notify all CONTRACTOR's, Subcontractors or Suppliers of this disclaimer of ENGINEER's liability and require them to abide by this disclaimer.

Article 10 Amending the Contract Documents; Changes in the Work

10.01 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. Change Orders:
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. OWNER and CONTRACTOR may amend those terms and conditions of the Contract Documents that do not involve;
 - (1) the performance or acceptability of the Work,
 - (2) the design (as set forth in the Drawings, Specifications, or otherwise), or

- (3) other engineering or technical matters, without the recommendation of ENGINEER. Such an amendment shall be set forth in a Change Order.
2. Work Change Directives.
 - a. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including paragraph 10.04 regarding change of Contract Price.
 - b. CONTRACTOR must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the issuance of the Work Change Directive.
 - c. OWNER must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
3. Field Orders.
 - a. ENGINEER may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on OWNER and CONTRACTOR, which shall perform the Work involved promptly.
 - b. If CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, CONTRACTOR shall submit a Change Proposal as provided herein.

10.02 Owner-Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by ENGINEER's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if OWNER and CONTRACTOR have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive.
- B. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph 10.02 shall obligate CONTRACTOR to undertake work that CONTRACTOR reasonably concludes cannot be performed in a manner consistent with CONTRACTOR's safety obligations under the Contract Documents or Laws and Regulations.

10.03 Unauthorized Changes in the Work

- A. 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, except in the case of an emergency as provided in paragraph 6.18 or in the case of uncovering Work as provided in paragraph 13.03.

10.04 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of paragraph 10.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of paragraph 11.01.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by Unit Prices contained in the Contract Documents, then by application of such Unit Prices to the quantities of the items involved (subject to the provisions of paragraph 12.03); or
 - 2. where the Work involved is not covered by Unit Prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 10.04.C.2); or
 - 3. where the Work involved is not covered by Unit Prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in paragraph 12.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 10.04.C).
- C. CONTRACTOR's Fee: When applicable, the CONTRACTOR's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under paragraph 12.01.B.1 and 12.01.B.2, the CONTRACTOR's fee shall be 15 percent;
 - b. for costs incurred under paragraph 12.01.B.3, the CONTRACTOR's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraphs 10.04.C.2.a and 10.04.C.2.b is that the CONTRACTOR's fee shall be based on:
 - (1) a fee of 15 percent of the costs incurred under paragraphs 12.01.B.1 and 12.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and

- (2) with respect to CONTRACTOR itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor;

provided, however, that for any such subcontracted work the maximum total fee to be paid by OWNER shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

- d. no fee shall be payable on the basis of costs itemized under paragraphs 12.01.B.4, 12.01.B.5, and 12.01.C;
- e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to 5 percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 10.04.C.2.a through 10.04.C.2.e, inclusive.

10.05 Change of Contract Times

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of paragraph 10.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of paragraph 11.01.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in paragraph 12.04, concerning delays in CONTRACTOR's progress.

10.06 Change Proposals

- A. CONTRACTOR shall submit a Change Proposal to ENGINEER to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by ENGINEER concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seeking other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only 1 issue, or a set of closely related issues.
 - 1. Procedures. CONTRACTOR shall submit each Change Proposal to ENGINEER promptly (but in no event later than 5 days) after the start of the event giving rise thereto, or after such initial decision. CONTRACTOR shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any) to ENGINEER and OWNER within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which CONTRACTOR believes it is entitled as a result of said event. ENGINEER will advise OWNER regarding the

Change Proposal and consider any comments or response from OWNER regarding the Change Proposal.

2. ENGINEER's Action. ENGINEER will review each Change Proposal and, within 30 days after receipt of the CONTRACTOR's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to OWNER and CONTRACTOR. If ENGINEER does not take action on the Change Proposal within 30 days, then either OWNER or CONTRACTOR may at any time thereafter submit a letter to the other party indicating that as a result of the ENGINEER's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under paragraph 11.01.
 3. Binding Decision. ENGINEER's decision will be final and binding upon OWNER and CONTRACTOR, unless OWNER or CONTRACTOR appeals the decision by filing a Claim under paragraph 11.01.
- B. Resolution of Certain Change Proposals: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then ENGINEER will notify the parties that the ENGINEER is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and CONTRACTOR may choose to seek resolution under the terms of paragraph 11.01.

10.07 Execution of Change Orders

- A. OWNER and CONTRACTOR shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the Parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an OWNER set-off, unless CONTRACTOR has duly contested such set-off;
 3. changes in the Work which are:
 - a. ordered by OWNER pursuant to paragraph 10.02,
 - b. required because of OWNER's acceptance of defective Work under paragraph 13.08 or OWNER's correction of defective Work under paragraph 13.09, or
 - c. agreed to by the parties, subject to the need for ENGINEER's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under paragraph 10.06, or Article 16.
- B. If OWNER or CONTRACTOR refuses to execute a Change Order that is required to be executed under the terms of this paragraph 10.07, it shall be deemed to be of full force and effect, as if fully executed.

10.08 Notification to Surety

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

Article 11 Claims

11.01 Claims

- A. Claims Process: The following disputes between OWNER and CONTRACTOR shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by OWNER or CONTRACTOR of ENGINEER's decisions regarding Change Proposals;
 - 2. OWNER demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that ENGINEER has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. Submittal of Claim: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 10 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the ENGINEER, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by CONTRACTOR seeking an increase in the Contract Times or Contract Price, or both, CONTRACTOR shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of CONTRACTOR's knowledge and belief the amount of time or money requested accurately reflects the full amount to which CONTRACTOR is entitled.
- C. Review and Resolution: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to ENGINEER.
- D. Mediation:
 - 1. At any time after initiation of a Claim, OWNER and CONTRACTOR may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If OWNER and CONTRACTOR agree to mediation, then after 60 days from such agreement, either OWNER or CONTRACTOR may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. OWNER and CONTRACTOR shall each pay one-half of the mediator's fees and costs.

- E. Partial Approval: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 16 for final resolution of disputes.
- F. Denial of Claim: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either OWNER or CONTRACTOR may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 16 for final resolution of disputes.
- G. Final and Binding Results: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

Article 12 Cost of the Work; Allowances; Unit Price Work

12.01 Cost of Work

- A. Purposes for Determination of Cost of the Work: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this paragraph 12.01 are used to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, CONTRACTOR is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. Costs Included: Except as otherwise may be agreed to in writing by OWNER, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in paragraph 12.01.C, and shall include only the following items:
 - 1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Costs of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.
3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 12.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.
 - b. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - (1) The rental rate established for each piece of CONTRACTOR owned equipment, including appurtenances and attachments to the equipment, used will be determined by use of the Rental Rate Blue Book for Construction Equipment, Volume 1, 2 or 3, as applicable; the edition which is current at the time the Work was started will apply. The established rental rate will be equal to the "Monthly" rate divided by 176; modified by the rate adjustment factor and the applicable map adjustment factor, plus the "Estimated Operating Costs per Hour."

- (2) For equipment not listed in the Rental Rate Blue Book, Volume 1, 2 or 3, the rental rate will be determined by using the rate listed for a similar piece of equipment or by proportioning a rate listed so that the capacity, size, horsepower, and age are properly considered.
 - (3) For equipment for which there are no comparables in the Rental Rate Blue Book, Volume 1, 2 or 3, the monthly rate shall be reasonable, but not more than 5 percent of the current list price, or invoice, of the equipment. The base hourly rate shall then be determined by dividing the monthly rate by 176 to which 20 percent will be added to the sum which will account for adjustments and operating costs.
 - c. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, as imposed by laws and regulations.
 - d. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - e. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.03), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining
 - f. The cost of utilities, fuel, and sanitary facilities at the Site.
 - g. The costs of premiums for all bonds and insurance that CONTRACTOR is required by the Contract Documents to purchase and maintain.
- C. Costs Excluded: The term Cost of the Work shall not include any of the following items:
- 1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 12.01.B.1 or specifically covered by paragraph 12.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.
 3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
 4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 12.01.B.
- D. CONTRACTOR's Fee: When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 10.04.C.
- E. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 12, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER on a daily basis, an itemized cost breakdown together with supporting data.

12.02 Allowances

- A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to OWNER and ENGINEER.
- B. Cash Allowances: CONTRACTOR agrees that:
1. the cash allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. CONTRACTOR's costs for unloading and handling of the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. Contingency Allowance: CONTRACTOR agrees that a contingency allowance, if any, is for the sole use of OWNER to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

12.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work 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 the Proposal.

- B. 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. Payments to CONTRACTOR for Unit Price Work will be based on actual quantities.
- C. 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.
- D. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of the following paragraph 12.03.E.
- E. Within 30 days of ENGINEER's written decision under the preceding paragraph 12.03.D, CONTRACTOR may submit a Change Proposal, or OWNER may file a Claim, seeking and adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimate quantity of such item indicated in the Proposal (in no event will any change in quantities of less than 25% be considered a material or significant change from the estimated quantities); and
 - 2. there is no corresponding adjustment with respect to any other item of Work.

12.04 Delays in Contractor's Progress

- A. If OWNER, ENGINEER, or anyone for whom OWNER is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then CONTRACTOR shall be entitled to request an equitable adjustment in the Contract Times and Contract Price. However, CONTRACTOR's entitlement to an adjustment of the Contract Times or Contract Price is expressly conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times.
- B. CONTRACTOR shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of CONTRACTOR. Delay, disruption, and interference attributable to and within the control of a SUBCONTRACTOR or Supplier shall be deemed to be within the control of CONTRACTOR.
- C. If CONTRACTOR's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault and beyond the control of OWNER, CONTRACTOR, and those for which they are responsible, then CONTRACTOR shall be entitled to an equitable adjustment in Contract Times. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to CONTRACTOR's ability to complete the Work within the Contract Times. Such an adjustment shall be CONTRACTOR's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include only the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. acts or failures to act of utility owners (other than those performing other works at or adjacent to the Site by arrangement with the OWNER, as specified in paragraph 7.01); and
 3. acts of war or terrorism.
- D. CONTRACTOR's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. CONTRACTOR shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of CONTRACTOR. Such a concurrent delay by CONTRACTOR shall not preclude an adjustment of Contract Times to which CONTRACTOR is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 10.
- E. Each CONTRACTOR request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 10.04.
- CONTRACTOR shall also furnish such additional supporting documentation as OWNER or ENGINEER may require including, where appropriate, a revised Progress Schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by paragraphs 4.03 and 4.06.
- G. Paragraph 7.01 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

- H. CONTRACTOR shall not be entitled to any adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of CONTRACTOR.
- I. CONTRACTOR must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 5 days of the commencement of the delaying, disrupting, or interfering event.
- J. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Time (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety or employee or any agent of them, for damages, including but not limited to all fees and charges of ENGINEERS, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, arising out of or resulting from:
 - 1. delays caused by or within the control of CONTRACTOR (or Subcontractor or Supplier);
 - 2. delays beyond the control of both OWNER and CONTRACTOR, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts of neglect by utility owners or other contractors performing other work;
- K. Nor shall OWNER or ENGINEER or each of them be liable to CONTRACTOR for any claims, costs, losses or damages sustained by CONTRACTOR on or in connection with any other project or anticipated project.
- L. Nothing in this paragraph 12.04 bars a change in Contract Price to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible. Except for an adjustment to the Contract Times and Contract Price, the CONTRACTOR shall not be entitled to and hereby waives any and all damages that it may suffer by reason of such delay or for any Act of God, including but not limited lost profits, overhead, and other consequential damages.

Article 13 Tests and Inspection; Correction, Removal or Acceptance of Defective Work

13.01 Access to Work

- A. OWNER, ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access and advise OWNER and ENGINEER of CONTRACTOR's Site safety procedures and programs so that OWNER and ENGINEER may comply therewith as applicable.

13.02 Tests and Inspections

- A. CONTRACTOR shall give ENGINEER and testing agency at least 24-hour notice, unless otherwise specified, of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

- B. If any Law and Regulation, code, or order of any public body having jurisdiction requires any Work or part thereof to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval.
- C. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's or ENGINEER's acceptance of a manufacturer, fabricator, Supplier or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.
- D. The cost of all other inspections, tests and approvals required by the Contract Documents shall be paid by OWNER unless otherwise specified.
- E. All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR or by ENGINEER if so specified.
- F. Cost of materials to be used in inspection and transportation costs shall be paid for by the CONTRACTOR.
- G. Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents.

13.03 Uncovering Work

- A. If any Work that is to be tested, inspected or approved is covered without written concurrence of ENGINEER, or contrary to the written request of ENGINEER, it shall, if requested by ENGINEER, be uncovered by CONTRACTOR for ENGINEER's observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely written notice of his intention to cover such Work and ENGINEER has not acted with reasonable promptness in response to such notice.
- B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. Except as otherwise specified in paragraph 13.04, the cost of Work shall be paid for as follows:
 - 1. If it is found that such Work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection and testing, and of satisfactory reconstruction, (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals) and an appropriate deductive Change Order shall be issued. If the parties are unable to agree as to the amount or extent of any change in Contract Price or Contract Time, OWNER may make a Claim as provided in paragraph 11.01.

2. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction. If the parties are unable to agree as to the amount or extent of any change in Contract Price or Contract Time, CONTRACTOR may make a Claim as provided in paragraph 11.01.

13.04 Defective Work

- A. CONTRACTOR's Obligation: It is CONTRACTOR's obligation to assure that the Work is not defective.
- B. ENGINEER's Authority: ENGINEER has the authority to determine whether Work is defective, and to reject defective Work.

13.05 Owner May Stop the Work

- A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 Correction or Removal of Defective Work

- A. If required by ENGINEER or OWNER, CONTRACTOR shall promptly either correct all defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by ENGINEER, remove it from the Site and replace it with non-defective Work. CONTRACTOR shall pay all claims, costs, losses, damages and expenses caused by or resulting from such correction or removal (including, but not limited to all costs of repair or replacement of work of others) and shall take no action that would void or otherwise impair OWNER's special warranty or guarantee, if any, on such Work.

13.07 Guarantee Period

- A. If within 1 year after the date of Substantial Completion (or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents), or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions:
 1. repair defective land or areas;
 2. correct such defective Work;
 3. if the defective Work has been rejected by OWNER, remove it from the Site and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work or the work of others or other land or areas resulting therefrom.

- B. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses, damages and expenses caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement or work of others) shall be paid by CONTRACTOR.
- C. Repair or replacements made under the guarantee shall bear an additional 1 year guarantee dated from the acceptance of repair or replacement.

13.08 Acceptance of Defective Work

- A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER'S recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all claims, costs, losses, damages and expenses attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness). In such case, if acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate reduction in the Contract Price. If the acceptance occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to OWNER.

13.09 Owner May Correct Defective Work

- A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work, or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the Progress Schedule), OWNER may, after 48 hours' written notice to CONTRACTOR and his Surety without prejudice to any other remedy he may have, correct and remedy any such deficiency.
- B. In exercising his rights and remedies under this paragraph 13.09, OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER's consultants such access to the Site as may be necessary to enable OWNER to exercise his rights and remedies under this paragraph 13.09.
- C. All claims, costs, losses, damages and expenses incurred or sustained by OWNER in exercising such rights and remedies shall be charged against CONTRACTOR and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work. OWNER shall be entitled to an appropriate reduction in the Contract Price equivalent to such claims, costs, losses, damages and expenses including but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work.
- D. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights under this Article 13.

Article 14 Payments to Contractor and Completion

14.01 Schedules

- A. At least 10 days prior to submitting the first Application for Payment, CONTRACTOR shall submit to ENGINEER a final Schedule of Submittals, and, where applicable, a Schedule of Values for the Work. These schedules shall be satisfactory in form and substance to ENGINEER as provided in Article 2.
- B. The Schedule of Values shall include quantities and unit prices aggregating the Contract Price and shall subdivide the Work into component parts. Each unit cost so established shall include its proportionate share of CONTRACTOR's general operating charges such as profit, overhead, supervision, insurance, bond premiums, interest, equipment cost, depreciation and rental, contingencies, expendable tools, equipment and supplies. The total cost of the items and quantities CONTRACTOR lists in the Schedule of Values shall equal the total Contract Price established in the Proposal.
- C. The Schedule of Values shall include a complete set of detailed work sheets on bid take off and bid summary covering estimated general conditions expense (field overhead), general overhead, profit mark ups and revisions leading to the final bid amount.
- D. When the Schedule of Values is approved by the ENGINEER, it shall become part of the Agreement and shall be used as the basis for CONTRACTOR progress payments.
- E. Progress payments based upon Unit Price Work will be based upon the number of units completed.

14.02 Application for Progress Payment

- A. At least 20 days before each Application for Payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment, Contractor's Declaration, Payment Schedule, and updated Progress Schedules indicating the anticipated completion dates of the various stages of the Work and estimated payments during the next 3 months. Contractor's Application for Payment shall be filled out on the form provided in the Contract Documents and signed by CONTRACTOR covering the Work completed as of the date of the Application for Payment and accompanied by such supporting documentation as is required by the Contract Documents and as ENGINEER or OWNER may reasonably require. The Payment Schedule shall be on the form provided in the Contract Documents or in a format acceptable to the ENGINEER or OWNER. On the second and all subsequent payments, partial Waivers of Lien and Sworn Statement shall be required for all Work completed and paid for on previous certificates.
- B. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect OWNER's interest therein, including applicable insurance. A receipted vendor's invoice showing the quantities of materials and the amounts paid will be required and shall accompany the Application for Payment.

- C. Retainage with respect to progress payments will be in accordance with paragraph 14.03, and it will be retained until after completion of the entire Work and its final acceptance. When the amount to be retained is reduced to less than 10 percent, CONTRACTOR shall file with OWNER the written consent of the Surety to such reduction and shall furnish an affidavit that all CONTRACTOR's indebtedness by reason of the Contract has been paid.

14.03 Retainage

- A. On Contracts with a dollar value of \$30,000 and greater or on Contracts that provide for more than 3 progress payments, progress payments and retainage shall be governed by the provisions of any statutes, rules or regulations regarding retention and these are incorporated herein by reference and made a part of this Contract.
- B. If there are no statutes, rules, or regulations applicable to retention, retainage shall be 10%, or such an amount as OWNER deems necessary.

14.04 Review of Applications for Progress Payment

- A. ENGINEER will, within 10 days after receipt of each Contractor's Application for Payment and Payment Schedule, including each resubmittal, either indicate in writing a recommendation of payment and present an Engineer's Certificate for Payment to OWNER, or may return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.
- B. ENGINEER's recommendation of any payment requested in CONTRACTOR's Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's review of the Contractor's Application for Payment and Certificate for Payment and the accompanying data and schedules, as an experienced and qualified design professional that to the best of ENGINEER's knowledge, information and belief;
 - 1. the Work has progressed to the point indicated;
 - 2. the quality of the Work is in accordance with the technical aspects of the Contract Documents subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for any Unit Price Work under paragraph 12.03, and any qualifications stated in the recommendation; and
 - 3. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.
- C. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that:
 - 1. exhaustive or continuous on-Site inspections have been made to check the quality or the quantity of the Work; or
 - 2. involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract; or
 - 3. there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

- D. Neither ENGINEER's review of CONTRACTOR's Work for the purpose of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER:
1. to supervise, direct or control the Work;
 2. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 3. for the failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of Work;
 4. for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents;
 5. to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price;
 6. to determine that title to any Work, materials, or equipment has passed to OWNER free and clear of Liens.
- E. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make such representations as stated above to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:
1. the Work is defective, or completed Work has been damaged requiring correction or replacement;
 2. the Contract Price has been reduced because of Change Orders;
 3. OWNER has been required to correct defective Work in accordance with paragraph 13.09, or has accepted defective Work in accordance with paragraph 13.08;
 4. OWNER has been required to remove or remediate a Hazardous Environmental Condition for which CONTRACTOR is responsible;
 5. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.

14.05 Payment Becomes Due

- A. Thirty (30) days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.05.B) become due, (or only if OWNER is a public agency, within 15 days after OWNER receives the funds which are to be provided by a department or agency of the federal or state government, whichever is later, or in accordance with any time periods required by any applicable statute, rule or regulation) and when due will be paid by OWNER to CONTRACTOR.
- B. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:
1. Claims have been made against OWNER based on CONTRACTOR's conduct in the performance or furnishing of the Work, or OWNER has incurred costs, losses, or damages resulting from CONTRACTOR's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries,

- adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
2. CONTRACTOR has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 3. CONTRACTOR has failed to provide and maintain required bonds or insurance;
 4. OWNER has been required to remove or remediate a Hazardous Environmental Condition for which CONTRACTOR is responsible;
 5. OWNER has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 6. The Work is defective, requiring correction or replacement;
 7. OWNER has been required to correct defective Work in accordance with paragraph 13.09, or has accepted defective Work pursuant to paragraph 13.08;
 8. The Contract Price has been reduced by Change Orders;
 9. An event has occurred that would constitute a default by CONTRACTOR and therefore justify a termination for cause;
 10. Liquidated or other damages have accrued as a result of CONTRACTOR's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 11. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;
 12. there are other items as set forth in the Contract Documents entitling OWNER to a set off against the amount recommended; or
 13. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.04.E.1 through 14.04.E.5.
- C. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER will give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects, to OWNER's satisfaction, the reasons for such action. The reduction imposed shall be binding on CONTRACTOR unless CONTRACTOR duly submits a Change Proposal contesting the reduction.
- D. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.05.

14.06 Contractor's Warranty of Title

- A. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all Liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

14.07 Substantial Completion

- A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete and request that ENGINEER issue a Certificate of Substantial Completion. CONTRACTOR shall at the same time submit to OWNER and ENGINEER an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after CONTRACTOR's notification, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor.
- C. Once ENGINEER considers the Work substantially complete, ENGINEER will deliver to OWNER a preliminary Certificate of Substantial Completion which shall fix the date of Substantial Completion. ENGINEER shall attach to the certificate a punch list of items to be completed or corrected before final payment. OWNER shall have 7 days after receipt of the preliminary certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, ENGINEER concludes that the Work is not substantially complete, ENGINEER will, within 14 days after submission of the preliminary certificate to OWNER, notify CONTRACTOR in writing that the Work is not substantially complete, stating the reasons therefore. If OWNER does not object to the provisions of the certificate, or if despite consideration of OWNER's objections ENGINEER concludes that the Work is substantially complete, then ENGINEER will, within said 14 days, execute and deliver to OWNER and CONTRACTOR a final Certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as ENGINEER believes justified after consideration of any objections from OWNER.
- D. At the time of receipt of the preliminary Certificate of Substantial Completion, OWNER and CONTRACTOR will confer regarding OWNER's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by OWNER. Unless OWNER and CONTRACTOR agree otherwise in writing, OWNER shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon OWNER's use or occupancy of the Work.
- E. After Substantial Completion the CONTRACTOR shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases CONTRACTOR may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion subject to allowing CONTRACTOR reasonable access to remove its property and complete or correct items on the punch list.

14.08 Partial Utilization

- A. Use by OWNER of completed portions of the Work may be accomplished prior to Substantial Completion of all the Work subject to the following:

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any part of the Work which OWNER believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the Work. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion.
 - a. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving his reasons therefor.
 - b. If ENGINEER considers that part of the Work to be substantially complete, ENGINEER will execute and deliver to OWNER and CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion for that part of the Work, attaching thereto a punch list of items to be completed or corrected before final payment.
2. Prior to issuing a certificate of Substantial Completion for that part of the Work, ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities and insurance for that part of the Work, which shall become binding upon OWNER and CONTRACTOR at the time of issuing the definitive certificate of Substantial Completion for that part of the Work unless OWNER and CONTRACTOR shall have otherwise agreed in writing and so informed ENGINEER.
3. OWNER shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the punch list.
4. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, OWNER may take over operation of a facility constituting part of the Work whether or not it is Substantially Complete if such facility is functionally and separately usable; provided that prior to any such takeover, OWNER and CONTRACTOR have agreed as to the division of responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

14.09 Final Inspection

- A. Upon written notice from CONTRACTOR that the Work is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.10 Final Application for Payment

- A. After CONTRACTOR has completed all corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked up record documents and other documents (all as required by the Contract Documents), and after ENGINEER has indicated that the Work is acceptable, subject to the provisions of paragraph 14.13, CONTRACTOR may make application for final payment following the procedure for progress payments.
- B. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as ENGINEER may reasonably require, consent of Surety, if any, to final payment, together with complete and legally effective releases or waivers, satisfactory to OWNER, of all Liens arising out of or filed in connection with the Work.
- C. In lieu of the releases or waivers of Lien, if approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or his property might in any way be responsible, have been paid or otherwise satisfied.
- D. If any Subcontractor, manufacturer, fabricator, Supplier or distributor fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Claim or Lien.

14.11 Final Payment and Acceptance

- A. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation (all as required by the Contract Documents), ENGINEER is satisfied that to the best of ENGINEER's knowledge, information and belief as a design professional that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, ENGINEER will, within 10 days after receipt of the final Application for Payment, indicate in writing ENGINEER's Certificate for Payment and present the application to OWNER for payment. At that time ENGINEER will give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.13.
- B. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.
- C. If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within 45 days (or within the time period required by any applicable statute, rule or regulation) after receipt thereof pay CONTRACTOR the amount recommended by ENGINEER less any amounts of OWNER claimed set-offs allowed under the Contract Documents, including but not limited to any applicable liquidated damages as determined by OWNER. If OWNER rejects the Application, OWNER shall do so in writing stating the appropriate sections of the Contract Documents upon which the rejection is based. CONTRACTOR may take the necessary remedial actions and resubmit the Application.

14.12 Final Completion Delayed

- A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.13 Waiver of Claims

- A. The making and acceptance of final payment shall constitute:
 - 1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.09, or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; and shall not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's existing or continuing obligations under the Contract Documents; and,
 - 2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing and still pending in accordance with Article 16.

14.14 Late Payments

- A. All monies not paid when due hereunder, except monies involving Federal and/or State Loans, Grants, or other sources which are delinquent because of no fault of the OWNER, shall bear interest at the maximum rate allowed by law at the time and place of the Project.

Article 15 Suspension of Work and Termination

15.01 Owner May Suspend Work

- A. OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period as OWNER may deem necessary by notice in writing to CONTRACTOR and ENGINEER. If it should become necessary to stop work for an indefinite period, CONTRACTOR shall store all materials in such manner that they will not become an obstruction, nor become damaged in any way, and CONTRACTOR shall take every precaution to prevent damage or deterioration of the Work performed; provide suitable drainage by opening ditches and drains, and erect temporary structures where necessary. CONTRACTOR may request an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a Claim therefor as provided in paragraph 11.01.

15.02 Owner May Terminate for Cause

- A. The occurrence of any one or more of the following events will constitute a default by CONTRACTOR and justify termination for cause:

1. CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time;
 2. a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereinafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;
 3. CONTRACTOR makes a general assignment for the benefit of creditors;
 4. a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;
 5. CONTRACTOR admits in writing an inability to pay its debts generally as they become due;
 6. CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under paragraph 2.05 as revised from time to time);
 7. CONTRACTOR disregards Laws and Regulations of any public body having jurisdiction;
 8. CONTRACTOR disregards the authority of ENGINEER or OWNER; or,
 9. CONTRACTOR otherwise violates any provisions of the Contract Documents.
- B. OWNER may, after giving CONTRACTOR (and the Surety, if there be one) 7 days' written notice, and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, finish the Work as OWNER may deem expedient, and/or enforce the rights available to OWNER under any applicable Performance Bond.
- C. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, damages and expenses sustained by OWNER arising out of or resulting from completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, damages and expenses exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, damages and expenses incurred by OWNER will be reviewed as to reasonableness by ENGINEER and when so approved, incorporated in a Change Order, but when exercising any rights or remedies under this paragraph, OWNER shall not be required to obtain the lowest price for the Work performed.

- D. Where CONTRACTOR's services have been so terminated by OWNER, the termination shall not affect any rights or remedies of OWNER against CONTRACTOR or its Surety then existing or which may thereafter accrue. Any retention or payment of monies due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 Termination for Convenience

- A. Upon 7 days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):
 - 1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination;
 - 2. for actual expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work; and
 - 3. for reasonable expenses directly attributable to protecting work as a result of termination.
- B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.
- C. Upon such termination, CONTRACTOR shall:
 - 1. Immediately discontinue Work on the date and to the extent specified in the notice except to the extent necessary to protect Work in place;
 - 2. Place no further orders for materials, services, or facilities, other than as may be necessary or required for completion of such portion of Work under the Contract that is not terminated;
 - 3. Promptly make every reasonable effort to obtain cancellation upon terms reasonably satisfactory to OWNER of all purchase orders and subcontracts to the extent they relate to the performance of Work terminated or assign to OWNER those orders and subcontracts and revoke agreements specified in such notice;
 - 4. Reasonably assist OWNER, as specifically requested in writing, in the maintenance, protection and disposition of property acquired by OWNER under the Contract Documents, as may be necessary;
 - 5. Complete performance of any Work which is not terminated; and
 - 6. Deliver to OWNER an affidavit regarding the identity of potential unpaid Subcontractors or Suppliers and the amounts due to each.

15.04 Contractor May Stop Work or Terminate

- A. If OWNER has failed to pay CONTRACTOR any sum finally determined to be due in accordance with the time limits specified in paragraph 14.05, CONTRACTOR may upon 7 days' written notice to OWNER and ENGINEER, stop the Work until payment of all amounts then due.

- B. If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than 90 days by OWNER, or under an order of court or other public authority, then CONTRACTOR may, upon 7 days written notice to OWNER and ENGINEER and provided OWNER or ENGINEER does not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.03.
- C. The provisions of this paragraph 15.04 shall not relieve CONTRACTOR of his obligations under paragraph 6.22 to carry on the Work in accordance with the Progress Schedule and without delay during disputes and disagreements with OWNER.

Article 16 Final Resolution of Disputes

16.01 Methods and Procedures

- A. Disputes Subject to Final Resolution: The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between OWNER and CONTRACTOR concerning the Work or obligations under the Contract Documents and arising after final payment has been made.
- B. Final Resolution of Disputes: For any dispute subject to resolution under this Article, OWNER or CONTRACTOR may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, the following dispute resolution process shall be followed:
 - a. The parties shall submit the dispute to mediation under the mediation procedures outlined in the Construction Industry Arbitration Rules and Mediation Procedures of the American Arbitration Rules.
 - b. If the dispute is not resolved by mediation, the parties shall proceed to resolve the dispute by arbitration in accordance with the Construction Industry Arbitration Rules and Mediation Procedures of the American Arbitration Association. The decision of the arbitrator(s) shall be final and binding and is enforceable in a court of competent jurisdiction.

Article 17 Miscellaneous

17.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice to OWNER, ENGINEER, or CONTRACTOR, it shall be deemed to have been validly given only if delivered:
 - 1. in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended;

2. by registered or certified mail postage prepaid to, the last business address known to the giver of the notice;
3. or delivered in person to such person by a commercial courier service or otherwise to the recipient's place of business; or
4. by secure file transfer with receipt documentation or other document control software.

17.02 Computation of Time

- A. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday, or on a day made a legal holiday by the Law of the applicable jurisdiction, such day shall be omitted from the computation.

17.03 General

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Law or Regulation, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this paragraph shall be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.
- B. All representations, warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of this Agreement.

17.04 Professional Fees and Court Costs Included

- A. Whenever reference is made to "claims, costs, losses, damages and expenses," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

17.05 Nondiscrimination of Employment

- A. The CONTRACTOR shall covenant and agree not to discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, sex, age, religion, national origin or ancestry, height, weight, or marital status, or any other classification protected by law, and to require a similar covenant on the part of any Subcontractor employed in the performance of the Contract.

17.06 Post Completion Date Engineering and Inspection Costs

- A. All engineering and inspection costs incurred after the specified completion date shall be paid by CONTRACTOR to OWNER prior to final payment authorization. However, CONTRACTOR shall not be charged with any post completion date engineering and inspection costs when the delay in completion of the Work is due to the following and CONTRACTOR has promptly given written notice of such delay to OWNER or ENGINEER:
 1. to any preference, priority or allocation order duly issued by OWNER;

2. to unforeseeable causes beyond the control and without the fault or negligence of CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of OWNER, acts of another contractor in the performance of a Contract with OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and,
 3. to any delays of Subcontractors or Suppliers occasioned by any of the causes specified in this Article.
- B. Charges after the specified completion date shall be made at such times and in such amounts as ENGINEER shall invoice OWNER, provided, however said charges shall be in accordance with ENGINEER's current rate schedule at the time the costs are incurred. Engineering and inspection costs so incurred shall be deducted from CONTRACTOR's progress payments.

17.07 Waiver of Consequential Damages

- A. CONTRACTOR and OWNER waive Claims against each other for consequential damages arising out of or relating to this Contract or the Work. This mutual waiver includes but is not limited to:
1. damages incurred by OWNER for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
 2. damages incurred by CONTRACTOR for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit in connection with any other project or anticipated project.
- B. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination or default. Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. CONTRACTOR also waives any Claim for consequential damages against ENGINEER where such Claims arise out of or relate in any way to the Project or the Contract Documents.

17.08 No Waiver

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.09 Controlling Law

- A. This Contract is to be governed by the Law of the state in which the Project is located.

17.10 Headings

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

End of Section

Section 00 7300 Supplementary Conditions

These Supplementary Conditions amend or supplement Section 00 7200, General Conditions, as indicated below. All provisions which are not amended or supplemented by this section remain in full force and effect. The terms used in these Supplementary Conditions have the meanings assigned to them in the General Conditions.

SGC-1.01 Defined Terms

The definition for "Substantial Completion" in Article 1.01 of the General Conditions shall be revised as follows:

Substantial Completion -- The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by the Certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.11. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

SGC-4.02 Subsurface and Physical Conditions; Investigations and Reports

Add a new paragraph immediately after the first paragraph of paragraphs 4.02 of the General Conditions, which is to read as follows:

In the preparation of Plans and Specifications, ENGINEER has relied upon the following reports and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work:

SGC-5.03.D Additional Insured

Add the following language at the end of Article 5.03.A.4 of the General Conditions:

A. OWNER's Name: Little Traverse Bay Bands of Odawa Indians

Additional named insured on OWNER's and CONTRACTOR's Protective Policy shall include:

1. Wade Trim, Inc.

SGC-5.04 Limits of Liability

The required limits of liability for insurance coverages requested in Article 5.03 of the General Conditions shall be not less than the following:

SGC-5.04.A Worker's Compensation

Coverage A – Compensation	Statutory
Coverage B – Employer's Liability	
Each Accident	\$ 100,000
Disease – Policy Limit	\$ 100,000
Disease – Each Employee	\$ 100,000

SGC-5.04.B	Comprehensive General Liability	
	General Aggregate	\$1,000,000
	Products – Com/Ops Aggregate	\$1,000,000
	Personal and Advertising Injury	\$ 500,000
	Each Occurrence	\$ 500,000
	Fire Damage (any one fire)	\$ 50,000
	Medical Expense (any one person)	\$ 5,000
SGC-5.04.C	Comprehensive Automobile Liability	
	Bodily Injury	\$ 500,000
	Property Damage	\$ 200,000
	or combined single limit	\$1,000,000
SGC-5.04.D	OWNER’s Protective – Coverage shall be Occurrence Form	
	General Aggregate	\$1,000,000
	Each Occurrence	\$1,000,000
SGC-5.04.E	Builder’s Risk-Installation Floater	
	Cost to Replace at Time of Loss	
SGC-5.04.F.	Umbrella or Excess Liability	\$2,000,000
SGC-5.04.G.	Railroad Protective Liability – Railroad Coverage	
	Each Occurrence	\$2,000,000
	Aggregate	\$2,000,000

SGC- 12.04 Lump Sum Work

Add the following new paragraph after Article 12.03 of the General Conditions, which is to read as follows:

12.04 Lump Sum Work

- A. When additional work or deletion of work, which is covered by a lump sum item, is required due to a modification, not a normal overrun or underrun in estimated quantities, payment or credit for the work will be based upon apparent unit prices which will be derived by dividing the lump sum price by the estimated plan quantities.

Renumber subsequent paragraphs accordingly.

SGC-16.01 Methods and Procedures

Replace the following language at the end of Article 16.01.B.3.b:

- A. Replace “a court of competent jurisdiction” with “the Little Traverse Bay Bands Tribal Court”.

SGC-18 Liquidated Damages

Liquidated damages, if applicable, are referenced in the Proposal and Agreement. The requirements for liquidated damages should be included herein.

Article 18 – Liquidated Damages

- A. If CONTRACTOR shall fail to Substantially Complete the Work within the Contract Time, or extension of time granted by OWNER, then CONTRACTOR will pay to OWNER the amount for liquidated damages as specified in the Agreement for each calendar day that CONTRACTOR shall be in default after the time stipulated in the Contract Documents. The liquidated damages charged shall be deducted from CONTRACTOR's progress payments.
- B. CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in Substantial Completion of the Work is due to the following and CONTRACTOR has given written notice of such delay within seven (7) calendar days to OWNER or ENGINEER.
 - 1. To any preference, priority or allocation order duly issued by the OWNER.
 - 2. To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a Contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and
 - 3. To any delays of subcontractors occasioned by any of the causes specified in Items A and B of this article.

Housing and Urban Development (HUD) Requirements

The following 2 CFR Part 200 Subpart D and Appendix II to Part 200 are incorporated into the General Conditions where applicable.

End of Section

Division 01
General Requirements

Section 01 1100 Summary of Work

Part 1 General

1.01 Work Covered By Contract Documents

This Project includes Construction of 0.21 miles of new road construction, and 213 tons of HMA, ultra-thin overlay including Excavation, Earth; Embankment, CIP; Aggregate Base; HMA Paving; Curb Slp, HMA; HMA Spillway; Aggregate Shoulders; Slope Restoration; Trenching, Sidewalk Removal, Curb Ramp, Concrete, and all other miscellaneous appurtenances.

1.02 Work by Others

- A. There is no other work in the Project area, known to OWNER, which would affect this Contract.

1.03 Right-of-Way Jurisdiction/Permits

- A. Niinaatig Way is under the jurisdiction of the Little Traverse Bay Bands of Odawa Indians.
- B. All other roads and streets in the vicinity of the Project are under the jurisdiction of the Charlevoix County Road Commission.
- C. Soil erosion and sedimentation control is under the jurisdiction of the Little Traverse Bay Bands of Odawa Indians.
- D. CONTRACTOR shall secure any permits required by the agency having jurisdiction, shall abide by all rules and regulations of each, and shall pay all costs in connection with the permits. CONTRACTOR shall pay for all permit and inspection fees as the agencies may charge to ensure compliance with their requirements.

1.04 Coordination

- A. A notice shall be delivered by CONTRACTOR to all affected residences and businesses a minimum of two days before any driveway closures are shut off for construction. The Contractor shall provide 24-hour access to properties unless approved in writing by the Owner.
- B. It shall be the responsibility of CONTRACTOR to coordinate his operations and those of his subcontractors in such a manner to avoid interference and delays in the areas of common construction activities.

1.05 CONTRACTOR's Use of Premises

- A. CONTRACTOR shall maintain his construction operations within the presently existing road rights-of-way and easements throughout the Project area. If CONTRACTOR deems it necessary or advisable to operate beyond the limits of the existing rights-of-way or easements, he shall be responsible for making special written agreements with the property owners and shall furnish such copies of agreement to OWNER.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 01 3300 Submittal Procedures

Part 1 General

1.01 General Requirements

- A. CONTRACTOR shall submit Shop Drawings, product data, and Samples, as required by the individual Specification sections, to ENGINEER for review in accordance with the provisions of General Conditions.

1.02 Progress Schedules

- A. CONTRACTOR shall submit one (1) electronic copy in PDF format of Progress Schedules indicating the starting and completion dates of the various stages of the Work and estimated payments to ENGINEER.
 - 1. Proposed Progress Schedules shall be submitted to ENGINEER prior to the pre-construction meeting.
 - 2. CONTRACTOR shall distribute hard copies of the Progress Schedules during the pre-construction meeting for discussion.
 - 3. Progress Schedules shall be updated by CONTRACTOR and submitted electronically (in PDF format) to ENGINEER, as a part of applications for progress payments, through completion of the Work. Failure to update Progress Schedule may be the basis for rejection of Applications for Progress Payments.

1.03 Shop Drawing Schedule

- A. CONTRACTOR shall submit one (1) electronic copy in PDF format of the Shop Drawing Schedule indicating the individual items and submission dates to ENGINEER.
 - 1. A preliminary Shop Drawing Schedule in accordance with the requirements in the General Conditions shall be submitted by CONTRACTOR prior to the pre-construction meeting.
 - 2. CONTRACTOR shall distribute hard copies of the Shop Drawing Schedule during the pre-construction meeting for discussion.
 - 3. A final electronic copy of the Shop Drawing Schedule (in PDF format) shall be submitted by CONTRACTOR at least ten (10) days prior to submitting the first Application for a Payment.

1.04 Schedule of Values

- A. CONTRACTOR, if applicable, shall submit one (1) electronic copy in PDF format Schedule of Values of the Work to ENGINEER.
 - 1. A preliminary Schedule of Values shall be submitted by CONTRACTOR prior to the pre-construction meeting.

2. CONTRACTOR shall distribute hard copies of the Schedule of Values during the pre-construction meeting for discussion.
3. A final Schedule of Values (in PDF format), prepared in accordance with the General Conditions and presented in sufficient detail to serve as the basis for payments during construction, shall be submitted to ENGINEER for review at least ten (10) days prior to submitting the first Application for Payment.

1.05 Staking Schedule

- A. CONTRACTOR shall submit one (1) electronic copy in PDF format of the staking schedule, in accordance with the "Construction Layout" specification section prior to the start of construction.
 1. The staking schedule should be updated as outlined in the Specifications and submitted by CONTRACTOR to ENGINEER through completion of the Work.

1.06 Applications for Payment

- A. CONTRACTOR shall submit one (1) electronic copy in PDF format Applications for Payment to ENGINEER in accordance with the provisions of Article 14 of the General Conditions.
- B. Applications for Payment shall be made on forms provided by or approved by ENGINEER.
 1. Sample CONTRACTOR's Application for Payment, Payment Schedule and ENGINEER's Certificate for Payment forms are included in the Contract Documents and can be obtained in digital format from ENGINEER.
- C. Copies of these forms, with Project specific information completed by ENGINEER, will be given to CONTRACTOR at the preconstruction meeting or, if applicable, after approval of the final Schedule of Values.
- D. CONTRACTOR shall submit a completed Payment Schedule with an executed Contractor's Application for Payment and Contractor's Declaration to ENGINEER not more often than once per month.
- E. ENGINEER will certify payments with the use of Engineer's Certificate for Payment.

1.07 Shop Drawings

- A. Shop Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to plan sheet number, detail number if applicable, and Specification section number, and article number.

1.08 Product Data

- A. Product Data shall be presented in a clear and thorough manner identified the same as the Shop Drawings. Included with the information shall be performance characteristics and capacities depicting dimensions and clearances required.

- B. Manufacturer's standard schematic drawings and diagrams shall be modified to delete information which is not applicable to the Work. Manufacturer's standard information shall be supplemented to provide information specifically applicable to the Work.

1.09 Samples

- A. Samples shall be of sufficient size and quantity to clearly illustrate functional characteristics of the product with integrally related parts and attachment devices depicting full range of color, texture and pattern.

1.10 Submission Requirements

- A. CONTRACTOR shall make Submittals in accordance with the approved schedule, and in such sequence as to cause no delay in the Work or in the work of any other Contractor. No damages will be awarded, or extension of time granted, due to the Shop Drawing and product data review process.
- B. CONTRACTOR shall submit an entire package of Shop Drawings and Product Data information for major items of Work so that ENGINEER can review the package as a unit.
- C. CONTRACTOR shall submit one (1) electronic copy in PDF format of Shop Drawings and Product Data information containing the following information at a minimum:
 - 1. Field dimensions clearly identified as such.
 - 2. Relation to adjacent or critical features of the Work or materials.
 - 3. Applicable standards, such as ASTM or Federal Specification Numbers.
 - 4. Identification of deviations from Contract Documents.
 - 5. Identification of revisions on resubmittals.
 - 6. Project Title, Date of Submission, Date of Previous Submission, and Specification Section number.
- D. CONTRACTOR shall initial or sign Shop Drawings and Product Data submittals, certifying CONTRACTOR's review and approval of Submittal per the General Conditions; verification of products, field measurements, field construction criteria, and coordination of the information within the submittal with requirements of the Work and of Contract Documents.
- E. ENGINEER shall initial or sign Shop Drawings and Product Data submittal and shall indicate the status of the Submittal, or requirements for resubmittal. ENGINEER shall return to CONTRACTOR one (1) electronic copy of the Shop Drawing and/or Product Data submittal (in PDF format) for distribution or for resubmission.

1.11 Engineer's Review

- A. Upon receipt of any Submittal defined above, ENGINEER will:
 - 1. Check each for completeness, clarity, correctness, cohesiveness, legibility, and reproducibility.

2. Review each only for general conformity with the Contract Documents as specified in the General Conditions.
- B. After review of any Submittal, ENGINEER will appropriately affix a stamp, electronic notation box or other means, signifying the Submittal as having received full consideration and review.
- C. The "status" of any such Submittal or portion thereof, as appropriate, will be evidenced by any one or more of the following notations clearly signified by a "X" or other similar mark placed in the box adjacent to the notation:
1. Notations for ENGINEER'S Review:
 - No Exceptions Taken
 - Note Markings
 - Comments Attached
 - Rejected
 2. Notations for Response Required by CONTRACTOR:
 - None
 - Confirm
 - Resubmit
- D. Notation Meanings:
1. Elements marked "No Exceptions Taken" indicate that CONTRACTOR may commence with construction, fabrication or purchase of such items provided CONTRACTOR.
 2. Elements marked "Note Markings" indicate that the CONTRACTOR may commence with construction, fabrication or purchase of such items provided the CONTRACTOR.
 - a. Proceeds in strict accordance with ENGINEER's notes and/or required corrections/deletions/additions indicated thereon;
 - b. Pending appropriate response by CONTRACTOR as further noted.
 3. Elements marked "Comments Attached" indicate that further comments or explanations have been affixed to the Submittal, which may require action(s) by CONTRACTOR as further noted.
 4. Elements marked "Rejected" indicate that CONTRACTOR must make the required corrections as shown or noted and resubmit such items to ENGINEER for further review.
 5. Elements marked "None" indicate that the Submittal requires no further action by CONTRACTOR.
 6. Elements marked "Confirm" require CONTRACTOR to provide affirmation to ENGINEER regarding comments, notes, markings, etc. made by ENGINEER, and to affirm that CONTRACTOR will comply with the comments, notes, markings, etc.

7. Elements marked "Resubmit" indicate that CONTRACTOR may not commence with construction, fabrication or purchase of such items, and that CONTRACTOR must resubmit items for review that comply with the Contract Documents in the event that those originally submitted do not, or with any comments, notes, markings, etc. made by ENGINEER.

1.12 Resubmission Requirements

- A. CONTRACTOR shall make all corrections or changes in the Submittals required by ENGINEER and resubmit. CONTRACTOR shall indicate any changes which have been made other than those requested by ENGINEER.

1.13 Manufacturer's Operation and Maintenance Data

- A. CONTRACTOR shall submit one (1) electronic copy in PDF format and one (1) bound copy of all operation and maintenance data required per the various Specification sections.
 1. Prior to 50% completion of the Project, CONTRACTOR shall have submitted one (1) acceptable copy to ENGINEER for review.
- B. Final copies of the operation and maintenance data shall be bound in a suitable number of 3-inch or 4-inch, 3-ring hard cover binders. Permanently imprinted on the cover shall be the words "Manufacturer's Operation and Maintenance Data", Project title, location of the Project, and the date. A table of contents shall be provided in the front of each binder to list the various sections in the manual.
- C. The information to be provided in each section of the manual, for each piece of equipment and project component shall include, but not be limited to, detailed equipment drawings; sections cut through all of the major equipment and subassemblies; installation and operational procedures; complete wiring and piping schematics; lubrication materials and procedures; maintenance procedures; and parts lists complete enough to permit identification of parts by nomenclature, manufacturer's part number and use.
- D. At the front of each section a maintenance schedule shall be provided for each piece of equipment in the section.
 1. The schedule shall display the daily, weekly, monthly, semi-annual, annual or fraction thereof, lubrication and preventative maintenance required in order to meet warranty conditions and the manufacturer's recommendations for optimum performance and life of the unit.
 2. A common schedule format is to be developed and used for all of the sections. Photocopies or reproductions of the manufacturer's literature will not be accepted.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 01 4219 Reference Standards

Part 1 General

1.01 Work Covered by Contract Documents

- A. The Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction are hereby incorporated into this Contract by reference and apply to the Work specified herein.
 - 1. Sections of the MDOT 2020 Standard Specifications for Construction are applicable, unless noted otherwise in this proposal or special provision.
 - 2. Pay items are MDOT pay items covered by the MDOT 2020 Standard Specifications for Construction or special provision.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 01 4500

Quality Control

Part 1 General

1.01 General Requirements

- A. Sampling of materials will be made by ENGINEER in accordance with the methods designated by the Specifications. CONTRACTOR shall furnish such facilities as ENGINEER may require for collecting, storing, and forwarding samples to the Laboratory. CONTRACTOR in all cases shall furnish the required samples to OWNER without charge.

1.02 Tests of Materials

- A. Materials in the Work shall meet the requirements of the Contract Documents.
- B. Tests of materials will be made as specified herein. ENGINEER shall have access to materials intended for use in the Work as well as to the plants where such materials are produced. Plant inspection may be made if the quantities are sufficient to warrant such inspection and if it is to the best interest of OWNER. In any case materials may be either inspected or tested when received on the Project.
- C. Materials shall not be used until approval has been received from ENGINEER. Approval of materials at the producing plant does not constitute a waiver of ENGINEER's right for re-examination at the Project site.
- D. Standards for testing materials, unless otherwise specified, shall be as established by the American Society for Testing and Materials (ASTM). Tests of materials will be made in accordance with the methods described or designated in the Specifications.
- E. Sampling and testing of materials not specifically mentioned shall be done by generally accepted methods, unless otherwise specified by ENGINEER.

1.03 Certification of Materials

- A. At the request of ENGINEER, CONTRACTOR shall provide ENGINEER with certification that the various materials to be used conform to the standards referred to in the Contract Documents.

1.04 Source Quality Control

- A. Testing identified in the Specifications as Source Quality Control, which is required to establish quality of materials, equipment or fabricated items, shall be paid for by CONTRACTOR.

1.05 Inspector Days

- A. Resident Project Representative(s) will be assigned to the Project by ENGINEER, as necessary (in the opinion of ENGINEER) to adequately monitor CONTRACTOR's work.
 - 1. When multiple CONTRACTOR crews are working on the Project, multiple Resident Project Representatives may be assigned to the Project.

- B. If the quantity of Work under the Contract is changed, the number of "Inspector Days" shall be increased or decreased as determined by Article 10 or 11 of the General Conditions. This revision in the number of Inspector Days shall be agreed upon at the time the Contract quantities are revised.
- C. CONTRACTOR shall give ENGINEER at least 48 hours notice, exclusive of Saturdays, Sundays or holidays, when the Project requires an increase or decrease in the number of Resident Project Representatives.
 - 1. Failure to observe this requirement will either necessitate the charging of 4 hours show-up time if the Resident Project Representative appears on the Project, or the halting of all additional operations until a Resident Project Representative is available.
- D. Unless the Resident Project Representative is notified in advance, Inspector days will be charged when a Resident Project Representative appears on a project and CONTRACTOR decides not to work.
- E. A separate Inspector Day or a partial Inspector Day shall be charged for each and every Resident Project Representative working on a project for monitoring purposes.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 01 5713

Temporary Erosion and Sediment Control

Part 1 General

1.01 Scope of Work

- A. This Section includes furnishing, installing, maintaining, and removing at project completion, Soil Erosion and Sedimentation Control devices. Devices include silt fence, straw bales, turbidity barriers, temporary gravel construction entrance/exits, inlet filters, ditch sediment traps, etc.

1.02 Related Work Specified Elsewhere

- A. Section 01 8900: Site Construction Performance Requirements

1.03 Reference Standards

- A. ASTM - American Society for Testing and Materials

1.04 Requirements of Regulatory Agencies

- A. CONTRACTOR, at his expense, shall secure all permits, and post all bonds or deposits required to comply with the "Soil Erosion and Sedimentation Control," requirements, being Part 91 of PA 451 of 1994 as amended and the National Pollution Discharge Elimination System (NPDES) Rules for storm water discharges from construction activity.
- B. Comply with requirements of the agency having jurisdiction. OWNER may withhold payment to CONTRACTOR equivalent to any fines resulting from non-compliance with applicable regulations.

1.05 Performance Requirements

- A. Employ Best Management Practices as defined by standard EPA 832-R-92-005.
- B. Put preventative measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- C. Control increased storm water runoff due to disturbance of surface cover due to construction activities for this Project.
- D. Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this Project.
- E. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall event that might occur in 10 years.

- F. Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this Project. Prevent windblown soil from leaving the project site.

Comply with fugitive dust ordinances of agencies having jurisdiction. Prevent tracking or flowing of mud and sediment onto public or private roads, sidewalks or pavements outside of the site.

- G. Prevent sedimentation of waterways on or off the project site, including rivers, streams, lakes, ponds, open drainage ditches, storm sewers, and sanitary sewers. If sedimentation occurs, install or correct preventative measures immediately at no cost to OWNER. Comply with requirements of agencies having jurisdiction.
- H. Maintain temporary preventative measures until permanent measures have been established. Remove temporary measures when permanent measures have been established.
- I. If erosion or sedimentation occurs due to non-compliance with these requirements, remove deposited sediment or restore eroded areas at no cost to OWNER.

1.06 Submittals

- A. Submit schedule of Soil Erosion and Sedimentation Control activities to agency having jurisdiction. Include events (with days and/or dates of the various activities) for review and approval prior to obtaining a permit.
- B. CONTRACTOR must provide evidence of Storm Water Operator license.

Part 2 Products

2.01 Silt Fence

- A. Polypropylene geotextile fabric, resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; meeting the following requirements:
 - 1. Average Opening Size: 30 U.S. Std. Sieve 600 μm), maximum; ASTM D4751.
 - 2. Permittivity: 0.05 sec^{-1} , minimum; ASTM D4491.
 - 3. Ultraviolet Resistance: Retaining at least 70% of tensile strength; ASTM D4355 after 500 hours exposure.
 - 4. Tensile Strength: 100 lb-f (445 N) minimum, in cross-machine direction; 124 lb-f (551 N) minimum in machine direction; ASTM D4632.
 - 5. Elongation: 15 to 30%; ASTM D4632.
 - 6. Tear Strength: 55 lb-f (244 N) minimum; ASTM D4533.
- B. Posts shall be 2 by 2-inch (50 mm x 50 mm) cross section hardwood stakes, minimum 3-feet (1.0 m) long.

2.02 Erosion Control Blankets

- A. Machine produced blanket with a consistent thickness of evenly distributed straw or coconut fiber as specified. Unless otherwise specified on the Plans, the erosion control blanket shall have the following minimum properties:
 - 1. Double net 100% straw blanket.
 - 2. Top and bottom photodegradable polypropylene netting, 1.64 lbs./1,000 sq. ft. (0.8 kg/ m²) approximate weight.
 - 3. 100% agricultural straw 0.5 lbs/sy (.27 kg/m²).
- B. Stitch spacing: 1.5 inches (40 mm) on centers. Pegs shall be 6-inch (150 mm) long, hardwood pegs.

Part 3 Execution

3.01 Examination

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to the greatest extent possible.
- B. Except in areas to be cleared, do not remove, cut, deface, injure or destroy trees or shrubs without ENGINEER's approval. Protect existing trees or shrubs that are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations, with suitable fences or other means as approved by ENGINEER.

3.02 Preparation

- A. Review the drawings and Storm Water Pollution Prevention Plan (SWPPP).
- B. Revise SWPPP as necessary to address potential pollution from site identified after issuance of the SWPPP at no additional cost to Owner.
- C. Conduct storm water pre-construction meeting with Site Contractor, all ground-disturbing Subcontractors, site Engineer of record or someone from their office familiar with the site and SWPPP, and state or local agency personnel in accordance with requirements of the special conditions.
- D. Schedule work so that the soil surfaces are left exposed for the minimum amount of time. Place permanent soil and sedimentation control measures as soon as practical.

3.03 General

- A. Do not discharge excavation ground water to the sanitary sewer, storm sewer, or to rivers, streams, etc. without authorization from the agency having jurisdiction. Construction site runoff will be prevented from entering any storm drain, river, stream, etc. directly by the use of silt fences or other suitable methods. CONTRACTOR shall provide erosion protection of surrounding soils.

- B. Sedimentation control devices shall be installed prior to CONTRACTOR beginning Work. Soil erosion and sedimentation control devices shall be maintained in an effective functioning condition at all times during the course of the Work.
- C. Immediately bring earthwork to final grade and protect sideslopes and backslopes from erosion. Plan and conduct earthwork to minimize duration of exposure of unprotected soils.

3.04 Installation - General

- A. Install silt fences, ditch sediment traps, check dams, inlet filters, temporary gravel construction entrance/exits, turbidity barriers, erosion control blankets and other soil erosion control devices in accordance with the drawings and Storm Water Pollution Prevention Plan, or as may be dictated by site conditions in order to maintain the intent of the specifications and permits.
- B. Deficiencies or changes on the drawings or SWPP shall be corrected or implemented as site conditions change. Changes during construction shall be noted in the SWPP and posted on the drawings.
- C. OWNER has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations and to direct CONTRACTOR to provide immediate permanent or temporary pollution control measures.
- D. Remove temporary control devices after permanent measure are established. Remove and replace temporary control devices if they become ineffective at no additional cost to OWNER.
- E. CONTRACTOR shall incorporate permanent erosion control features, paving, permanent slope stabilization, and vegetation into project at earliest practical time to minimize need for temporary controls.
- F. CONTRACTOR shall permanently seed and mulch cut slopes as excavation proceeds to extent considered desirable and practical.

3.05 Dust Control

- A. Keep dust down at all times, including during non-working periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming is not permitted.

3.06 Installation of Erosion Control Blankets

- A. Erosion control blankets shall be pegged at the pattern and rate as recommended by the manufacturer, however, at a minimum, blankets shall be pegged at the rate of 1.75 pegs per square yard (2pegs/m²) of blanket, unless otherwise indicated on the plans.

3.07 Maintenance

- A. Maintain temporary erosion and sedimentation control systems as dictated by site conditions, indicated in the construction documents, or as directed by governing authorities or OWNER to control sediment until final stabilization.

- B. CONTRACTOR shall respond to maintenance or additional work ordered by OWNER or governing authorities immediately, but in no case, within not more than 48 hours if required at no additional cost to OWNER.

3.08 Inspection

A. General:

1. CONTRACTOR is responsible to obtain and/or serve as the Certified Operator.
2. Weekly inspections are to be conducted by CONTRACTOR as a minimum, and after every rainfall event. A copy of the inspection report shall be submitted to the agency having jurisdiction, as well as OWNER and ENGINEER.
3. Inspections shall be performed by a person familiar with the site, the nature of the major construction activities, and qualified to evaluate both overall system performance and individual component performance.
4. Inspector must either be someone empowered to implement BMPs in order to increase effectiveness to an acceptable level or someone with the authority to cause such things to happen.
5. Inspector must be certified as a "Storm Water Professional" through the MDEQ storm water training program. Additionally, the inspector shall be properly authorized in accordance with the applicable General Permit to conduct the certified site storm water inspections.

B. Inspection Frequency Reduction:

1. Inspection frequency may be reduced under the following conditions:
 - a. No active onsite construction activities.
 - b. Temporary cover has been provided across the entire site and no BMPs remain. Situation: waiting for grass to grow, but grass is dormant.
 - c. Ground is frozen and/or snow covered.
2. Weekly Storm Water Meeting:
 - a. A weekly storm water meeting will be held by CONTRACTOR with those involved in ground-disturbing activities to review the requirements of the permits, the SWPPP, and address any problems that have arisen in implementing the SWPPP or maintaining the BMPs.
 - b. CONTRACTOR shall maintain a log of weekly meetings and document the issues addressed in the meetings on site.
3. Agency Storm Water Inspections:
 - a. A log of inspections by federal, state, or local storm water or other environmental agencies shall be kept in CONTRACTOR's SWPPP.

- b. The log form should include the date and time of visit and whether a report was issued or will be issued as a result of the inspection.
- c. Any reports issued will be sent to ENGINEER within 24 hours.

3.09 Project Completion

- A. Remove temporary soil erosion and sedimentation control devices as soon as permanent measures have been established.

End of Section

Section 01 7124 Construction Layout

Part 1 General

1.01 Responsibility for Staking

- A. OWNER will set stakes and markers showing the locations on the surface of various parts of the Work as outlined herein. Additional stakes shall be provided at the expense of CONTRACTOR.
- B. CONTRACTOR shall furnish such labor and assistance as OWNER may require in setting the same.
- C. It shall be the responsibility of CONTRACTOR to transfer surface line and grade to the bottom of any tunnel or to the bottom of any other subsurface operations where ordinary surface line and grade is not feasible.
- D. CONTRACTOR shall utilize lasers, or surveying instruments run by qualified competent personnel to control the construction installation Work. If the method being used by CONTRACTOR fails to give proper alignment and grade control to the Work, OWNER shall be empowered to order CONTRACTOR to use such other method(s) as will provide adequate control.
- E. In the event CONTRACTOR presumes a staking inconsistency, CONTRACTOR shall notify ENGINEER immediately to assist in resolving the concern.

1.02 Staking Schedule

- A. CONTRACTOR shall submit a completed staking schedule on the form provided by ENGINEER showing the order in which CONTRACTOR proposes to conduct the construction operation prior to the preconstruction meeting. The schedule shall be submitted to ENGINEER a minimum of three (3) working days prior to the start of construction.
- B. During construction CONTRACTOR shall to the extent possible, limit unnecessary staking requests and coordinate his construction schedule to provide for the efficient and effective use of the survey crew and eliminate excessive survey crew trips to the site.

1.03 Relocation and Re-Establishment

- A. Construction Stakes:
 - 1. Where change of location of stakes has been requested by CONTRACTOR, or where CONTRACTOR fails to properly preserve construction survey stakes, such resetting or relocations of stakes shall be done by ENGINEER and paid for by CONTRACTOR on the basis of time and materials for such re-staking.

B. Survey Control Points:

1. CONTRACTOR shall bear all expense involved in re-establishing and/or resetting any survey control point, land survey point or monument lost or disturbed during his construction operation. Such Work shall be done under the direct supervision of a licensed land surveyor. Such survey control points shall be marked and flagged by ENGINEER prior to construction.

1.04 Staking Existing Drainage

- A. Unless otherwise indicated on the Plans or specified herein, CONTRACTOR shall bear all expenses including the staking of line and grade required to restore proper grading of surface drainage, including swales and ditches disturbed during the construction operation.

1.05 Staking Roadway Without Curb and Gutter

- A. One (1) staking will be provided for each of the following:

1. Clearing Limits:

- a. Clearing limits will be staked if required with wood lath and /or ribbon on trees at 50-foot (20 m) interval or greater as site conditions dictate.

2. Slope Staking:

- a. Slope stakes will be set right and left of centerline at 50-foot (20 m) intervals.
- b. Ditch cut, cut or fill, slope and ditch information, and distance from centerline will be provided on the stake.
- c. Stakes will be set at the slope intersection point.

3. Finish Grade:

- a. After the subbase is placed or prior to placing aggregate base course as appropriate, finish grade will be provided as follows:

(1) Stakes will be placed at 50-foot (20 m) intervals on tangent sections and on curves or spiral curves with a radius of 200-feet (60 m) or greater.

(2) Stakes will be placed at 25-foot intervals on curves or spiral curves with a radius less than 200-feet (60 m).

- B. CONTRACTOR shall be responsible for protecting these stakes, installing additional stakes, and transferring the information provided on the stakes by ENGINEER to other stakes as applicable for his Work.

1.06 Staking Roadway with Curb and Gutter

- A. One (1) staking will be provided for each of the following:
 - 1. Curb Stakes:
 - a. Curb stakes will be provided for top of curb at a predetermined offset as agreed upon by the CONTRACTOR and ENGINEER as follows:
 - (1) Stakes will be placed at 50-foot (20 m) intervals on tangent sections and on curves or spiral curves with a radius of 200-feet (60 m) or greater.
 - (2) Stakes will be placed at 25-foot intervals on curves or spiral curves with a radius less than 200-feet (60 m).
- B. CONTRACTOR shall be responsible for protecting these stakes, installing additional stakes, and transferring the information provided on the stakes by ENGINEER to other stakes as applicable for his Work.

1.07 Staking Miscellaneous Curb and Gutter

- A. Staking for miscellaneous curb and gutter such as curbed driveways or curbed approaches on road intersections shall be provided as follows:
 - 1. Hub at radius point.
 - 2. Offset lath with top of curb at tangent points.
 - 3. Offset lath with top of curb at mid point or 15-foot (3 m) interval on curves.
 - 4. Offset lath with top of curb at 50-foot (20 m) maximum interval on tangent sections.

1.08 Grade Stakes

- A. Stakes provided by ENGINEER shall be along existing grade and identified with paint and/or flagging. Stakes shall include centerline station and offset.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 01 7700 Closeout Procedures

Part 1 General

1.01 Cleaning

- A. CONTRACTOR shall perform periodic cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and wind-blown debris, resulting from construction operations.
- B. Waste material, debris and rubbish shall be periodically removed from the site and disposed of at legal disposal areas away from the site.
- C. Prior to OWNER acceptance CONTRACTOR shall conduct an inspection of sight-exposed interior and exterior surfaces, and all Work areas, to verify that the entire Work is clean.
- D. CONTRACTOR shall broom clean exterior paved surfaces and rake clean other exterior surfaces of the site.

1.02 Project Record Documents

- A. CONTRACTOR shall deliver one (1) copy of all Specifications, Plans, Addenda, Shop Drawings and Samples, annotated to show all changes made during the construction process, to ENGINEER upon completion of the Work. Submittal of the record documents shall be made with a transmittal letter containing:
 - 1. Date
 - 2. Project Title and Number
 - 3. CONTRACTOR's Name and Address
 - 4. Title and Number of each Record Document
 - 5. Certification that each Document as submitted is complete and accurate.
 - 6. Documents shall be submitted in good order and in a legible condition.

1.03 Operation and Maintenance Data

- A. Prior to final inspection or acceptance, CONTRACTOR shall fully instruct OWNER's designated operating and maintenance personnel in the operation, adjustment and maintenance of all products, equipment and systems specified.
- B. Operation and maintenance data required by the individual Specification sections and the manufacturer's operation and maintenance data required in Section 01 3300, Submittal Procedures, shall constitute the basis of such instruction.

1.04 Start Up

- A. CONTRACTOR shall coordinate efforts between OWNER, ENGINEER, any equipment manufacturers, subcontractors and governing agencies in the start up of applicable portions of the Work.

1.05 Substantial Completion

- A. Certification that the Work is substantially complete shall be in accordance with the General Conditions.

1.06 Final Payment and Acceptance

- A. The final inspection, final application for payment and acceptance shall be in accordance with the General Conditions.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

End of Section

Section 01 8900

Site Construction Performance Requirements

Part 1 General

1.01 Scope of Work

- A. This Section includes general performance requirements for earthwork complete with, reimbursement for crop damage, removal and disposal of structures and obstructions, protection of existing sewers, tiles and mains; protection of existing building and improvements, protection of trees and other types of vegetation, protection of utility lines, requirements for pavement replacement, restoration of driveways and parking areas, restoration of sidewalks, restoration of lawns and disturbed areas, transportation, and disposal of excess excavation.

1.02 Related Work Specified Elsewhere

- A. Section 01 5713: Temporary Erosion and Sediment Control

1.03 Reference Standards

- A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:
 - 1. MDOT - Michigan Department of Transportation Standard Specifications for Construction, latest edition.

1.04 Requirements of Regulatory Agencies

- A. CONTRACTOR shall comply with Section 01 5713, Temporary Erosion and Sediment Control. CONTRACTOR, at his expense, shall secure all permits, and post all bonds or deposits required to comply with the "Soil Erosion and Sedimentation Control," requirements, being Part 91 of PA 451 of 1994 as amended.
- B. CONTRACTOR shall comply with all requirements of the National Pollutant Discharge Elimination System (NPDES) Storm Water Program for Construction Activities, Part 31 of PA 451 of 1994 as amended.
- C. CONTRACTOR shall provide, maintain and remove such temporary and/or permanent soil erosion and sedimentation control measures as specified on the Plans or as determined by ENGINEER.
 - 1. Measures shall prevent surface runoff from carrying excavated materials into the waterways, to reduce erosion of the slopes, and to prevent silting in of waterways downstream of the Work.
 - 2. Measures should include provisions to reduce erosion by the wind of all areas stripped of vegetation, including material stockpiles.

1.05 Submittals

- A. Written permission for the use of all disposal and borrow sites shall be obtained and copies shall be furnished to ENGINEER.

1.06 Protection of Plant Life

- A. Trees, shrubs, and other types of vegetation not within the limits of the Work or not designated on the Plans or by ENGINEER to be removed, shall be carefully protected from damage or injury during the various construction operations.
- B. Any tree, shrub or other type of vegetation not designated to be removed but which is damaged by CONTRACTOR's operation shall be repaired or replaced by CONTRACTOR, at his expense, as determined by ENGINEER.

1.07 Protection of Existing Structures and Improvements

- A. existing culverts, sewers, drainage structures, manholes, water gate wells, hydrants, water mains, utility poles, overhead lines, underground conduits, underground cables, pavement, or other types of improvements within the construction limits, not designated on the Plans to be removed, shall be carefully protected from damage during the construction operations.
- B. Existing structure or improvement not designated to be removed, but which is damaged by CONTRACTOR's operations shall be repaired or replaced by the CONTRACTOR, to the satisfaction of the owner, at his expense.
- C. Deposits of dirt or debris in sewers, culverts, tiles, drainage structures, manholes, gate wells, etc. caused by CONTRACTOR shall be cleaned out at the CONTRACTOR's expense.

1.08 Maintaining Drainage

- A. Existing open drains, field and roadway ditches, drainage tile, sewers, enclosed drains, natural and artificial watercourses, surface drainage or any other types of drainage within the limits of the Work shall be maintained and free to discharge during construction.
- B. Drainage facility not designated to be abandoned, but which is damaged, or any drainage interrupted by the CONTRACTOR's operation shall be immediately repaired, replaced, or cleared by the CONTRACTOR.
- C. Costs incurred shall be incidental to the excavating, backfilling and compacting or grading operations.

Part 2 Products

2.01 Granular Material

- A. Bank run sand meeting the requirements of MDOT, Granular Material Class II.

2.02 Aggregate for Shoulders, Parking Areas, Driveways or Roads

- A. Crushed Limestone, Natural Aggregate or Slag and meeting the requirements of MDOT Section 902.

Part 3 Execution

3.01 Dewatering

- A. The area within the vicinity of the new Work shall be dewatered prior to commencing any construction activities. The depth of the dewatering shall be sufficient to allow the Work area to remain in a dry condition during the various construction operations.
- B. Costs incurred for furnishing, installing, maintaining and removing the dewatering equipment shall be at CONTRACTOR's expense.
- C. Refer to Section 31 2319, Dewatering, for additional requirements.

3.02 General

- A. The various construction operations shall be restricted to the existing right-of-way or the areas indicated on the Plans. If CONTRACTOR requires additional area, CONTRACTOR shall furnish the ENGINEER with written permission obtained from the property owner for any part of the operations he conducts outside of the right-of-way or limits indicated.

3.03 Existing Improvements

- A. CONTRACTOR shall expose existing sewers and structures to which the new Work is to be connected and notify ENGINEER of same. ENGINEER will verify the vertical and horizontal locations of the existing system and shall inform CONTRACTOR as to the necessary adjustments required to align the new Work with the existing system.

3.04 Existing Utilities

- A. When existing utilities are shown on the Plans, their locations are approximate only, as secured in the field investigation and/or from available public records. CONTRACTOR, prior to the start of construction, shall contact Miss Dig and the public agency or utility having jurisdiction to request the verification of all utilities within the construction area.
- B. When existing utility lines, structures or utility poles are encountered during the performance of the Work, CONTRACTOR, at his expense, shall perform his operations in such a manner that the service will be uninterrupted.
- C. CONTRACTOR shall expose all existing utility lines prior to any excavation operation, to determine any conflict with the proposed improvement. CONTRACTOR shall be responsible for any relocation required as a result of any conflict of existing utilities shown on the plans, with the proposed improvement.
- D. Should it become necessary to move any utility structure, line or pole shown on the Plans or otherwise found necessary to be moved, CONTRACTOR shall make all arrangements with OWNER of the utility for the moving. costs incurred for such moving shall be at CONTRACTOR's expense unless indicated otherwise. However, before disturbing a utility line, structure or pole, CONTRACTOR shall furnish ENGINEER with satisfactory evidence, in writing, that proper arrangements have been made with the owner of the utility.

3.05 Utility Poles

- A. CONTRACTOR shall be responsible for any removal or relocation required as a result of any conflict of existing utility poles (including street light poles, guy poles, telephone poles, etc.) with proposed improvements.
- B. CONTRACTOR shall make all arrangements for removing or relocating utility poles with the owner of the utility pole.

- C. Prior to disturbing any utility pole, CONTRACTOR shall provide ENGINEER with written evidence that proper arrangements have been made with the owner of the utility pole.
- D. When required by the Work, CONTRACTOR shall temporarily support poles in the vicinity of the Work at no additional cost to OWNER. Support shall be in accordance with and to the satisfaction of the utility company.

3.06 Existing Sewers, Tile, and Mains

- A. Existing sanitary sewers, storm sewers, drain tile, septic tank bed tiles, water mains or building services or leads, that are encountered during the performance of the Work that require relocation or are damaged, shall be restored with new materials equal in quality and type to the materials encountered.
- B. New material shall be installed as specified in the Contract Documents and per the requirements of the local agencies. Bedding and backfill material, unless otherwise specified, shall be an approved Class II granular material, compacted to 98% of its maximum unit weight.
- C. Seepage bed tile and water mains shall be replaced in accordance with the requirement of the agency having jurisdiction.
- D. Relocation or protection of existing sewers, tiles, tile field, water mains or building services and leads shall be at CONTRACTOR's expense, unless otherwise indicated in the Contract Documents.

3.07 Existing Structures

- A. Existing surface and subsurface structures may be shown on the Plans, in locations considered most probable from information secured in the field investigation or from available public records.
- B. Neither the correctness nor completeness of such information is guaranteed or implied.
- C. Structures shall be protected, preserved or restored by CONTRACTOR, to the satisfaction of the structure owner, at no additional cost to the Project.

3.08 Existing Buildings

- A. Existing buildings or structures may be encountered throughout the Project within limits of the presently established right-of-way or easement. Good construction methods and procedures shall be employed by CONTRACTOR, at his expense, to protect the structures.
- B. When it becomes necessary for CONTRACTOR to move one of these buildings or structures in order to proceed with construction, CONTRACTOR, at his expense, shall exercise all due care in moving the building or structure to prevent undue damage.
- C. Prior to moving an existing building or structure, CONTRACTOR shall furnish ENGINEER with satisfactory evidence, in writing, that proper arrangements have been made with the owner.
- D. Unless otherwise specified in the Contract Documents, the length of the move shall be maintained to a minimum which will allow for construction of the improvement.

3.09 Removal of Sewers and Culverts

- A. Unless otherwise specified in the Contract Documents, CONTRACTOR, at his expense, shall remove any abandoned culvert, pipe, sewer, structure or part of a structure which is to be replaced or rendered useless by the new construction.
- B. When a sewer or culvert is removed at a structure, ONTRACTOR shall install a masonry bulkhead in the structure.
- C. Removal of a culvert or sewer also includes the removal and disposal of end treatments or headwalls.

3.10 Removal of Structures

- A. Removal of existing structures shall consist of removing and salvaging the existing frame and cover. The ends of the existing pipe shall be plugged and braced. The complete structure shall be removed entirely and disposed of. The excavation shall be backfilled with sand and compacted to 98% of its maximum unit weight. Maximum unit weight shall be determined by ASTM D698, Method B.
- B. If a structure is to be removed from a system that is to remain in service, a bypass system, approved by ENGINEER, shall be installed and maintained by the CONTRACTOR, during the rebuilding period.

3.11 Abandoning Structures

- A. Structure shall be broken down to at least 30 inches (750 mm) below the subgrade.
- B. Pipes connected to the structure shall be plugged with a brick, masonry or concrete bulkhead approved by ENGINEER.
- C. Structure shall be backfilled with flowable fill to 1-foot (300 mm) above the pipes and the remainder of the structure backfilled with sand-cement mixture at a 10 to 1 ratio to subgrade elevation or to 1-foot (300 mm) below finished grade.
- D. The remainder of the excavation shall be backfilled with a granular material, compacted to 98% of its unit weight, and shall meet with the approval of ENGINEER.
- E. Maximum unit weight shall be determined by ASTM D698, Method B.

3.12 Salvaged Material

- A. Salvaged materials shall become the property of CONTRACTOR unless otherwise specified in the Contract Documents, and shall be disposed of by CONTRACTOR, at his expense.

3.13 Crop Damage

- A. In areas where crops are encountered along the route of the construction, a written agreement shall be arrived at by CONTRACTOR and the crop owner as to the type and nature of the crop concerned prior to any construction within the area.
- B. CONTRACTOR shall be responsible for making full reimbursement to the owner of the crop damage on the basis of the following procedure:

1. Area of the crop damage shall be determined by measurements taken by ENGINEER, and this area shall include those portions of the crop which may extend into the public right-of-way.
 2. Average yield of the crop shall be established by the County Office of the U.S. Agricultural Extension Service.
 3. Cost of the crop shall be determined by using the prevailing price at the time of harvest as furnished by the U.S. Agricultural Extension Service.
- C. CONTRACTOR shall furnish ENGINEER with satisfactory evidence that payment for crop damage was made, prior to receiving final payment on the Project.

3.14 Trees

- A. Trees excepting those specified on the Plans to be removed, shall be effectively protected by CONTRACTOR during his construction operations.
1. If in the opinion of ENGINEER, the methods of protection employed by CONTRACTOR are not adequate, CONTRACTOR shall carry on his operation by tunneling, or by other approved means, which will not cause undue damage to the trees.
- B. The requirements for tree tunneling are as follows:
1. Depth of Cover:
 - a. Tunnels shall be placed at a minimum depth of 30 inches (0.75 m), measured from the ground surface to the top of the tunnel.
 2. Length of Tunnel:
 - a. Tunnel length in feet (meters) shall be in direct proportion to diameter of tree in inches (millimeters) for trees eight (8) inches (200 mm) or larger in diameter. One (1) foot of tunnel shall be constructed for each inch of tree diameter whenever the trench or any portion thereof approaches the tree trunk a distance in feet equal to one-half the tree diameter in inches.
 - b. Example: A tree 12 inches in diameter shall require a 12-foot tunnel whenever the trench or any portion thereof approaches within six (6) feet of said tree.
 3. Measurements:
 - a. Trees under 8 inches in diameter will require the same length of tunnel as 8-inch trees. Measurements of tree diameters shall be taken four (4) feet above the ground surface.
- C. Where the Plans indicate areas allowing the cutting of minor trees, care should be used to keep damage to adjacent trees to an absolute minimum. Where these areas are specifically indicated on the Plan, they are to be cleared and all trunks and branches shall be disposed of by CONTRACTOR. Debris shall not be bulldozed on to adjacent private property.

- D. Trees damaged by the construction operation shall be repaired so not to inhibit growth or replaced at the expense of CONTRACTOR. Repair or replacement shall be contingent upon agreement between the damaged tree owner and CONTRACTOR. In any event, limbs, branches and roots damaged by CONTRACTOR shall be properly pruned to the satisfaction of ENGINEER.
- E. Costs incurred for protection of trees, including tunneling, repair and replacement, if necessary, shall be at CONTRACTOR's expense.

3.15 Removing Pavement

- A. Removal of concrete and bituminous pavement as called for on the Plans shall consist of removing and disposing of pavement and shall include base courses, surface courses, integral and separate curbs, integral and separate curb and gutters, sidewalks and end headers.
- B. Pavement shall be removed to an existing joint or cut parallel to the existing pavement joints.
- C. Cutting shall be accomplished by using a power-driven concrete saw approved by ENGINEER. Depth of the saw cut shall be a minimum of 6-inches, to insure that the removal of the old pavement will not disturb or damage the section of pavement remaining in place.
- D. Residual concrete pavement shall not be less than five feet measured transversely, nor less than 6 feet longitudinally measured from a joint.
- E. In removing a concrete base course, where part of the existing bituminous surface is to remain in place, the bituminous surface shall be cut the full depth by the use of a power-driven saw, approved by ENGINEER along a line parallel to and at least one foot from either side of the base course removal.
- F. Old pavement with a concrete cap shall be considered as only one (1) pavement, whether or not there is a separation layer of earth, aggregate, or bituminous material between the old material and the concrete cap.
 - 1. Removal of Curb for Curb Drop:
 - a. Where curb is to be removed for a curb drop, the operation shall be performed by saw cutting or by cold milling, approved by ENGINEER, so as to leave a neat surface with a maximum 1-inch lip, without damage to the underlying pavement.
 - 2. Removal of Curb and Gutter:
 - a. Where curb and gutter are to be removed, the operation shall be performed by saw cutting. The limits of the removal shall be as called for on the Plans, or as approved by ENGINEER. However, in no case shall the width of removal be less than 18 inches for sections with rolled or straight curb or less than 24 inches for mountable curbs.
- G. If during the pavement removal operation any concrete or bituminous pavement or surfacing is damaged beyond the removal limits designated, the damaged pavement or surfacing shall be removed and replaced at CONTRACTOR's expense.

- H. Earth which may be removed during the pavement removal operation shall be replaced by backfilling to the proposed subgrade with a suitable material, approved by ENGINEER, at CONTRACTOR's expense.

3.16 Guardrail

- A. Beam guardrail shall be relocated or shall be removed as specified on the Plans or as determined by ENGINEER. If any of the existing material is damaged or destroyed, CONTRACTOR shall replace the material at his expense.
- B. Where guardrail is encountered during construction, and its removal was not called for on the Plans, it shall be replaced or restored, at CONTRACTOR's expense, to a condition comparable to that prior to construction.
- C. After the guardrail removal or relocation operations are complete, all surplus material shall be removed and disposed of by CONTRACTOR, at his expense, unless otherwise called for in the Contract Documents.
- D. Any holes or voids resulting from the guardrail removal operation shall be backfilled with a Class II granular material, approved by ENGINEER.

3.17 Fences

- A. Fences shall be removed and replaced or shall be removed as indicated on the Plans. If any of the existing material is damaged or destroyed, CONTRACTOR shall replace the material at his expense.
- B. Where fencing is encountered during construction, and its removal was not called for on the Plans, it shall be replaced or restored, at CONTRACTOR's expense, to a condition comparable to that prior to construction.
- C. After the fence removal or relocation operations are complete, all surplus material shall be removed and disposed of by CONTRACTOR, at his expense, unless otherwise called for in the Contract Documents.
- D. Any holes or voids resulting from the fence removal operation shall be backfilled with a suitable material, approved by ENGINEER.
- E. Where fences are encountered that are being used to confine livestock or to provide security, the fence shall be immediately replaced following construction. During construction, CONTRACTOR, at his expense, shall provide, install and maintain a temporary fence, meeting the approval of ENGINEER.

3.18 Holes

- A. Earth removed during any phase of the excavation or removal operations, resulting in a hole or void, shall be replaced by backfilling to the proposed subgrade with a suitable granular material. Material shall be placed by the controlled density method or other effective means having the approval of ENGINEER and shall be compacted to 95% of maximum unit weight.
- B. Furnishing, placing and compacting of the backfill material shall be at CONTRACTOR's expense.

3.19 Restoration in Right-of-Way and Yard Areas

- A. Right-of-way and yard areas not paved or aggregate surfaced shall be restored in accordance with the type and location specified herein unless indicated otherwise on the Plans. Disturbed areas may be shaped by "Machine Grading" or another method approved by ENGINEER to achieve the cross section, line and grade shown on the Plans. Areas where slopes are 1 on 4 or flatter shall be restored with topsoil, seed and mulch. Slopes steeper than 1 on 4 shall be restored with sod.
- B. Excess material from the restoration operation shall be disposed of by CONTRACTOR at his expense.
- C. Disturbed areas shall be graded to receive either topsoil and seed or topsoil and sod. Topsoil, seed, sod, fertilizer and mulch shall conform to the requirements specified on the Plans and in Section 32 9219, Seeding, or Section 32 9223, Sodding.
- D. CONTRACTOR, at his expense, shall furnish, place, and compact any additional fill, meeting the approval of ENGINEER, needed to restore the disturbed areas to the cross sections called for on the Plans or as determined by ENGINEER.

3.20 Restoration of Aggregate Surfaces

- A. Shoulders:
 - 1. Shoulder shall be regarded as the area between the edge of pavement and the ditch, or the area within 10 feet of the pavement, whichever is the lesser.
 - 2. Backfilling of trenches in the shoulder area shall be carried to within 5 inches of the existing surface as specified under Trench "A" or Trench "B." The remaining depth shall be backfilled with a minimum of 5 inches of compacted 22A or 23A aggregate with calcium chloride applied, at the rate of 6 pounds per Ton of aggregate .
 - 3. CONTRACTOR, at his expense, shall furnish, place and compact all materials necessary to complete the backfilling and restoration operation within the shoulder area.
- B. Driveways and Parking Areas:
 - 1. Aggregate driveway areas shall be regarded as the area from the right-of-way line to the edge of the traveled roadway and shall include the shoulder area.
 - 2. Backfilling of trenches crossing aggregate surfaced driveways and parking areas shall be carried to the bottom of the proposed base course as specified under Trench "B". The remaining depth shall be backfilled with a minimum of 6 inches of compacted 22A or 23A aggregate, with calcium chloride applied at the rate of 6 pounds per Ton of aggregate.
 - 3. Aggregate surfaced areas beyond the limits of the actual excavation which are disturbed, as determined by ENGINEER, by such operations as temporary storage of materials or passage of equipment, shall be resurfaced, at CONTRACTOR's expense.

- a. Upper 3 inches of disturbed areas shall be removed as necessary to allow the final elevation of the resurfacing course to be at the elevation of the drive or parking area which existed prior to excavation.
 - b. Disturbed area shall be resurfaced with a minimum of 3 inches of compacted 22A or 23A aggregate, with calcium chloride applied at the rate of 6 pounds per Ton of aggregate
4. CONTRACTOR, at his expense, shall furnish, place, and compact all materials necessary to complete the backfilling and restoration operations within the driveway and parking area.
- C. Roads and Streets:
1. Backfilling of trenches crossing aggregate surfaced roads or streets shall be carried to within 12 inches of the existing surface as specified under Trench "B." The remaining depth shall be backfilled with two 6-inch layers of compacted 22A or 23A aggregate, with calcium chloride applied at the rate of 6 pounds per Ton of aggregate.
 2. CONTRACTOR, at his expense, shall furnish, place, and compact all materials necessary to complete the backfilling and restoration operations within the roadway or street area.
 3. Also, any settlement of the aggregate surface shall be restored by placing additional aggregate, up to the original grade, and shall be done at the CONTRACTOR's expense.
- D. Compaction:
1. Compaction of all aggregate shall be performed by a pneumatic-tired roller or a vibratory compactor until the material forms a stable surface.

3.21 Restoration of Paved Surfaces

- A. CONTRACTOR, at his expense, shall provide the materials necessary to complete the backfilling and restoration operations, which shall include furnishing, compacting, forming, placing, rolling, floating, jointing, finishing, curing and providing protection against elements.
- B. Restoration of any roadways that are partially damaged shall include a minimum replacement of one (1), full width lane of roadway. The length of replacement shall be at least equal to the width.
- C. Concrete:
 1. Backfilling of trenches crossing concrete driveways, sidewalks, roads, streets or parking areas shall be carried to the bottom of the proposed pavement as specified under Trench "B"
 2. Unless otherwise specified on the Plans or as determined by ENGINEER, the concrete removed shall be replaced with 3,500 psi concrete of the thickness removed and shall include reinforcing equal to the existing, if the existing pavement was reinforced.

- a. The construction of concrete pavements shall be in accordance with Section 32 1313, Concrete Paving.
 3. Restoration of sidewalks shall also include the construction of sidewalk ramps at the intersection of the curb and shall conform to the current rules and regulations of Act 8, Michigan PA 1973, as amended and to Section 32 1315, Sidewalks and Driveways, and unless otherwise indicated in the Proposal, shall be considered incidental to the Project.
- D. Bituminous:
1. Backfilling of trenches crossing bituminous driveways, sidewalks, roads, streets or parking areas shall be carried to the bottom of the base course as specified under Trench "B."
 2. Bituminous pavement or bituminous surface course with an aggregate base shall be replaced in accordance with Section 32 1216, Bituminous Paving.
 3. Bituminous surfaced areas beyond the limits of the actual excavation which are disturbed by such operations, as temporary storage of materials or passage of equipment, shall be resurfaced with an approved bituminous mixture the same thickness as removed, but in no case less than 2 inches in thickness. Replacement material shall extend to smooth-cut edges, shall be uniform in direction and shall be at an elevation which provides a uniform surface between the undisturbed abutting surfaces.
 4. Restoration of any bituminous chip seal shoulders that are damaged or partially damaged, as determined by ENGINEER, shall include complete replacement full width and length (extending a minimum of 25 linear feet beyond the damaged area both ways). Existing bituminous chip seal shoulders shall be brought to proper grade with compacted 22A or 23A aggregate and resurfaced with a double chip seal per Section 32 1216, Bituminous Paving.

3.22 Soil Erosion and Sedimentation Control

- A. CONTRACTOR shall comply with the requirements of Section 01 5713, Temporary Erosion and Sediment Control. Prior to commencing any type of earthwork, CONTRACTOR shall obtain a Soil Erosion and Sedimentation Control permit from the local enforcing Agency.
- B. CONTRACTOR, at his expense, shall obtain all approvals, secure all permits and post all bonds and deposits required to comply with the Soil Erosion and Sedimentation Control Act, Part 91 of PA 451 of 1994, as amended, and those of the enforcing agency.
- C. CONTRACTOR shall provide ENGINEER with a copy of the soil erosion permit issued by the local enforcing agency for the Project, prior to commencing any type of earthwork on the Project.

3.23 Excess Excavation

- A. Excess excavation shall be defined as all surplus earth material realized from the construction that is free of brush, roots, stumps, broken concrete, pipe, debris, and other extraneous material.
- B. CONTRACTOR, when requested by OWNER, shall transport all excess excavation to a site(s) designated by OWNER.

1. Excess excavation shall be graded by CONTRACTOR to provide positive surface drainage of the site(s).
 2. Grading shall be done such that adjacent properties are not damaged or affected. The grading shall include removal of all surface irregularities to provide a smooth surface (± 0.25 foot).
- C. When the excess excavation has not been requested by the OWNER, CONTRACTOR shall remove and properly dispose of the material at no additional cost to OWNER.
- D. Proper disposal of all excess excavation, including transportation, grading, and protection of adjacent properties shall be considered as a final cleanup item. No additional payment will be made for this item.
- E. Brush, roots, stumps, broken concrete, pipe, debris, and other extraneous material from the construction shall become the property of CONTRACTOR, and shall be disposed of per all applicable Laws, rules or regulations. Removal and disposal of this material shall be considered as part of final cleanup. No additional payment will be made for this item.
- F. OWNER approval of the final site(s) condition in writing will be required prior to final payment authorization.

End of Section

Special Provisions

NOTICE TO BIDDERS

UTILITY COORDINATION

CCRC:WT:PMR

1 of 1

08/18/2023

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 109.05 of the MDOT Standard Specifications for Construction.

a. Description - For protection of underground utilities and in conformance with Public Act 368, the Contractor shall dial 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.

b. Public Utilities – The following Public Utilities have facilities located within and/or adjacent to the project Right-of-Way:

<u>Name of Owner</u>	<u>Contact</u>	<u>Kind of Utility</u>	<u>Phone Number</u>
AT & T	Jeff Collard	Telephone	(231) 348-8010
Great Lakes Energy	Steve Murray	Electric	(231) 487-1318
Charter Communications	Steve Thinel	Cable	(231) 631-5725

The Owners of existing service facilities that are within grading or structure limits will move them to locations designated by the Engineer or will remove them entirely from the road right-of-way. Owners of Public Utilities will not be required by the County to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor's operations.

All construction signing for full or half width construction shall also be coordinated with the utility companies in order to avoid conflicting construction operations that hinder traffic mobility. All work shall be coordinated by the Contractor with the utilities in order to maintain local traffic and keep the Construction Influence Area (C.I.A.) to a minimum.

Special Provision For HMA Mixture Acceptance

WT:CCRC:PMR

8/21/23

a) **Description**

This Special Provision provides acceptance-testing requirements for use on this project. The HMA mixture shall be provided to meet the standard specifications for construction except where modified herein. The HMA mixture quality assurance and acceptance shall conform to Section 501 of the 2020 Michigan Department of Transportation Standard Specifications for Construction except where modified herein. The MDOT HMA Production Manual, current edition, applies to this work.

b) **Submittals**

The contractor shall submit the following:

1. Job Mix Formula (MDOT Form 1911 or equivalent) for the project for review and approval by the Engineer. The Contractor shall not place any HMA without an approved JMF. Below are specific values required on the JMF (in addition to the normal requirements).
 - i. Fine Aggregate Angularity
 - ii. RAP Tiering based on JMF values
 - iii. Fines to Asphalt Ratio (based on Effective Asphalt Content)
 - iv. Soft Particle Percentage of each JMF Aggregate Type
2. Quality Control Plan.
3. A copy of all Contractor Quality Control Tests submitted within 7 working days of project completion.
4. A copy of the Bill of Lading or Delivery Ticket for the Asphalt Binder for the project. The Bill of Lading must include the type of material previously hauled in the delivery tank.

c) **Materials**

Aggregates, mineral filler (if required), and asphalt binder shall be combined as necessary to produce a mixture proportioned within the master gradation limits and meeting the uniformity tolerances listed in Table 1 and the quality assurance testing tolerances listed in Table 2 of this special provision. The master gradation range is to be used for establishing mix design only. Topsoil, clay or loam shall not be added to aggregates used in plant produced HMA mixtures.

The Maximum Percentage of Soft Particles for any HMA mixture shall be 6%.

Table A: HMA Mixture Targets and Parameters

HMA Mix Type	VMA Minimum on any given Test (a,c)	VMA Target (c)	Asphalt Binder Content Minimum on JMF	Asphalt Binder Content Minimum on any given Test (a)	Fines to Asphalt Ratio Maximum on JMF (b)
4EL, Base	14.0	Based on mix design parameters, the contractor shall establish & state their VMA Target on their mix design JMF, and shall adhere to the VMA Min. requirements.	5.50	5.20	1.10
4EL, Top	14.0		5.80	5.50	1.10
5EL	15.0		6.10	5.80	1.10
Ultra-Thin	15.0		6.00	5.70	1.20
a. The HMA parameter minimum is per any given QC/QA test, regardless of Tolerances listed in Table 2 of this Special Provision. b. Value based on Pbe (Effective Asphalt Percent) for each given mix and JMF. c. VMA values are based on the Gsb (Bulk Specific Gravity) of the given HMA mixture not the Gse (Effective Specific Gravity).					

Table B: HMA Mixture Targets and Parameters Cont'd (Ultra-Thin)

Superpave Air Voids (%)	4.5
Superpave Gyration	35
Fine Aggregate Angularity (Min.)	40.0
Percent Crush (Min. %)	50.0
Aggregate Wear Index (AWI)	220
Sieve Size	Total % Passing
1/2 inch	100
3/8 inch	99-100
No. 4	75-95
No. 8	55-75
No.30	25-45
No. 200	3-8

d) **Asphalt Binder**

Liquid Asphalt Binder shall be a Performance Graded (PG) binder as specified in the bid documents and/or approved by the Road Commission.

e) **Air Voids**

Design Air Voids shall be 4.0% and shall be regressed to 3.0% in production **by the addition of virgin liquid asphalt.**

f) **Recycled Asphalt Materials**

Recycled Asphalt Pavement (RAP) is allowed in the HMA mixtures subject to the following requirements. Binder replacement will be determined by weight. **Reclaimed Asphalt Pavement (RAP) use limited to Tier 1 (0% to 17%) RAP binder by binder total weight in the mixture, for all mixes (4EL, 5EL, and Ultra-Thin).**

Recycled Asphalt Shingles (RAS) not allowed in the HMA Mixtures.

g) **Construction**

After the Job Mix Formula is established, the aggregate gradation of the HMA mixture furnished for the work shall be maintained within the Range 1 uniformity tolerance limits permitted for the job-mix-formula specified in Table I. However, if deviations are predominantly either below or above the job-mix-formula, the Engineer may order alterations in the plant to bring the mixture to the job-mix-formula. If two consecutive aggregate gradations on one sieve as determined by the field tests are outside Range 1 but within Range 2 tolerance limits, the Contractor shall suspend all operations. Contract time will continue during these times when the plant is down. Before resuming any production, the Contractor shall propose, for the Engineer's approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained. The Engineer, after evaluating for effects on AWI and mix design properties, will approve or disapprove such alterations.

Random Liquid Asphalt Binder samples will be witnessed by the Engineer or Consulting Firm. The Engineer reserves the right to test any or all samples taken.

The crushed particle content of the aggregate used in the HMA mixture shall not be more than 10 percentage points above or below the crushed particle content used in the job-mix-formula nor less than the minimum specified for the aggregate in the project documents.

Quality Assurance and Acceptance testing will be as follows:

- I. **Asphalt Mixture Sampling** Acceptance sampling and testing will be performed by the Engineer using the sampling method and testing option agreed upon by the Engineer and Contractor. Each day of production, random samples will be obtained for each mix type. Acceptance testing will be performed at a frequency specified by the Engineer.

For each given day of production, if the daily mix tonnage per HMA mix type is under 500 tons, the Engineer reserves the right to test one sample and obtain a second sample for future testing if necessary. If the daily mix tonnage per HMA mix type is over 500 tons, the Engineer reserves the right to test one sample. If the first sample meets the Range 1 tolerances in Table I and Table 2, the Engineer can obtain a second sample and perform any of the following actions:

- a) Perform Full Quality Assurance testing
- b) Perform Volumetric Testing Only (Ignition or Extraction AC/Gmm, Air Voids, VMA)
- c) Retain custody of the sample for future testing if necessary

2. Asphalt Binder Sampling

The Contractor shall obtain the asphalt binder sample, correctly label the sample container, and complete a Sample Identification (Bituminous Material Form 1923B). The form must be filled out correctly and completely, and signed before the sample is given to the Engineer. The daily asphalt binder sample must be taken from a sampling spigot located on the pipeline supplying asphalt binder to the plant, in a position between the asphalt binder pump and the point where the asphalt binder is introduced to the aggregate mixture. Personnel safety is critical in selection the position of the sampling spigot. Give the binder sample and completed Form 1923B to the Engineer.

Daily Asphalt Binder Sample are to be in 1 pint (16 ounce), slip top, seamless ointment tins. The tin must be at least three quarters full. All containers must be labeled in a legible format with the following information provided:

- a. Project Name
- b. Binder Grade
- c. Binder Supplier Certification Number
- d. Supplier Name, City, and State
- e. Date Sampled
- f. Mixture Type

The Engineer may request to witness the sampling of the asphalt binder upon visit to the HMA Plant. The Engineer will complete the 1923B Form for the witness sample. The witness sample will be recorded as the daily asphalt binder sample. Any other asphalt binder samples from that same day will be discarded.

The Engineer may request a copy of the MDOT Binder Certification Documents. These copies must be presented to the Engineer when the respective daily binder samples and the 1923B Forms are picked up at the plant. The Engineer will review these documents and communicate any problems that may arise.

3. Mixture Testing

Mixture samples will be tested to verify gradation, binder content, and volumetric properties per Table 1 and Table 2 listed below.

If the Engineer elects not to perform Quality Assurance testing on a given day or a given project, the Contractor is required to still perform testing in accordance with Table 1 and Table 2 below. The Contractor’s Quality Control test results shall be sent to the Engineer within 2 working days of each day’s productions for a given HMA mixture.

Table 1: Quality Assurance/Control Tolerance Limits for HMA Mixtures

Parameter	Action Limits (Range 1)	Suspension Limits (Range 2)
% Passing the #8 and Larger Sieves	+/- 5.0%	+/- 8.0%
% Passing the #30 Sieve	+/- 4.0%	+/- 6.0%
% Passing #200 Sieve	+/- 1.0%	+/- 2.0%

Table 2: Quality Assurance/Control Testing Tolerance (+/-) from JMF or Target Values

Parameter	Action Limits (Range 1)	Suspension Limits (Range 2)
Binder Content (a)	0.30% (a)	0.50% (a)
Maximum Specific Gravity (Gmm)	0.013	0.020
Voids in Mineral Aggregate VMA (a,b)	0.75% (a,b)	0.80% (a,b)
Air Voids (c)	0.60%	0.90%
Fines to Effective Asphalt Ratio	0.65-1.20	0.60-1.25
a. Refer to minimum parameters in Table A of this special provision.		

- b. These given limits are (+/-) from given targets in Table A of this special provision.
- c. Limits are (+/-) from JMF/Target Value listed in Section e. of this special provision.

4. **Density**

Pavement density will be measured by the Engineer, with a Nuclear Density Gauge, using the Gmm from the JMF for the density control target. The in-place density of the HMA mixture shall be at least 92.0% of the density control target. In-place density will be calculated by averaging four QA density test locations. Test locations will not be taken within 12 inches of any pavement edges or pavement joints.

h) **Rejected Materials**

1. **Gradation**

Action Limits - Range of values established in Table I – Quality Assurance/Control Tolerance Limits for HMA Mixtures. If exceeded on two consecutive tests, Contractor is required to take corrective action to bring the mixture produced into conformance with the specifications.

Suspension Limits – Range of values established in Table I – Quality Assurance/Control Tolerance Limits for HMA Mixtures. If exceeded on a single test, Contractor is required to suspend operations and determine, document, and correct the cause before resuming production. Prior to resuming production, the Engineer must be notified of the findings and approve correction action prior to resuming production.

2. **Asphalt Binder**

If a liquid asphalt binder sample does not meet the required specification, the mix produced from the point of the last liquid asphalt binder sample meeting specification to the failed sample shall be considered defective and shall be replaced at the sole expense of the Contractor.

3. **Volumetric Properties**

The acceptable tolerance for Binder Content, Gmm, VMA, Air Voids, and Fines to Pbe are listed in Table 2 above. Any HMA Mixture produced outside of these tolerances or any HMA Mixture that does not meet the requirements listed in the sub notes of Table 2 above will be subject to a negative adjustment or rejected. The resulting penalty will be a negative adjustment of 10% to 50% or remove/replace, to be determined by the Engineer.

4. **Pavement Density**

A negative 10% adjustment in the HMA Mixture contract price will be imposed if the pavement density (average of all gauge readings) is less than 92%, but equal to or greater than 91%; or if 2 or more readings are less than 91%.

A negative 25% adjustment in the HMA Mixture contract price will be imposed if the pavement density (average of all gauge readings) is less than 91%, but equal to or greater than 90%; or if 2 or more readings are less than 90%.

If the average density is less than 90% (for all gauge readings), the Contractor shall remove and replace the pavement at no cost to the Owner.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
HOT MIX ASPHALT SPILLWAY

TRV:LCP

1 of 1

APPR:KPK:MJB:03-03-21

a. Description. This work consists of constructing hot mix asphalt (HMA) spillways at the locations shown on the plans. Complete this work in accordance with section 814 of the Standard Specifications for Construction, except as modified by this special provision.

b. Materials. Use the same HMA mixture to construct the spillway as specified for the adjacent shoulder or gutter or as specified for top course on the project if there is no adjacent shoulder gutter.

c. Construction. Construct HMA Spillway in accordance with the details shown on the plans.

1. Preparation of Base. Shape and compact base to the required cross section. Install geotextile lining under HMA spillways as shown on the plans, or as required by the Engineer.

2. Placing HMA Mixture. Place HMA mixture on the prepared base at the application rate shown on the plans. Pave the spillway at the same time the adjacent HMA shoulder, gutter, or mainline (if there is no adjacent shoulder or gutter) is paved. No cold joint is permitted. Place and compact by mechanical or hand methods, as approved by the Engineer.

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

Pay Item	Pay Unit
HMA Spillway	Square Yard

HMA Spillway includes furnishing and placing HMA mixture, geotextile (when required), and removing and disposing of surplus material for the installation of geotextile and liner. Riprap used in conjunction with HMA Spillway will be measured and paid for separately.

CHARLEVOIX COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
SLOPE RESTORATION, SPECIAL

LTBBOI:WT:PMR

1 of 2

08/18/2023

a. Description. - The work shall consist of furnishing, hauling, and spreading, Mulch, Seed, Topsoil, and Chemical Fertilizer Nutrients; and Anchoring Mulch (Tackifier) materials on areas which have been seeded or planted in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction.

b. Materials. - All materials shall be in accordance with Section 816 of the 2020 Standard Specifications for Construction with the following exceptions/notations:

1. **Seeding Mixture-** The seeding mixture to be used on this project shall be TDS in accordance with and to be applied at rates indicated in Section 816 of the 2020 Standard Specifications for Constructions with the following exception:

Tests for purity and germination will not be required; however, the Contractor shall submit tickets from each bag of seed verifying the manufacturer's germination requirement and date of manufacture. Seed mixtures other than that listed above shall not be used unless prior approval is obtained from the Engineer.

2. **Mulch-** Hay or Straw mulch may be used. A tackifier from the Qualified Products List shall be used to hold mulch in place. Asphalt emulsion will not be allowed. Mulch and tackifier shall be in accordance with and applied at rates indicated in the 2020 Standard Specifications for Construction.

3. **Topsoil** – shall consist of at least 3-inches of material salvaged from the project **or material imported to the project if necessary.** All material shall meet the 2020 Standard Specifications for Construction.

4. **Chemical Fertilizer Nutrients** – Class A in accordance with and to be applied at rates indicated in the 2012 Standard Specifications for Construction.

c. Construction Methods - All work shall be performed in accordance with Section 816 of the 2020 Standard Specifications for Construction for all items included.

d. Measurement and Payment - The completed work, Slope Restoration including all materials, labor, and equipment, as measured will be paid for at the contract unit price for the following contract item (pay item).

PAY ITEM

PAY UNIT

Slope Restoration, Special

Square Yard

The completed work will be paid for at the contract unit price for which shall be payment in full for the work specified. Slope Restoration, Special will be measured in place along the restored area. Class A slopes will be required on all lawn areas and Class B slopes along all roadside areas. The slope restoration shall include areas between the proposed aggregate shoulder and the slope stake line,

or as otherwise directed by the Owner and/or Engineer. Stabilization of disturbed areas ten feet outside of slope stake lines in fill areas, except adjacent to wetlands shall be the responsibility of the Contractor.

The placement of Mulch Blanket, High Velocity will be paid for separately, and is not included in payment for Slope Restoration.

LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS

SPECIAL PROVISION
FOR

HMA, ULTRA-THIN OVERLAY

LTBBOI:WT:PMR

1 of 4

10/02/2023

Description:

Contractor will furnish and place a HMA Ultra-thin Overlay. HMA Ultra-thin Overlay will meet the following specifications for materials and construction. All work for placement and compaction of HMA Ultra-thin Overlay shall conform to all applicable sections of the Michigan Department of Transportation 2020 Standard Specifications for Construction and any or all Supplemental Provisions.

1. Materials. The HMA and materials shall meet the following requirements:

- a. **Bond Coat.** The bond coat material will be an emulsified asphalt conforming to the requirements of Section 904 of the Standard Specifications for Construction, Type SS-1h.
- b. **HMA Ultra-thin Overlay.** The HMA Ultra-thin Overlay shall be composed of a mixture of aggregate, asphalt binder and, if required, mineral filler, as listed in Table 1:

Table 1 – Mix Requirements

Marshall Air Voids (%)	4.5
VMA% (minimum)	15.5
Based on Gsb	
Fines/Binder% (maximum)(a)	1.2
Flow (0.01 in.)	8-16
Stability Minimum (lbs)	1200

(a) Use effective asphalt, Pbe, for calculation.

- c. **Aggregate Gradation and Physical Properties.** The combined gradation of the aggregate portion of the mixture, including the mineral filler, shall be within the limits of Table 2. The physical properties of the combined aggregates shall meet the criteria of Table 3. Maximum 15% by weight of Recycled Asphalt Pavement is allowed in mix. No shingles (RAS) allowed in mix.

Table 2 – Aggregate Gradation

Sieve Size	Total Percent Passing by Weight
1/2 inch	100
3/8 inch	99 - 100
No. 4	75 - 95
No. 8	55 - 75
No. 30	25 - 45
No. 200	3 - 8

Table 3 – Aggregate Physical Requirements

Item	
Percent Crush (Minimum)	50%
Angularity Index (MTM 118)(Minimum)	2.5
LA Abrasion Loss (Maximum)	40
Aggregate Wear Index (AWI)	220

In addition, the sum of shale, siltstone, ochre, coal, clay-ironstone, and particles which are structurally weak or are found to be non-durable in service shall not exceed 8.0%.

- d. **Performance Graded (PG) Asphalt Binder.** The HMA Ultra-thin mix shall use a PG 64-22 binder. The binder shall meet all the requirements in Section 904 of the Standard Specifications for Construction.

Construction:

- a. **Bond Coat Application.** The bond coat material will be applied to completely cover the prepared surface at a rate of 0.11 to 0.15 gallons/square yard.
- b. **Mixture Application Rate.** The target application rate shall be 85 pounds/square yard.
- c. **Mix Design.** The Contractor shall submit to the Owner a complete mix design for review prior to the start of production.
- d. **Quality Control.** The Contractor shall provide and follow a Quality Control (QC) plan for the Ultra Thin HMA Overlay that will maintain adequate QC for production and construction processes applicable to this specification and the contract documents. For QC purposes, the Contractor must perform at least one QC test per day for gradation, AC content, and air voids, and is allowed to take informational cores for application rates. The Owners shall be provided a copy of the QC plan for review, prior to mix production and placement.

After the job-mix-formula is established, the aggregate gradation and the binder content of the HMA mixture furnished for the work shall be maintained within the Range 1 uniformity tolerance limits permitted for the job-mix-formula specified in Table 4. However, if deviations are predominantly either below or above the job-mix-formula, the Owner may order alterations in the plant to bring the mixture to the job-mix-formula. If two consecutive aggregate gradations on one sieve, or binder contents as determined by the QC test, are outside Range 1 but within

Range 2 tolerance limits, the contractor shall suspend all operations. Contract time will continue during these times when the plant is down. Before resuming any production, the Contractor shall propose, for the Owners approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained. The Owner, after evaluation all effects on AWI and mix design properties, will approve or disapprove such alterations. Additionally, if any one test, Contractor or Owner, indicates the Binder Content is more than 0.10% below the job-mix-formula, the Contractor shall suspend all operations. Before resuming any production, the Contractor shall propose, for Owner's approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained.

Table 4 – Uniformity Tolerance Limits (for QC and Acceptance)

Parameter	• Range 1	Range 2
Air Voids**	+/- 1.0	+/- 2.0
Binder Content	+/- 0.40	+/- 0.50
% Passing #8 and Larger Sieves	+/- 5.0	+/- 8.0
% Passing #30 Sieve	+/- 4.0	+/- 6.0
% Passing #200 Sieve	+/- 1.0	+/- 2.0

*This range allows for normal mixture and testing variations. The mixture shall be proportioned to test as closely as possible to the job-mix-formula.

** Air Void limits apply to QC testing and are optional for Acceptance testing.

- e. **Crushed Particle Content.** The crushed particle content of the aggregate used in the HMA mixture shall not be more than 10 percentage points above or below the crushed particle content used in the job-mix-formula nor less than the minimum specified for the aggregate in the project documents.
- f. **Density.** Thoroughly compact the mixture immediately after placement. The Engineer at any time may require nuclear gauge testing.
- g. **Acceptance Sampling and Testing.** Acceptance sampling and testing may be performed by the Owner. Each day of production, a minimum of two samples will be obtained for each mix type. Acceptance testing will be performed at the frequency specified by the Owner. No less than three samples shall be obtained for each mix type.
- h. **Rejected Mixes.** If for any one mixture, two consecutive aggregate gradations on one sieve or binder contents as determined by acceptance tests exceed the uniformity tolerance of Range 2 under Table 4, or do not meet the minimum requirements for crushed particle content specified in the project documents, the mixture will be rejected. If such mixtures are placed in the pavement, the remaining portions of the failing acceptance tests (split sample) will be sent to an independent Laboratory to confirm the acceptance test results. If the Laboratory's results do not confirm the acceptance test results, then no price adjustments will be made for the mixture involved. If the Laboratory's results confirm the acceptance test results and if, in the Owner's judgement the defective material can remain in place, the contract unit price for the defective mixture involved, as determined for acceptance testing, will be decreased on the following basis: The contract unit price for material outside of Range 2 will be decreased 25 percent.

Appendix A

Davis Bacon Wage Decision

"General Decision Number: MI20240001 01/05/2024

Superseded General Decision Number: MI20230001

State: Michigan

Construction Types: Highway (Highway, Airport & Bridge xxxxx and Sewer/Incid. to Hwy.)

Counties: Michigan Statewide.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
 0 01/05/2024

CARP0004-004 06/01/2019

REMAINDER OF STATE

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 27.62	20.59

CARP0004-005 06/01/2018		

LIVINGSTON (Townships of Brighton, Deerfield, Genoa, Hartland, Oceola & Tyrone), MACOMB, MONROE, OAKLAND, SANILAC, ST. CLAIR AND WAYNE COUNTIES

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 30.50	27.28

ELEC0017-005 06/01/2023		

STATEWIDE

	Rates	Fringes
Line Construction		
Groundman/Driver.....	\$ 29.24	7.20+32%
Journeyman Signal Tech, Communications Tech, Tower		
Tech & Fiber Optic Splicers..	\$ 52.02	7.20+32%
Journeyman Specialist.....	\$ 53.83	32%+7.20
Operator A.....	\$ 37.13	7.20+32%
Operator B.....	\$ 34.67	7.20+32%

Classifications

Journeyman Specialist: Refers to a crew of only one person working alone.

Operator A: Shall be proficient in operating all power equipment including: Backhoe, Excavator, Directional Bore and Boom/Digger truck.

Operator B: Shall be proficient in operating any 2 of the above mentioned pieces of equipment listed under Operator A.

ENGI0324-003 06/01/2023

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LENAWEE, LIVINGSTON, MACOMB, MIDLAND, MONROE, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLAIR, SANILAC, SHIAWASSEE, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
GROUP 1.....	\$ 53.02	25.25
GROUP 2.....	\$ 54.02	25.25
GROUP 3.....	\$ 51.52	25.25
GROUP 4.....	\$ 52.52	25.25
GROUP 5.....	\$ 50.02	25.25
GROUP 6.....	\$ 51.02	25.25

GROUP 7.....	\$ 49.75	25.25
GROUP 8.....	\$ 50.75	25.25
GROUP 9.....	\$ 49.30	25.25
GROUP 10.....	\$ 50.30	25.25
GROUP 11.....	\$ 48.57	25.25
GROUP 12.....	\$ 49.57	25.25
GROUP 13.....	\$ 48.21	25.25
GROUP 14.....	\$ 49.21	25.25
GROUP 15.....	\$ 47.57	25.25
GROUP 16.....	\$ 44.37	25.25
GROUP 17.....	\$ 28.89	12.40
GROUP 18.....	\$ 33.38	25.25

FOOTNOTE:

Paid Holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Engineer when operating combination of boom and jib 400' or longer

GROUP 2: Engineer when operating combination of boom and jib 400' or longer on a crane that requires an oiler

GROUP 3: Engineer when operating combination of boom and jib 300' or longer

GROUP 4: Engineer when operating combination of boom and jib 300' or longer on a crane that requires an oiler

GROUP 5: Engineer when operating combination of boom and jib 220' or longer

GROUP 6: Engineer when operating combination of boom and jib 220' or longer on a crane that requires an oiler

GROUP 7: Engineer when operating combination of boom and jib 140' or longer

GROUP 8: Engineer when operating combination of boom and jib 140' or longer on a crane that requires an oiler

GROUP 9: Tower crane & derrick operator (where operator's work station is 50 ft. or more above first sub-level)

GROUP 10: Tower crane & derrick operator (where operator's work station is 50 ft. or more above first sub-level) on a crane that requires an oiler

GROUP 11: Engineer when operating combination of boom and jib 120' or longer

GROUP 12: Engineer when operating combination of boom and jib 120' or longer on a crane that requires an oiler

GROUP 13: Crane operator; job mechanic and 3 drum hoist and excavator

GROUP 14: Crane operator on a crane that requires an oiler

GROUP 15: Hoisting operator; 2 drum hoist and rubber tired backhoe

GROUP 16: Forklift and 1 drum hoist

GROUP 17: Compressor or welder operator

GROUP 18: Oiler

ENGI0324-004 06/01/2023

AREA 1: ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, EATON, HILLSDALE, IONIA, KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH, VAN BUREN

AREA 2: ANTRIM, BENZIE, CHARLEVOIX, EMMET, GRAND TRAVERSE, KALKASKA, LEELANAU, MISSAUKEE AND WEXFORD COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
AREA 1		
GROUP 1.....	\$ 53.02	25.25
GROUP 2.....	\$ 49.75	25.25
GROUP 3.....	\$ 48.21	25.25
GROUP 4.....	\$ 44.37	25.25
GROUP 5.....	\$ 28.89	12.40
GROUP 6.....	\$ 33.38	25.25
AREA 2		
GROUP 1.....	\$ 53.02	25.25
GROUP 2.....	\$ 49.75	24.25
GROUP 3.....	\$ 48.21	25.25
GROUP 4.....	\$ 44.37	25.25
GROUP 5.....	\$ 28.89	12.40
GROUP 6.....	\$ 33.38	25.25

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 additional to the group 1 rate. Crane operator with main boom and jib 400' or longer: \$3.00 additional to the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Crane Operator with main boom & jib 400', 300', or 220' or longer.

GROUP 2: Crane Operator with main boom & jib 140' or longer, Tower Crane; Gantry Crane; Whirley Derrick.

GROUP 3: Regular Equipment Operator, Crane, Dozer, Loader, Hoist, Straddle Wagon, Mechanic, Grader and Hydro Excavator.

GROUP 4: Air Tugger (single drum), Material Hoist Pump 6" or over, Elevators, Brokk Concrete Breaker.

GROUP 5: Air Compressor, Welder, Generators, Conveyors

GROUP 6: Oiler and fire tender

ENGI0324-005 09/01/2023

AREA 1: GENESEE, LAPEER, LIVINGSTON, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALCONA, ALLEGAN, ALGER, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KWEENAW, LAKE, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

Rates Fringes

OPERATOR: Power Equipment
(Underground construction
(including sewer))

AREA 1:

GROUP 1.....	\$ 41.08	25.25
GROUP 2.....	\$ 36.25	25.25
GROUP 3.....	\$ 35.52	25.25
GROUP 4.....	\$ 34.95	25.25
GROUP 5.....	\$ 25.35	12.10

AREA 2:

GROUP 1.....	\$ 39.27	25.25
GROUP 2.....	\$ 34.38	25.25
GROUP 3.....	\$ 33.88	25.25
GROUP 4.....	\$ 33.60	25.25
GROUP 5.....	\$ 25.35	12.10

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backfiller tamper; Backhoe; Batch plant operator (concrete); Clamshell; Concrete paver (2 drums or larger); Conveyor loader (Euclid type); Crane (crawler, truck type or pile driving); Dozer; Dragline; Elevating grader; Endloader; Gradall (and similar type machine); Grader; Mechanic; Power shovel; Roller (asphalt); Scraper (self-propelled or tractor drawn); Side boom tractor (type D-4 or equivalent and larger); Slip form paver; Slope paver; Trencher (over 8 ft. digging capacity); Well drilling rig; Concrete pump with boom operator; Hydro Excavator

GROUP 2: Boom truck (power swing type boom); Crusher; Hoist; Pump (1 or more - 6-in. discharge or larger - gas or diesel- powered or powered by generator of 300 amperes or more - inclusive of generator); Side boom tractor (smaller than type D-4 or equivalent); Tractor (pneu-tired, other than backhoe or front end loader); Trencher (8-ft. digging capacity and smaller); Vac Truck and End dump operator;

GROUP 3: Air compressors (600 cfm or larger); Air compressors (2 or more-less than 600 cfm); Boom truck (non-swinging, non- powered type boom); Concrete breaker (self-propelled or truck mounted - includes compressor); Concrete paver (1 drum-1/2 yd. or larger); Elevator (other than passenger); Maintenance person; Pump (2 or more-4-in. up to 6-in.

discharge-gas or diesel powered - excluding submersible pumps); Pumpcrete machine (and similar equipment); Wagon drill (multiple); Welding machine or generator (2 or more-300 amp. or larger - gas or diesel powered)

GROUP 4: Boiler; Concrete saw (40 hp or over); Curing machine (self-propelled); Farm tractor (with attachment); Finishing machine (concrete); Hydraulic pipe pushing machine; Mulching equipment; Pumps (2 or more up to 4-in. discharge, if used 3 hours or more a day, gas or diesel powered - excluding submersible pumps); Roller (other than asphalt); Stump remover; Trencher (service); Vibrating compaction equipment, self-propelled (6 ft. wide or over); Sweeper (Wayne type); Water wagon and Extend-a boom forklift

Group 5: Fire Person, Oiler

ENGI0324-006 06/01/2023

GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW, WAYNE, ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

Rates Fringes

Power equipment operators:
(AIRPORT, BRIDGE & HIGHWAY
CONSTRUCTION)

GROUP 1.....	\$ 40.46	25.25
GROUP 2.....	\$ 37.73	25.25
GROUP 3.....	\$ 33.17	25.55
GROUP 4.....	\$ 33.00	25.25

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt plant operator; Crane operator (does not include work on bridge construction projects when the crane operator is erecting structural components); Dragline operator; Shovel operator; Locomotive operator; Paver operator (5 bags or more); Elevating grader operator; Pile driving operator; Roller operator (asphalt); Blade grader operator; Trenching machine operator (ladder or wheel type); Auto-grader; Slip form paver; Self-propelled or tractor-drawn scraper; Conveyor loader operator (Euclid type); Endloader operator (1 yd. capacity and over); Bulldozer; Hoisting engineer; Tractor operator; Finishing machine operator (asphalt); Mechanic; Pump operator (6-in. discharge or over, gas, diesel powered or generator of 300 amp. or larger); Shouldering or gravel distributing machine operator (self- propelled); Backhoe (with over 3/8 yd. bucket); Side boom tractor (type D-4 or equivalent or larger); Tube finisher (slip form paving); Gradall (and similar type machine); Asphalt paver (self- propelled);

Asphalt planer (self-propelled); Batch plant (concrete-central mix); Slurry machine (asphalt); Concrete pump (3 in. and over); Roto-mill; Swinging boom truck (over 12 ton capacity); Hydro demolisher (water blaster); Farm-type tractor with attached pan; Vacuum truck operator; Batch Plant (concrete dry batch); Concrete Saw Operator (40h.p. or over; Tractor Operator (farm type); Finishing Machine Operator (concrete); Grader Operator (self-propelled fine grade or form (concrete)).

GROUP 2: Screening plant operator; Washing plant operator; Crusher operator; Backhoe (with 3/8 yd. bucket or less); Side boom tractor (smaller than D-4 type or equivalent); Sweeper (Wayne type and similar equipment); Greese Truck; Air Compressor Operator (600 cu.ft. per min or more); Air Compressor Operator (two or more, less than 600 cfm);

GROUP 3: Boiler fire tender; Tractor operator (farm type with attachment); Concrete Breaker; Wagon Drill Operator;

GROUP 4: Oiler; Fire tender; Trencher (service); Flexplane operator; Cleftplane operator; Boom or winch hoist truck operator; Endloader operator *under 1 yd. capacity); Roller Operator (other than asphalt); Curing equipment operator (self-propelled); Power bin operator; Plant drier (6 ft. wide or over); Guard post driver operator (power driven); All mulching equipment; Stump remover; Concrete pump (under 3-in.); Mesh installer (self-propelled); End dump; Skid Steer.

ENGI0324-007 05/01/2023

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
Compressor, welder and forklift.....	\$ 38.50	25.00
Crane operator, main boom & jib 120' or longer.....	\$ 44.97	25.00
Crane operator, main boom & jib 140' or longer.....	\$ 44.17	24.60
Crane operator, main boom & jib 220' or longer.....	\$ 45.27	25.00
Mechanic with truck and tools.....	\$ 44.10	25.00
Oiler and fireman.....	\$ 39.96	25.00
Regular operator.....	\$ 42.32	25.00

ENGI0324-008 10/01/2022

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA,

MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE, MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

Rates Fringes

OPERATOR: Power Equipment (Sewer Relining)

GROUP 1.....	\$ 35.37	14.77
GROUP 2.....	\$ 33.33	14.77

SEWER RELINING CLASSIFICATIONS

GROUP 1: Operation of audio-visual closed circuit TV system, including remote in-ground cutter and other equipment used in connection with the CCTV system

GROUP 2: Operation of hot water heaters and circulation systems, water jettors and vacuum and mechanical debris removal systems

ENGI0325-012 05/01/2023

Rates Fringes

Power equipment operators - gas distribution and duct installation work:

GROUP 1.....	\$ 36.18	25.25
GROUP 2.....	\$ 33.45	25.25

SCOPE OF WORK: The construction, installation, treating and reconditioning of pipelines transporting gas vapors within cities, towns, subdivisions, suburban areas, or within private property boundaries, up to and including private meter settings of private industrial, governmental or other premises, more commonly referred to as ""distribution work,"" starting from the first metering station, connection, similar or related facility, of the main or cross country pipeline and including duct installation.

Group 1: Backhoe, crane, grader, mechanic, dozer (D-6 equivalent or larger), side boom (D-4 equivalent or larger), trencher(except service), endloader (2 yd. capacity or greater).

GROUP 2: Dozer (less than D-6 equivalent), endloader (under 2 yd. capacity), side boom (under D-4 capacity), backfiller, pumps (1 or 2 of 6-inch discharge or greater), boom truck (with powered boom), tractor (wheel type other than backhoe or front endloader). Tamper (self-propelled), boom truck (with non-powered boom), concrete saw (20 hp or larger), pumps (2 to 4 under 6-inch discharge), compressor (2 or more or when one is used continuously into the second day) and trencher(service). Oiler, hydraulic pipe pushing machine, grease person and hydrostatic testing operator.

IRON0008-007 06/01/2022

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON,

IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector.....	\$ 23.70	6.95
IRONWORKER		
General contracts		
\$10,000,000 or greater.....	\$ 38.14	28.70
General contracts less than \$10,000,000.....	\$ 38.14	28.70

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0025-002 06/01/2023

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LIVINGSTON, MACOMB, MIDLAND, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector		
ALLEGAN, ANTRIM, BARRY, BENZIE, BRANCH, CALHOUN, CHARLEVOIX, EATON, EMMET, GRAND TRAVERSE, HILLSDALE, IONIA, KALAMAZOO, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH, VAN BUREN AND WEXFORD COUNTIES:..	\$ 24.59	25.43
Bay, Genesee, Lapeer, Livingston (east of Burkhardt Road), Macomb, Midland, Oakland, Saginaw, St. Clair, The University of Michigan, Washtenaw (east of U.S. 23) & Wayne...	\$ 25.81	26.43
IRONWORKER		
Ornamental and Structural...	\$ 34.50	38.44
Reinforcing.....	\$ 32.68	35.15

IRON0055-005 07/01/2022

LENAWEE AND MONROE COUNTIES:

	Rates	Fringes
IRONWORKER		
Pre-engineered metal buildings.....	\$ 23.59	19.35
All other work.....	\$ 33.00	27.20

 IRON0292-003 06/01/2020

BERRIEN AND CASS COUNTIES:

	Rates	Fringes
IRONWORKER (Including pre-engineered metal building erector).....	\$ 31.75	22.84

 LAB00005-006 10/01/2022

	Rates	Fringes
Laborers - hazardous waste abatement: (ALCONA, ALPENA, ANTRIM, BENZIE, CHARLEVOIX, CHEBOYGAN, CRAWFORD, EMMET, GRAND TRAVERSE, IOSCO, KALKASKA, LEELANAU, MISSAUKEE, MONTMORENCY, OSCODA, OTSEGO, PRESQUE ISLE AND WEXFORD COUNTIES - Zone 10)		
Levels A, B or C.....	\$ 17.45	12.75
class b.....	\$ 18.64	12.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment; Also, Level D.....	\$ 16.45 **	12.75
class a.....	\$ 17.64	12.90
Zone 10		
Laborers - hazardous waste abatement: (ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES - Zone 11)		
Levels A, B or C.....	\$ 25.18	12.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment; Also, Level D.....	\$ 22.58	12.90
Laborers - hazardous waste abatement: (ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, IONIA COUNTY (except the city of Portland); KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH AND VAN BUREN COUNTIES - Zone 9)		
Levels A, B or C.....	\$ 21.88	13.26
Work performed in conjunction with site preparation not requiring		

the use of personal protective equipment;		
Also, Level D.....	\$ 20.80	12.90
Laborers - hazardous waste abatement: (ARENAC, BAY, CLARE, GLADWIN, GRATIOT, HURON, ISABELLA, MIDLAND, OGEMAW, ROSCOMMON, SAGINAW AND TUSCOLA COUNTIES - Zone 8)		
Levels A, B or C.....	\$ 23.74	12.95
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....	\$ 20.80	12.90
Laborers - hazardous waste abatement: (CLINTON, EATON AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); LIVINGSTON COUNTY (west of Oak Grove Rd., including the City of Howell) - Zone 6)		
Levels A, B or C.....	\$ 26.33	12.95
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....	\$ 24.64	12.90
Laborers - hazardous waste abatement: (GENESEE, LAPEER AND SHIAWASSEE COUNTIES - Zone 7)		
Levels A, B or C.....	\$ 24.20	13.80
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....	\$ 23.20	13.80
Laborers - hazardous waste abatement: (HILLSDALE, JACKSON AND LENAWEЕ COUNTIES - Zone 4)		
Levels A, B or C.....	\$ 27.13	14.95
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....	\$ 24.17	12.90
Laborers - hazardous waste abatement: (LIVINGSTON COUNTY (east of Oak Grove Rd. and south of M-59, excluding the city of Howell); AND WASHTENAW COUNTY - Zone 3)		
Levels A, B or C.....	\$ 29.93	14.20
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....	\$ 28.93	14.20

Laborers - hazardous waste abatement: (MACOMB AND WAYNE COUNTIES - Zone 1)	
Levels A, B or C.....\$ 29.93	16.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 28.93	16.90
Laborers - hazardous waste abatement: (MONROE COUNTY - Zone 4)	
Levels A, B or C.....\$ 31.75	14.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 31.75	14.90
Laborers - hazardous waste abatement: (OAKLAND COUNTY and the Northeast portion of LIVINGSTON COUNTY bordered by Oak Grove Road on the West and M-59 on the South - Zone 2)	
Level A, B, C.....\$ 29.93	16.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 28.93	16.90
Laborers - hazardous waste abatement: (SANILAC AND ST. CLAIR COUNTIES - Zone 5)	
Levels A, B or C.....\$ 26.21	16.62
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 24.75	16.35

LAB00259-001 09/01/2023

AREA 1: MACOMB, OAKLAND AND WAYNE COUNTIES
 AREA 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONROE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW AND WEXFORD COUNTIES

Rates Fringes

Laborers - tunnel, shaft and caisson:

AREA 1		
GROUP 1.....	\$ 23.62	16.93
GROUP 2.....	\$ 23.73	16.93
GROUP 3.....	\$ 23.79	16.93
GROUP 4.....	\$ 23.97	16.93
GROUP 5.....	\$ 24.22	16.93
GROUP 6.....	\$ 24.55	16.93
GROUP 7.....	\$ 17.83	16.93
AREA 2		
GROUP 1.....	\$ 27.57	16.93
GROUP 2.....	\$ 25.24	16.93
GROUP 3.....	\$ 25.34	16.93
GROUP 4.....	\$ 29.57	16.93
GROUP 5.....	\$ 25.76	16.93
GROUP 6.....	\$ 26.07	16.93
GROUP 7.....	\$ 25.57	16.93

SCOPE OF WORK: Tunnel, shaft and caisson work of every type and description and all operations incidental thereto, including, but not limited to, shafts and tunnels for sewers, water, subways, transportation, diversion, sewerage, caverns, shelters, aquifers, reservoirs, missile silos and steel sheeting for underground construction.

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Tunnel, shaft and caisson laborer, dump, shanty, hog house tender, testing (on gas) and watchman

GROUP 2: Manhole, headwall, catch basin builder, bricklayer tender, mortar machine and material mixer

GROUP 3: Air tool operator (jackhammer, bush hammer and grinder), first bottom, second bottom, cage tender, car pusher, carrier, concrete, concrete form, concrete repair, cement invert laborer, cement finisher, concrete shoveler, conveyor, floor, gasoline and electric tool operator, gunite, grout operator, welder, heading dinky person, inside lock tender, pea gravel operator, pump, outside lock tender, scaffold, top signal person, switch person, track, tugger, utility person, vibrator, winch operator, pipe jacking, wagon drill and air track operator and concrete saw operator (under 40 h.p.)

GROUP 4: Tunnel, shaft and caisson mucker, bracer, liner plate, long haul dinky driver and well point

GROUP 5: Tunnel, shaft and caisson miner, drill runner, key board operator, power knife operator, reinforced steel or mesh (e.g. wire mesh, steel mats, dowel bars, etc.)

GROUP 6: Dynamite and powder

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LAB00334-001 09/01/2022

Rates Fringes

Laborers - open cut:

ZONE 1 - MACOMB, OAKLAND
AND WAYNE COUNTIES:

GROUP 1.....	\$ 23.47	16.72
GROUP 2.....	\$ 23.58	16.72
GROUP 3.....	\$ 23.63	16.72
GROUP 4.....	\$ 23.71	16.72
GROUP 5.....	\$ 24.17	16.72
GROUP 6.....	\$ 22.00	16.72
GROUP 7.....	\$ 17.84	16.72

ZONE 2 - LIVINGSTON COUNTY
(east of M-151 (Oak Grove
Rd.)); MONROE AND

WASHTENAW COUNTIES:

GROUP 1.....	\$ 25.20	16.72
GROUP 2.....	\$ 24.91	16.72
GROUP 3.....	\$ 25.03	16.72
GROUP 4.....	\$ 25.10	16.72
GROUP 5.....	\$ 25.25	16.72
GROUP 6.....	\$ 22.55	16.72
GROUP 7.....	\$ 22.11	16.72

ZONE 3 - CLINTON, EATON,
GENESEE, HILLSDALE AND
INGHAM COUNTIES; IONIA
COUNTY (City of Portland);
JACKSON, LAPEER AND
LENAWEE COUNTIES;
LIVINGSTON COUNTY (west of
M-151 Oak Grove Rd.);
SANILAC, ST. CLAIR AND
SHIAWASSEE COUNTIES:

GROUP 1.....	\$ 23.39	16.72
GROUP 2.....	\$ 23.13	16.72
GROUP 3.....	\$ 23.25	16.72
GROUP 4.....	\$ 23.30	16.72
GROUP 5.....	\$ 23.44	16.72
GROUP 6.....	\$ 20.74	16.72
GROUP 7.....	\$ 22.23	16.72

ZONE 4 - ALCONA, ALLEGAN,
ALPENA, ANTRIM, ARENAC,
BARRY, BAY, BENZIE,
BERRIEN, BRANCH,
CALHOUN, CASS, CHARLEVOIX,
CHEBOYGAN, CLARE,
CRAWFORD, EMMET,
GLADWIN, GRAND TRAVERSE,
GRATIOT AND HURON
COUNTIES; IONIA COUNTY
(EXCEPT THE CITY OF
PORTLAND); IOSCO,
ISABELLA, KALAMAZOO,
KALKASKA, KENT,
LAKE, LEELANAU, MANISTEE,
MASON, MECOSTA, MIDLAND,
MISSAUKEE, MONTCALM,
MONTMORENCY, MUSKEGON,
NEWAYGO, OCEANA, OGEMAW,
OSCEOLA, OSCODA, OTSEGO,
OTTAWA, PRESQUE ISLE,
ROSCOMMON, SAGINAW, ST.
JOSEPH, TUSCOLA, VAN BUREN
AND WEXFORD COUNTIES:

GROUP 1.....	\$ 22.42	16.72
GROUP 2.....	\$ 22.15	16.72
GROUP 3.....	\$ 22.26	16.72

GROUP 4.....	\$ 22.33	16.72
GROUP 5.....	\$ 22.45	16.72
GROUP 6.....	\$ 19.67	16.72
GROUP 7.....	\$ 22.30	16.72
ZONE 5 - ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:		
GROUP 1.....	\$ 22.24	16.72
GROUP 2.....	\$ 22.38	16.72
GROUP 3.....	\$ 22.51	16.72
GROUP 4.....	\$ 22.56	16.72
GROUP 5.....	\$ 22.64	16.72
GROUP 6.....	\$ 19.99	16.72
GROUP 7.....	\$ 22.45	16.72

SCOPE OF WORK:

Open cut construction work shall be construed to mean work which requires the excavation of earth including industrial, commercial and residential building site excavation and preparation, land balancing, demolition and removal of concrete and underground appurtenances, grading, paving, sewers, utilities and improvements; retention, oxidation, flocculation and irrigation facilities, and also including but not limited to underground piping, conduits, steel sheeting for underground construction, and all work incidental thereto, and general excavation. For all areas except the Upper Peninsula, open cut construction work shall also be construed to mean waterfront work, piers, docks, seawalls, breakwalls, marinas and all incidental work. Open cut construction work shall not include any structural modifications, alterations, additions and repairs to buildings, or highway work, including roads, streets, bridge construction and parking lots or steel erection work and excavation for the building itself and back filling inside of and within 5 ft. of the building and foundations, footings and piers for the building. Open cut construction work shall not include any work covered under Tunnel, Shaft and Caisson work.

OPEN CUT LABORER CLASSIFICATIONS

GROUP 1: Construction laborer

GROUP 2: Mortar and material mixer, concrete form person, signal person, well point person, manhole, headwall and catch basin builder, headwall, seawall, breakwall and dock builder

GROUP 3: Air, gasoline and electric tool operator, vibrator operator, driller, pump person, tar kettle operator, bracer, rodder, reinforced steel or mesh person (e.g., wire mesh, steel mats, dowel bars, etc.), welder, pipe jacking and boring person, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger person and directional boring person

GROUP 4: Trench or excavating grade person

GROUP 5: Pipe layer (including crock, metal pipe, multi-plate

or other conduits)

GROUP 6: Grouting man, audio-visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation and repair of water service pipe and appurtenances

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LAB00465-001 06/01/2023

LABORER: Highway, Bridge and Airport Construction

AREA 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALLEGAN, BARRY, BAY, BERRIEN, BRANCH, CALHOUN, CASS, CLINTON, EATON, GRATIOT, HILLSDALE, HURON, INGHAM, JACKSON, KALAMAZOO, LAPEER, LENAWEE, LIVINGSTON, MIDLAND, MUSKEGON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA AND VAN BUREN COUNTIES

AREA 3: ALCONA, ALPENA, ANTRIM, ARENAC, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, IONIA, IOSCO, ISABELLA, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MONTMORENCY, NEWAYGO, OCEANA, OGEMAW, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON AND WEXFORD COUNTIES

AREA 4: ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES

	Rates	Fringes
LABORER (AREA 1)		
GROUP 1.....	\$ 29.67	13.45
GROUP 2.....	\$ 29.88	13.45
GROUP 3.....	\$ 30.17	13.45
GROUP 4.....	\$ 30.61	13.45
GROUP 5.....	\$ 30.23	13.45
GROUP 6.....	\$ 30.66	13.45
LABORER (AREA 2)		
GROUP 1.....	\$ 26.92	12.90
GROUP 2.....	\$ 27.12	12.90
GROUP 3.....	\$ 27.36	12.90
GROUP 4.....	\$ 27.71	12.90
GROUP 5.....	\$ 27.58	12.90
GROUP 6.....	\$ 27.92	12.90
LABORER (AREA 3)		
GROUP 1.....	\$ 26.22	12.90
GROUP 2.....	\$ 26.43	12.90
GROUP 3.....	\$ 26.72	12.90
GROUP 4.....	\$ 27.16	12.90
GROUP 5.....	\$ 26.78	12.90
GROUP 6.....	\$ 27.21	12.90
LABORER (AREA 4)		
GROUP 1.....	\$ 26.22	12.90
GROUP 2.....	\$ 26.43	12.90

GROUP 3.....	\$ 26.72	12.90
GROUP 4.....	\$ 27.16	12.90
GROUP 5.....	\$ 26.78	12.90
GROUP 6.....	\$ 27.21	12.90

LABORER CLASSIFICATIONS

GROUP 1: Asphalt shoveler or loader; asphalt plant misc.; burlap person; yard person; dumper (wagon, truck, etc.); joint filling laborer; miscellaneous laborer; unskilled laborer; sprinkler laborer; form setting laborer; form stripper; pavement reinforcing; handling and placing (e.g., wire mesh, steel mats, dowel bars); mason's tender or bricklayer's tender on manholes; manhole builder; headwalls, etc.; waterproofing,(other than buildings) seal coating and slurry mix, shoring, underpinning; pressure grouting; bridge pin and hanger removal; material recycling laborer; horizontal paver laborer (brick, concrete, clay, stone and asphalt); ground stabilization and modification laborer; grouting; waterblasting; top person; railroad track and trestle laborer; carpenters' tender; guard rail builders' tender; earth retention barrier and wall and M.S.E. wall installer's tender; highway and median installer's tender(including sound, retaining, and crash barriers); fence erector's tender; asphalt raker tender; sign installer; remote control operated equipment.

GROUP 2: Mixer operator (less than 5 sacks); air or electric tool operator (jackhammer, etc.); spreader; boxperson (asphalt, stone, gravel); concrete paddler; power chain saw operator; paving batch truck dumper; tunnel mucker (highway work only); concrete saw (under 40 h.p.) and dry pack machine; roto-mill grounds person.

GROUP 3: Tunnel miner (highway work only); finishers tenders; guard rail builders; highway and median barrier installer; earth retention barrier and wall and M.S.E. wall installer's (including sound, retaining and crash barriers); fence erector; bottom person; powder person; wagon drill and air track operator; diamond and core drills; grade checker; certified welders; curb and side rail setter's tender.

GROUP 4: Asphalt raker

GROUP 5: Pipe layers, oxy-gun

GROUP 6: Line-form setter for curb or pavement; asphalt screed checker/screw man on asphalt paving machines.

LAB01076-005 04/01/2023

MICHIGAN STATEWIDE

	Rates	Fringes
LABORER (DISTRIBUTION WORK)		
Zone 1.....	\$ 25.17	13.32
Zone 2.....	\$ 24.22	13.45
Zone 3.....	\$ 21.60	13.45
Zone 4.....	\$ 20.97	13.43
Zone 5.....	\$ 21.00	13.40

DISTRIBUTION WORK - The construction, installation, treating

and reconditioning of distribution pipelines transporting coal, oil, gas or other similar materials, vapors or liquids, including pipelines within private property boundaries, up to and including the meter settings on residential, commercial, industrial, institutional, private and public structures. All work covering pumping stations and tank farms not covered by the Building Trades Agreement. Other distribution lines with the exception of sewer, water and cable television are included.

Underground Duct Layer Pay: \$.40 per hour above the base pay rate.

Zone 1 - Macomb, Oakland and Wayne

Zone 2 - Monroe and Washtenaw

Zone 3 - Bay, Genesee, Lapeer, Midland, Saginaw, Sanilac, Shiawassee and St. Clair

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

Zone 5 - Remaining Counties in Michigan

PAIN0022-002 07/01/2008

HILLSDALE, JACKSON AND LENAWE COUNTY; LIVINGSTON COUNTY (east of the eastern city limits of Howell, not including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 25.06	14.75

FOOTNOTES: For all spray work and journeyman rigging for spray work, also blowing off, \$0.80 per hour additional (applies only to workers doing rigging for spray work on off the floor work. Does not include setting up or moving rigging on floor surfaces, nor does it apply to workers engaged in covering up or tending spray equipment. For all sandblasting and spray work performed on highway bridges, overpasses, tanks or steel, \$0.80 per hour additional. For all brushing, cleaning and other preparatory work (other than spraying or steeplejack work) at scaffold heights of fifty (50) feet from the ground or higher, \$0.50 per hour additional. For all preparatorial work and painting performed on open steel under forty (40) feet when no scaffolding is involved, \$0.50 per hour additional. For all swing stage work-window jacks and window belts-exterior and interior, \$0.50 per hour additional. For all spray work and sandblaster work to a scaffold height of forty (40) feet above the floor level, \$0.80 per hour additional. For all preparatorial work and painting on all highway bridges or overpasses up to forty (40) feet in height, \$0.50 per hour additional. For all steeplejack work performed where the elevation is forty (40) feet or more, \$1.25 per hour additional.

PAIN0312-001 06/01/2018

EXCLUDES: ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel,

Salem, Saugatuck and Wayland); INCLUDES: Barry, Berrien, Branch, Calhoun, Cass, Hillsdale, Kalamazoo, St. Joseph, Van Buren

	Rates	Fringes
PAINTER		
Brush and roller.....	\$ 23.74	13.35
Spray, Sandblast, Sign		
Painting.....	\$ 24.94	13.35

PAIN0845-003 05/10/2018

CLINTON COUNTY; EATON COUNTY (does not include the townships of Bellevue and Olivet); INGHAM COUNTY; IONIA COUNTY (east of Hwy. M 66); LIVINGSTON COUNTY (west of the eastern city limits of Howell, including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); AND SHIAWASSEE COUNTY (Townships of Bennington, Laingsbury and Perry):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-015 05/10/2018

MUSKEGON COUNTY; NEWAYGO COUNTY (except the Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OCEANA COUNTY; OTTAWA COUNTY (except the townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-018 05/10/2018

ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); IONIA COUNTY (west of Hwy. M-66); KENT, MECOSTA AND MONTCALM COUNTIES; NEWAYGO COUNTY (Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OSCEOLA COUNTY (south of Hwy. #10); OTTAWA COUNTY (Townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

FOOTNOTES: Lead abatement work: \$1.00 per hour additional.

PAIN1011-003 06/02/2022

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 24.66	14.99

FOOTNOTES: High pay (bridges, overpasses, watertower): 30 to 80 ft.: \$.65 per hour additional. 80 ft. and over: \$1.30 per hour additional.

 PAIN1474-002 06/01/2010

HURON COUNTY; LAPEER COUNTY (east of Hwy. M-53); ST. CLAIR, SANILAC AND TUSCOLA COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 23.79	12.02

FOOTNOTES: Lead abatement work: \$1.00 per hour additional. Work with any hazardous material: \$1.00 per hour additional. Sandblasting, steam cleaning and acid cleaning: \$1.00 per hour additional. Ladder work at or above 40 ft., scaffold work at or above 40 ft., swing stage, boatswain chair, window jacks and all work performed over a falling height of 40 ft.: \$1.00 per hour additional. Spray gun work, pick pullers and those handling needles, blowing off by air pressure, and any person rigging (setting up and moving off the ground): \$1.00 per hour additional. Steeplejack, tanks, gas holders, stacks, flag poles, radio towers and beacons, power line towers, bridges, etc.: \$1.00 per hour additional, paid from the ground up.

 PAIN1803-003 06/01/2019

ALCONA, ALPENA, ANTRIM, ARENAC, BAY, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, GRATIOT, IOSCO, ISABELLA, KALKASKA, LAKE, LEELANAU, MANISTEE, MASON, MIDLAND, MISSAUKEE, MONTMORENCY AND OGEMAW COUNTIES; OSCEOLA COUNTY (north of Hwy. #10); OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW AND WEXFORD COUNTIES:

	Rates	Fringes
PAINTER		
Work performed on water, bridges over water or moving traffic, radio and powerline towers, elevated tanks, steeples, smoke stacks over 40 ft. of falling heights, recovery of lead-based paints and any work associated with industrial plants, except maintenance of industrial plants.....	\$ 25.39	14.68
All other work, including maintenance of industrial plant.....	\$ 25.39	14.68

FOOTNOTES: Spray painting, sandblasting, blowdown associated with spraying and blasting, water blasting and work involving a swing stage, boatswain chair or spider: \$1.00 per hour additional. All work performed inside tanks, vessels, tank trailers, railroad cars, sewers, smoke stacks, boilers or other spaces having limited egress not including buildings, opentop tanks, pits, etc.: \$1.25 per hour additional.

PLAS0514-001 06/01/2023

ZONE 1: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, SAGINAW, WASHTENAW AND WAYNE COUNTIES

ZONE 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
ZONE 1.....	\$ 33.00	18.51
ZONE 2.....	\$ 31.50	18.51

PLUM0190-003 05/01/2015

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE, MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

	Rates	Fringes
Plumber/Pipefitter - gas distribution pipeline:		
Welding in conjunction with gas distribution pipeline work.....	\$ 33.03	20.19
All other work:.....	\$ 24.19	12.28

TEAM0007-004 06/01/2020

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,

CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
AREA 1		
Euclids, double bottoms and lowboys.....	\$ 28.05	.50 + a+b
Trucks under 8 cu. yds.....	\$ 27.80	.50 + a+b
Trucks, 8 cu. yds. and over.....	\$ 27.90	.50 + a+b
AREA 2		
Euclids, double bottomms and lowboys.....	\$ 24.895	.50 + a+b
Euclids, double bottoms and lowboys.....	\$ 28.15	.50 + a+b
Trucks under 8 cu. yds.....	\$ 27.90	.50 + a+b
Trucks, 8 cu. yds. and over.....	\$ 28.00	.50 + a+b

Footnote:

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

TEAM0247-004 04/01/2013

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, SAGINAW, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
Sign Installer		
AREA 1		
GROUP 1.....	\$ 21.78	11.83
GROUP 2.....	\$ 25.27	11.8375
AREA 2		
GROUP 1.....	\$ 22.03	11.83
GROUP 2.....	\$ 25.02	11.8375

FOOTNOTE:

a. \$132.70 per week, plus \$17.80 per day.

SIGN INSTALLER CLASSIFICATIONS:

GROUP 1: performs all necessary labor and uses all tools required to construct and set concrete forms required in the installation of highway and street signs

GROUP 2: performs all miscellaneous labor, uses all hand and power tools, and operates all other equipment, mobile or otherwise, required for the installation of highway and street signs

TEAM0247-010 04/01/2018

AREA 1: LAPEER AND SHIAWASSEE COUNTIES

AREA 2: GENESEE, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER (Underground construction)		
AREA 1		
GROUP 1.....	\$ 23.82	19.04
GROUP 2.....	\$ 23.91	19.04
GROUP 3.....	\$ 24.12	19.04
AREA 2		
GROUP 1.....	\$ 24.12	19.04
GROUP 2.....	\$ 24.26	19.04
GROUP 3.....	\$ 24.45	19.04

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

SCOPE OF WORK: Excavation, site preparation, land balancing, grading, sewers, utilities and improvements; also including but not limited to, tunnels, underground piping, retention, oxidation, flocculation facilities, conduits, general excavation and steel sheeting for underground construction. Underground construction work shall not include any structural modifications, alterations, additions and repairs to buildings or highway work, including roads, streets, bridge construction and parking lots or steel erection.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver on all trucks (EXCEPT dump trucks of 8 cubic yards capacity or over, pole trailers, semis, low boys, Euclid, double bottom and fuel trucks)

GROUP 2: Truck driver on dump trucks of 8 cubic yards capacity or over, pole trailers, semis and fuel trucks

GROUP 3: Truck driver on low boy, Euclid and double bottom

SUMI2002-001 05/01/2002

	Rates	Fringes
Flag Person.....	\$ 10.10 **	0.00
LINE PROTECTOR (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE)....	\$ 22.89	13.45
LINE PROTECTOR (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE).....	\$ 20.19	13.45
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES) Group 1.....	\$ 30.52	13.45
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE) Group 2.....	\$ 27.47	13.45
Pavement Marking Machine (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES) Group 1.....	\$ 26.92	13.45
Pavement Marking Machine (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE) Group 2.....	\$ 24.23	13.45

WORK CLASSIFICATIONS:

PAVEMENT MARKER GROUP 1: Drives or operates a truck mounted striper, grinder, blaster, groover, or thermoplastic melter for the placement or removal of temporary or permanent pavement markings or markers.

PAVEMENT MARKER GROUP 2: Performs all functions involved for the placement or removal of temporary or permanent pavement markings or markers not covered by the classification of Pavement Marker Group 1 or Line Protector.

LINE PROTECTOR: Performs all operations for the protection or removal of temporary or permanent pavement markings or markers in a moving convoy operation not performed by the classification of Pavement Marker Group 1. A moving convoy operation is comprised of only Pavement Markers Group 1 and Line Protectors.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

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

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

Union Rate Identifiers

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

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

this classification and rate.

Survey Rate Identifiers

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

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

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

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

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

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

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

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

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

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

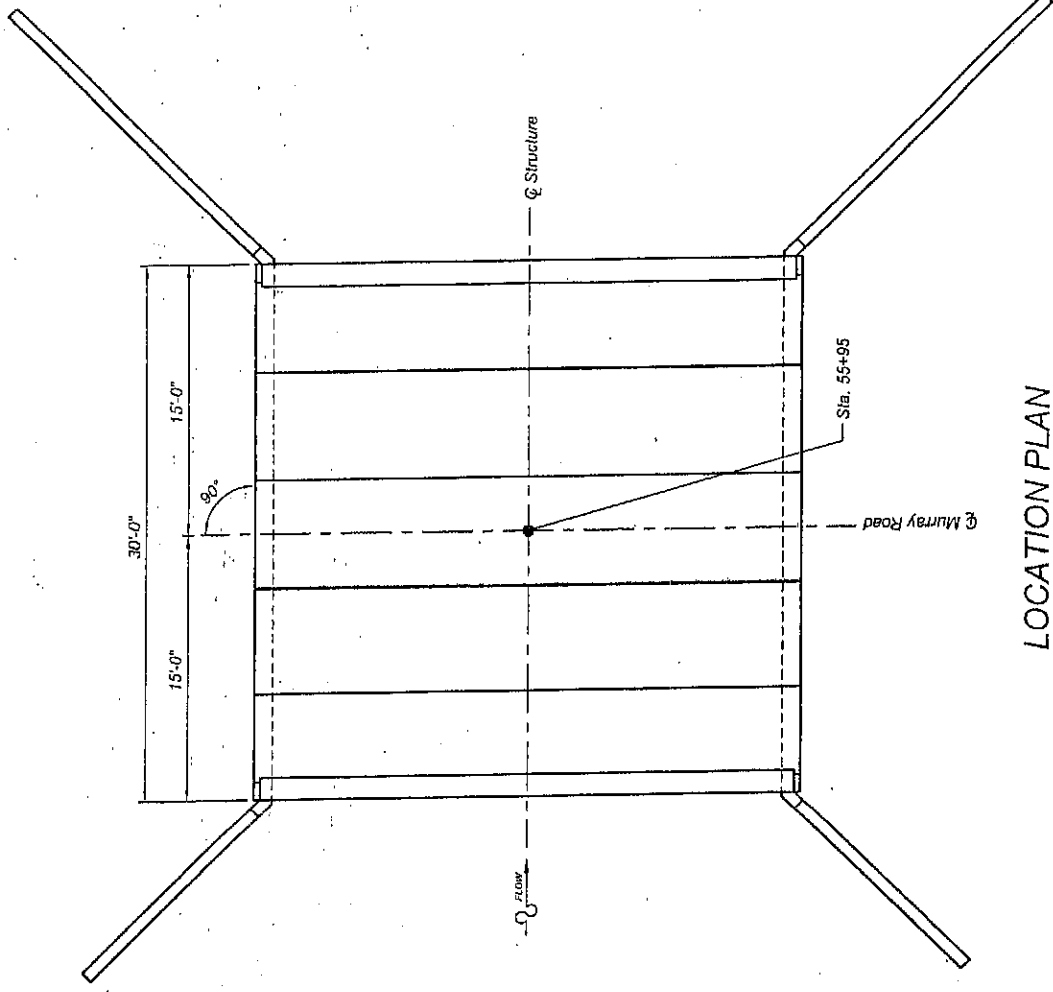
4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"

Appendix B
Bridge Plans

MURRAY ROAD BAY SHORE, MICHIGAN



LOCATION PLAN
not to scale

NOTES

GENERAL NOTES:

- This bridge has been designed for general site conditions. The project engineer shall be responsible for the structure's suitability to the existing site conditions and for the hydraulic evaluation -- including scour and confirmation of soil conditions.
- Prior to construction, contractor must verify all elevations shown through the engineer.
- Only CONTECH Bridge Solutions Inc. or the CONTECH approved precaster in Michigan may provide the structure designed in accordance with these plans.
- The use of another precast structure with the design assumptions used for the CONSPAN® structure may lead to serious design errors. Use of any other precast structure with this design and drawings voids any certification of this design and warranty. CONTECH Bridge Solutions Inc. assumes no liability for design of any alternate or similar type structures.
- Alternate structures may be considered, provided that signed and sealed design drawings (and calculations) are submitted to the engineer 2 weeks prior to the bid date for review and approval.
- Proposed alternates to a CONSPAN® Bridge System must submit at least two (2) independently verified full scale load tests that confirm the proposed design methodology of the three sided/arch structure(s). The proposed alternate, upon satisfactory confirmation of design methodology, may be considered an acceptable alternate.

DESIGN DATA

Design Loading:
 Bridge Units: HS25-44
 Headwalls: Earth Pressure + Live Load Impact
 Wingwalls: Earth Pressure + Live Load Surcharge
 Design Fill Height: 1'-0" Min. to 2'-0" Max from top of crown to top of pavement.
 Design Method: Load factor per AASHTO Specification
 Assumed net allowable soil bearing pressure: 2000 PSF
 Assumed gross allowable soil bearing pressure: 2000 PSF

*At the time of design, a geotechnical report for the project site was not available. It is the project engineer's, owner's and/or the contractor's responsibility to verify that the actual site conditions at the time of construction are consistent with the assumed allowable soil bearing pressure with a geotechnical investigation from a qualified geotechnical engineer.

MATERIALS

Precast units shall be constructed and installed in accordance with CONSPAN® Specifications.
 Concrete for Footings shall have a minimum compressive strength of 4000 psi. Reinforcing steel for footings shall conform to ASTM A615 or A996-Grade 60.

NOTE: The design and alternates shown on this drawing is provided as a service to the project owner, engineer and contractor by CONTECH Bridge Solutions Inc. and shall not be used for any other project or modified in any manner without the prior written authorization of CONTECH Bridge Solutions Inc. Any such use, reproduction, or modification of this drawing is done at the user's own risk.

If discrepancies between the proposed information and actual field conditions are encountered at any time, the contractor shall immediately notify the project engineer in writing. CONTECH Bridge Solutions Inc. accepts no liability for designs based on inaccurate information supplied by others.

Rev.	Date	By	Description

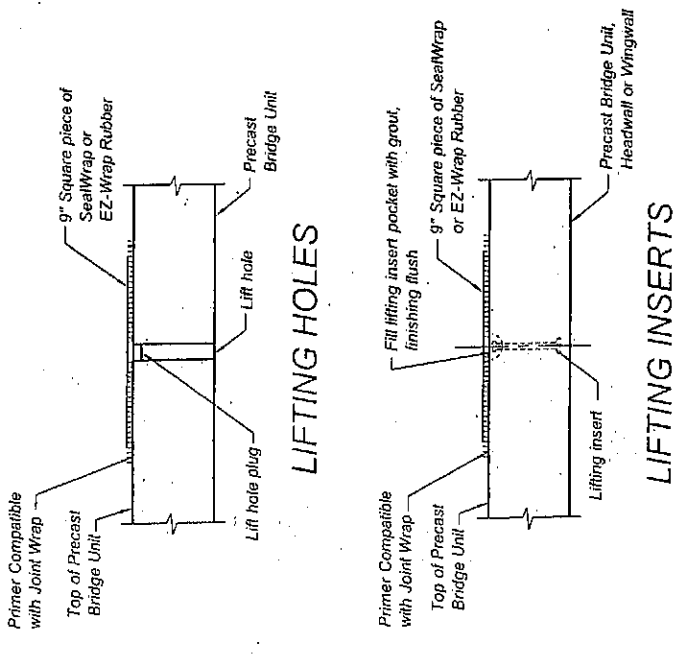
Company
CONTECH
 BRIDGE SOLUTIONS INC.
 9125 Centre Pointe Drive Suite 400 West Chester, Ohio 45069
 800-526-3899 513-645-7000 513-645-7983 FAX

CONTECH Road
CONSPAN®
 BRIDGE SYSTEMS
MURRAY ROAD
BAY SHORE, MICHIGAN

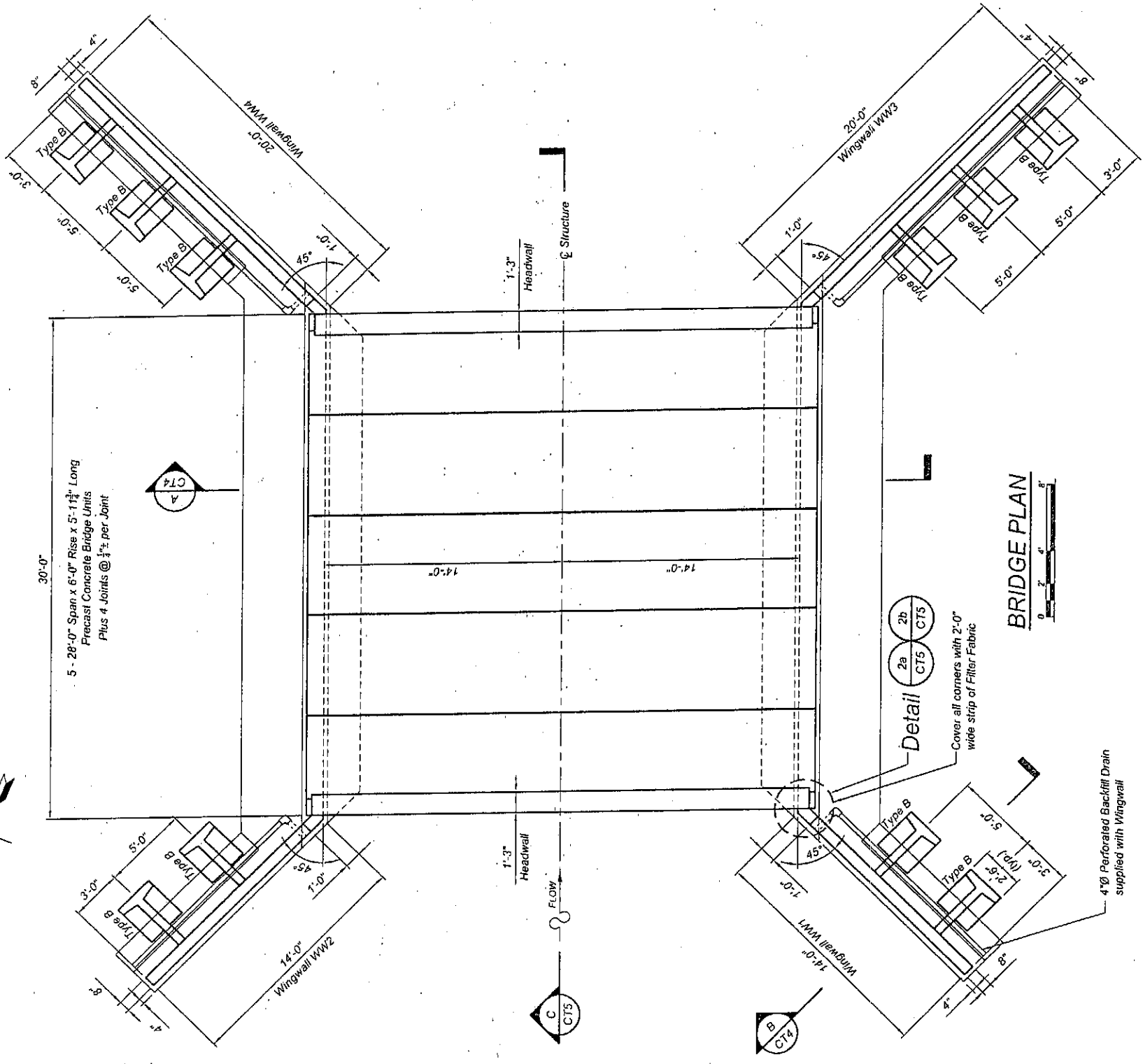
Project Status	Approval ONLY: NOT FOR CONSTRUCTION	Job No
Grouped	Item	4/30/2009
RAU	SMS	52181
Checked	Approved	MGC
MTB		

STATE OF MICHIGAN
 * MICHAEL G. CARFAGNO *
 ENGINEER
 No. 6201058078
 LICENSED PROFESSIONAL ENGINEER
 4/30/09

Sheet No. **CT1** of **CT7**



TYPICAL LIFT POINT SEALING DETAIL
not to scale



BRIDGE PLAN

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No.	Date	Description	By
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6			

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CONTECH
BRIDGE SOLUTIONS INC.
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CONISPAN
BRIDGE SYSTEMS
MURRAY ROAD
BAY SHORE, MICHIGAN

Project Status	APPROVAL ONLY - NOT FOR CONSTRUCTION
Design	RAU
Check	MTB
Drawn	SMS
Approval	MGC
Job No	52181
Date	4/30/2009

STATE OF MICHIGAN
MICHAEL G. CARFAGNO
ENGINEER
No. 6201038079
LICENSED PROFESSIONAL ENGINEER
4-30-09

STATE OF MICHIGAN
 MICHAEL G. CARFAGNO
 ENGINEER
 No. 6211653079
 LICENSED PROFESSIONAL ENGINEER
 4/30/2009

CT3 of CT7

APPROVAL ONLY: NOT FOR CONSTRUCTION	Project Status	Date Drawn
Designed: RAU	Drawn: SMS	4/30/2009
Checked: MTB	Approved: MGC	Job No: 52181

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 BRIDGE SYSTEMS

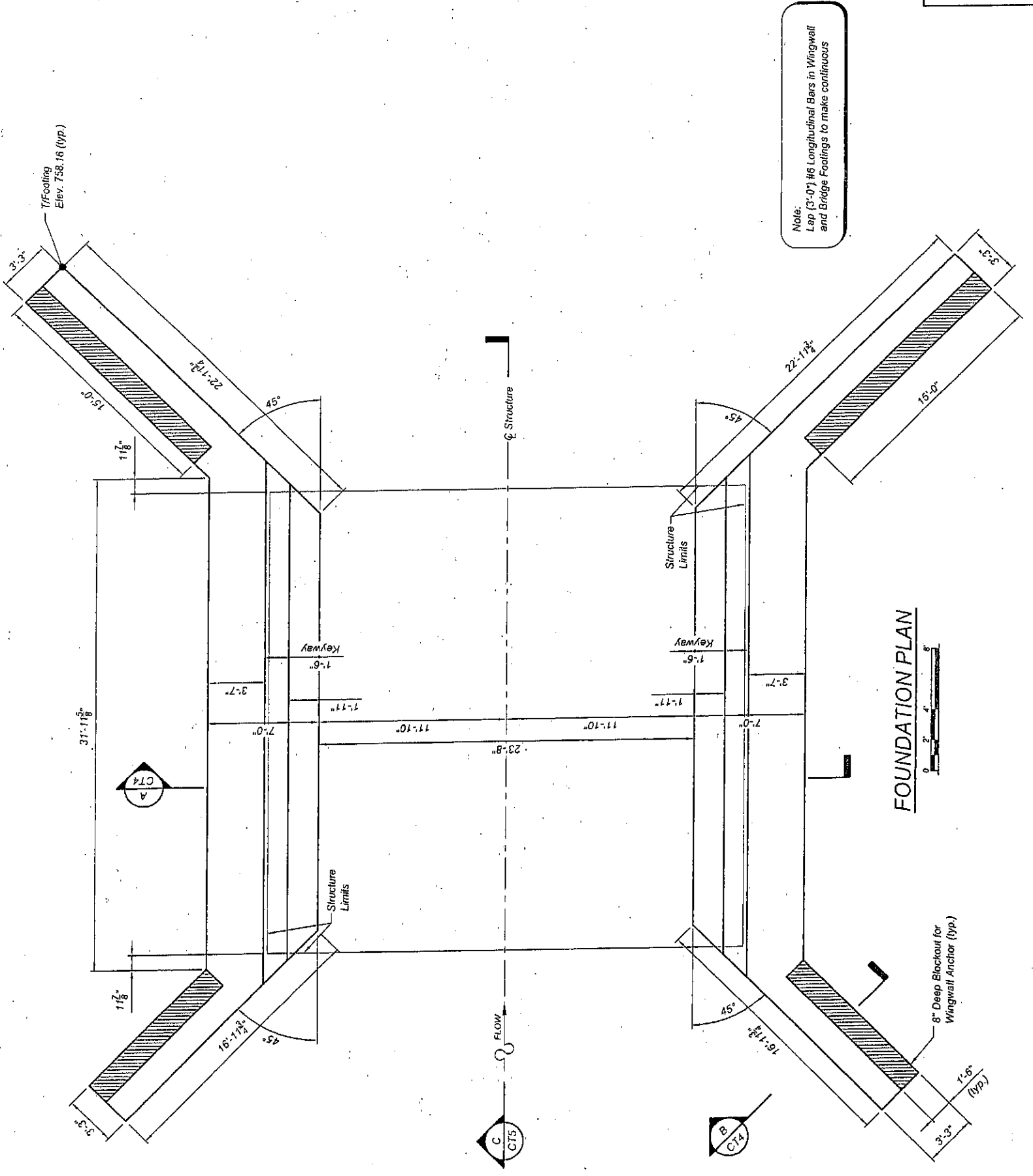
MURRAY ROAD
 BAY SHORE, MICHIGAN

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 BRIDGE SOLUTIONS INC.

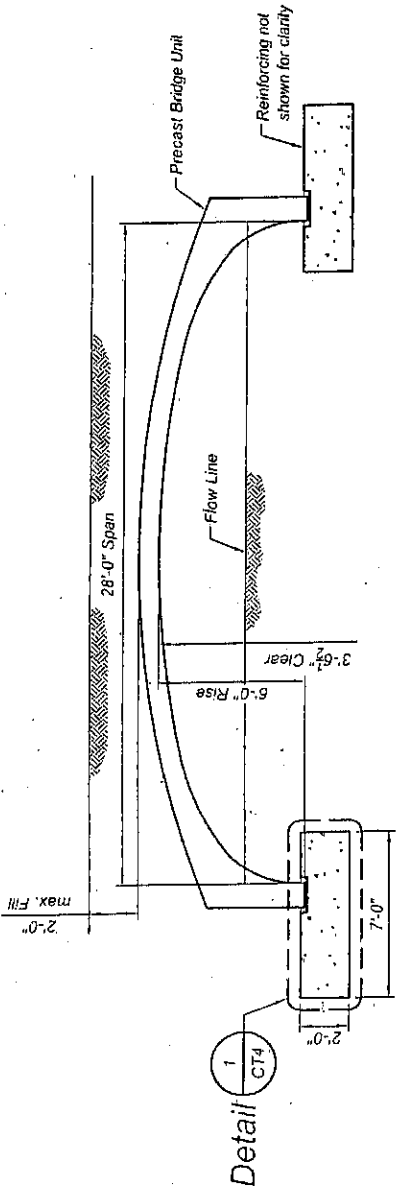
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Rev#	Date	Description	By
1			
2			
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REVISIONS



Note:
 Lap (3'-0") #6 Longitudinal Bars in Wingwall
 and Bridge Footings to make continuous



SECTION A of CT2

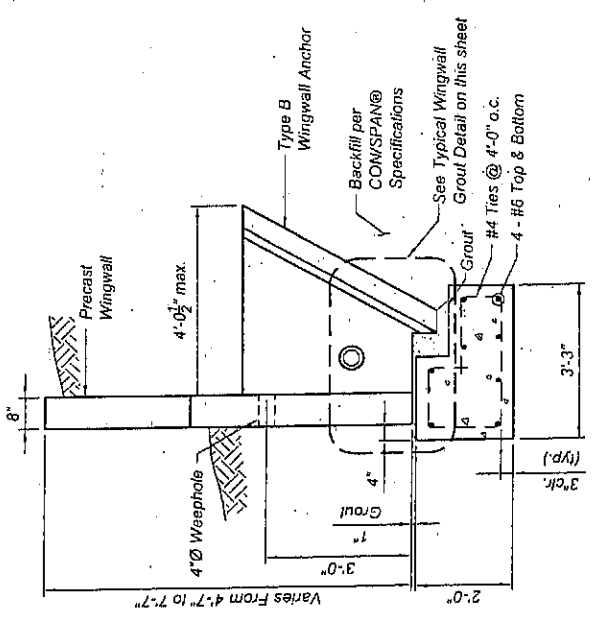
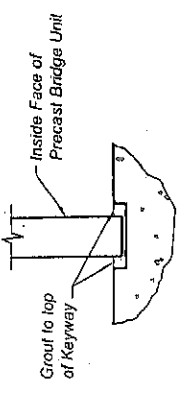
0 2' 4' 8'

DETAIL 1 of CT4

0 1' 2' 4'

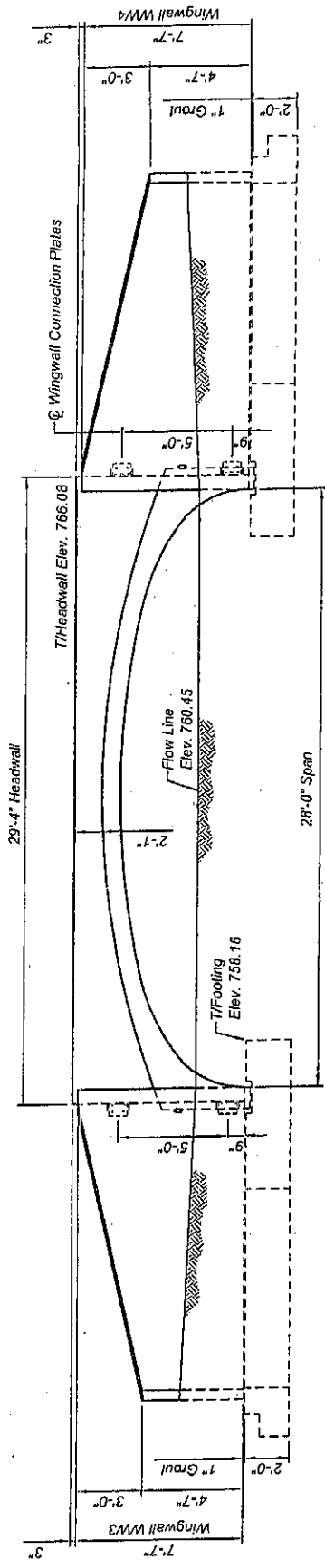
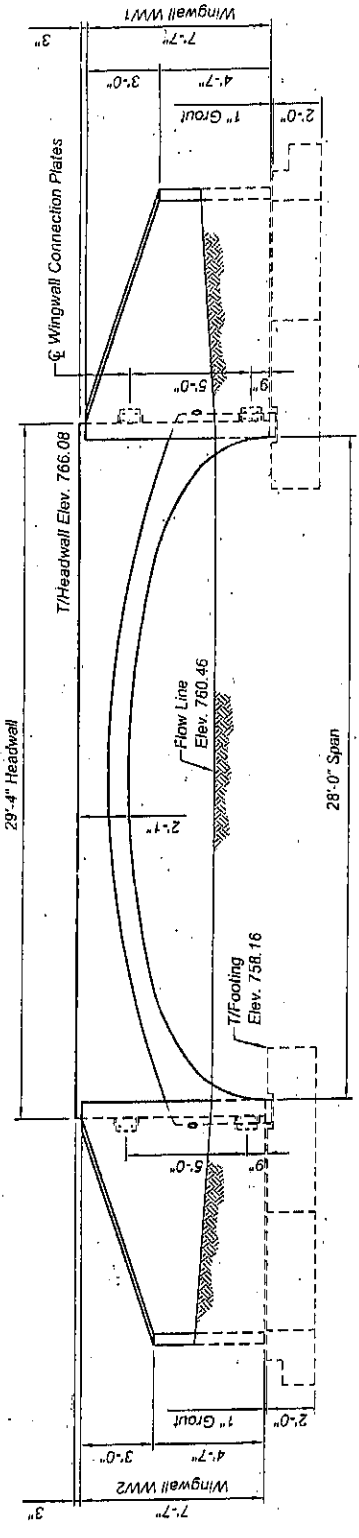
TYPICAL BRIDGE UNIT GROUT DETAIL

not to scale



SECTION B of CT2

0 1' 2' 3' 4'



TYPICAL WINGWALL GROUT DETAIL

not to scale

DOWNSTREAM END ELEVATION

0 2' 4' 8'

UPSTREAM END ELEVATION

0 2' 4' 8'

- Notes:**
- Minimum 1" Grout under wingwall leg & anchor stem.
 - Area between wingwall footing and wingwall anchor shall be grouted solid before backfill.
 - FORM BACKSIDE OF FOOTING TO DIMENSIONS SHOWN ON FOUNDATION PLAN.

NOTICE The notes and information shown on this drawing is intended as a service to the project owner, engineer and contractor by CONTECH Bridge Solutions Inc. No part of this drawing may be used, reproduced, or modified in any way without the written consent of CONTECH Bridge Solutions Inc. Any such use, reproduction, or modification of this drawing at some other user's own risk.

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Level	Date	By	Description

Level	Date	By	Description

Company

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9025 Centre Pointe Drive Suite 400 West Chester, Ohio 45089
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CONTECH Product

COMSPAN
BRIDGE SYSTEMS

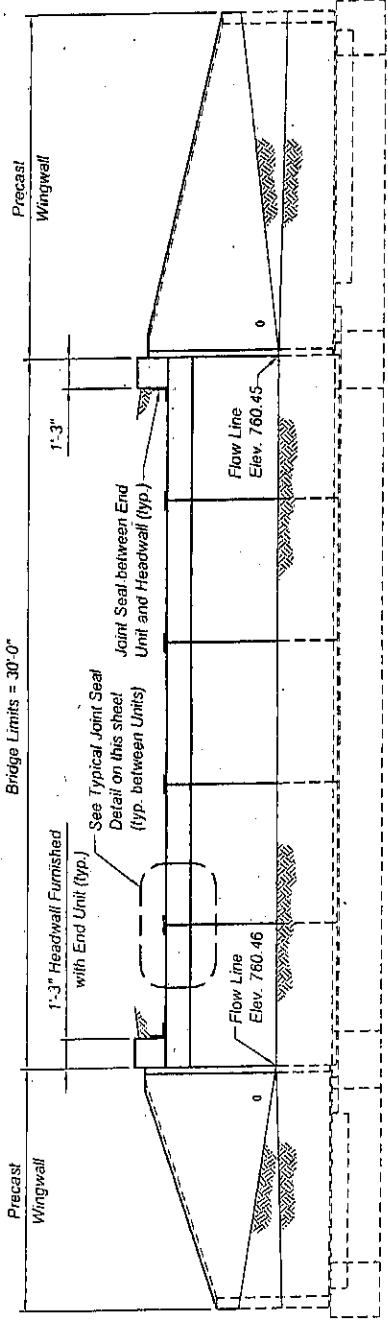
MURRAY ROAD
BAY SHORE, MICHIGAN

Project Sheet	Approval ONLY - NOT FOR CONSTRUCTION	Date Drawn	Job No.
		4/30/2009	52181

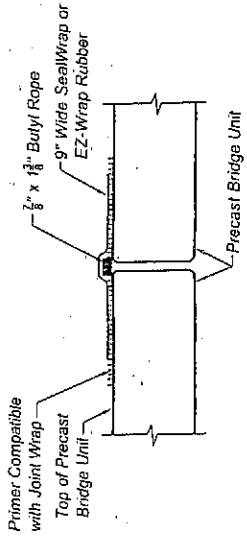
Drawn	Checked	Approved
RAU	MTB	MGC

STATE OF MICHIGAN
* LICENSED PROFESSIONAL ENGINEER *
MICHAEL G. CARFAGNO
ENGINEER
No. 16201053079

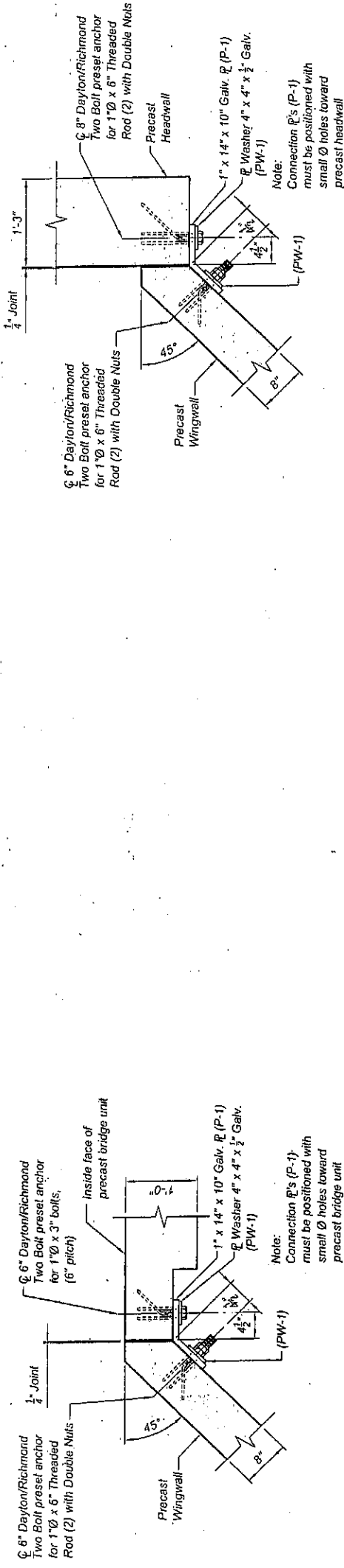
Sheet No. **CT4** of **CT7**



SECTION
0 2 4 8
C CT2



TYPICAL JOINT SEAL DETAIL
not to scale



DETAIL @ Unit Leg
0 1 2
2a CT2

DETAIL @ Headwall
0 1 2
2b CT2

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If discrepancies between the supplied information and actual field conditions are encountered at any time, the user shall be responsible for the solution of the discrepancy. CONTECH Bridge Solutions Inc. shall not be held responsible for design based on inaccurate information supplied by others.

Rev.	Date	Description	By:
6			
5			
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REVISIONS	

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800-526-3999 513-645-7000 513-645-7993 FAX
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CONISPAN®
BRIDGE SYSTEMS
MURRAY ROAD
BAY SHORE, MICHIGAN

APPROVAL ONLY - NOT FOR CONSTRUCTION	
Designed	RAU
Checked	MTB
Approved	MGC
Date Drawn	4/30/2009
Job No.	52181

STATE OF MICHIGAN
MICHAEL G. CARFAGNO
ENGINEER
LICENSED PROFESSIONAL ENGINEER
No. 6201055079
Sheet No. CT5 of CT7

SPECIFICATIONS FOR MANUFACTURE AND INSTALLATION OF CON/SPAN® BRIDGE SYSTEMS

1. Description

1.1. Type This work shall consist of furnishing and constructing a CON/SPAN® bridge system in accordance with these specifications and to reasonably close conformity with the lines, grades, design and dimensions shown on the plans or as established by the Engineer. In situations where two or more specifications apply to this work, the most stringent requirements shall govern.

1.2. Designation Precast reinforced concrete CON/SPAN® bridge units manufactured in accordance with this specification shall be designated by span and rise. Precast reinforced concrete wingwalls and headwalls manufactured in accordance with this specification shall be designated by length, height, and deflection angle.

2. Design

2.1. Specifications The precast elements are designed in accordance with the "Standard Specifications for Highway Bridges" 17th Edition, adopted by the American Association of State Highway and Transportation Officials, 2002. A minimum of one foot of cover above the crown of the bridge units is required in the installed condition. (Unless noted otherwise on the shop drawings and designed accordingly.)

3. Materials

3.1. Concrete The concrete for the precast elements shall be air-entrained when installed in areas subject to freeze-thaw conditions, composed of Portland cement, fine and coarse aggregates, admixtures and water. Air-entrained concrete shall contain 6 ± 2 percent air. The air-entraining admixture shall conform to AASHTO M154. The minimum concrete compressive strength shall be as shown on the shop drawings.

3.1.1. Portland Cement - Shall conform to the requirements of ASTM Specifications C150 - Type I, Type II, or Type III cement.

3.1.2. Coarse Aggregate - Shall consist of stone having a maximum size of 1 inch. Aggregate shall meet requirements for ASTM C33.

3.1.3. Water Reducing Admixture - The manufacturer may submit, for approval by the Engineer, a water-reducing admixture for the purpose of increasing workability and reducing the water requirement for the concrete.

3.1.4. Calcium Chloride - The addition to the mix of calcium chloride or admixtures containing calcium chloride will not be permitted.

3.1.5. Mixure The aggregates, cement and water shall be proportioned and mixed in a batch mixer to produce a homogeneous concrete meeting the strength requirements of this specification. The proportion of Portland cement in the mixture shall not be less than 564 pounds (6 sacks) per cubic yard of concrete.

3.2. Steel Reinforcement

3.2.1. The minimum steel yield strength shall be 60,000 psi, unless otherwise noted on the shop drawings.

3.2.2. All reinforcing steel for the precast elements shall be fabricated and placed in accordance with the detailed shop drawings submitted by the manufacturer.

3.2.3. Reinforcement shall consist of welded wire fabric conforming to ASTM Specification A 185 or A 497 or deformed billet steel bars conforming to ASTM Specification A 615, Grade 60. Longitudinal distribution reinforcement may consist of welded wire fabric or deformed billet steel bars.

3.3. Steel Hardware

3.3.1. Bolts and threaded rods for wingwall connections shall conform to ASTM A 307. Nuts shall conform to AASHTO M292 (ASTM A194) Grade 2H. All bolts, threaded rods and nuts used in wingwall connections shall be mechanically zinc coated in accordance with ASTM B 695 Class 50.

3.3.2. Structural Steel for wingwall connection plates and plate washers shall conform to AASHTO M 270 (ASTM A 709) Grade 36 and shall be hot dip galvanized as per AASHTO M111 (ASTM A123).

3.3.3. Inserts for wingwalls shall be 1" diameter Two-Boat Prestal Wingwall Anchors as manufactured by Dayton/Richmond Concrete Accessories, Mansburg, Ohio, (800) 745-3700. Ferrous Loop Inserts shall be F-64 Ferrous Loop Inserts as manufactured by Dayton/Richmond Concrete Accessories, Mansburg, Ohio, (800) 745-3700.

3.3.4. Hook Bolts used in attached headwall connections shall be ASTM A307.

3.3.5. Inserts for detached headwall connections shall be AISI Type 304 stainless steel, F-58 Expanded Coil Inserts as manufactured by Dayton/Richmond Concrete Accessories, Mansburg, Ohio, (800) 745-3700. Coil rods and nuts used in headwall connections shall be AISI Type 304 stainless steel. Washers used in headwall connections shall be either AISI Type 304 stainless steel plate washers or AASHTO M270 (ASTM A709) Grade 36 plate washers hot dip galvanized as per AASHTO M111 (ASTM A123).

3.3.7. Reinforcing bar splices shall be made using the Dowel Bar Splicer System as manufactured by Dayton/Richmond Concrete Accessories, Mansburg, Ohio, (800) 745-3700, and shall consist of the Dowel Bar Splicer (DB-SAE) and Dowel-In (DI).

4. Manufacture of Precast Elements

Subject to the provisions of Section 5, below, the precast element dimension and reinforcement details shall be as prescribed in the plan and section drawings provided by the manufacturer.

4.1. Forms The forms used in manufacture shall be sufficiently rigid and accurate to maintain the required precast element dimensions within the permissible variations given in Section 5 of these specifications. All casting surfaces shall be of a smooth material.

4.2. Placement of Reinforcement

4.2.1. Placement of reinforcement in Precast Bridge Units - The cover of concrete over the outside circumferential reinforcement shall be 2 inches minimum. The cover of concrete over the inside circumferential reinforcement shall be 1 1/2 inches minimum, unless otherwise noted on the shop drawings. The clear distance of the end and circumferential wires shall not be less than one inch nor more than two inches from the ends of each section. Reinforcement shall be assembled utilizing single or multiple layers of welded wire fabric (not to exceed 3 layers), supplemented with a single layer of deformed billet steel bars, when necessary. Welded wire fabric shall be composed of circumferential and longitudinal wires meeting the spacing requirements of 4.3, below, and shall contain sufficient longitudinal wires extending through the bridge unit to maintain the shape and position of the reinforcement. Longitudinal distribution reinforcement may be welded wire fabric or deformed billet steel bars and shall meet the spacing requirements of 4.3, below. The ends of the longitudinal distribution reinforcement shall be not more than 3 inches and not less than 1 1/2 inches from the ends of the bridge unit.

4.2.2. Bending of Reinforcement for Precast Bridge Units - The outside and inside circumferential reinforcing steel for the corners of the bridge shall be bent to such an angle that is approximately equal to the configuration of the bridge's outside corner.

4.2.3. Placement of Reinforcement for Precast Wingwalls and Headwalls - The cover of concrete over the longitudinal and transverse reinforcement shall be 2 inches minimum. The clear distance from the end of each precast element to the end of reinforcing steel shall not be less than 1/2 inch nor more than 3 inches. Reinforcement shall be assembled utilizing a single layer of welded wire fabric, or a single layer of deformed billet steel bars. Welded wire fabric shall be composed of transverse and longitudinal wires meeting the spacing requirements of 4.3, below, and shall contain sufficient longitudinal wires extending through the element to maintain the shape and position of the reinforcement. Longitudinal reinforcement may be welded wire fabric or deformed billet steel bars and shall meet the spacing requirements of 4.3, below.

4.3. Laps, Weeds, Spacing

4.3.1. Laps, Weeds, and Spacing for Precast Bridge Units - Tension spaces in the circumferential reinforcement shall be made by lapping. Laps may be lapped together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 8.30.2 and 8.32.6. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 8.30.1 and 8.32.5. The overlap of welded wire fabric shall be measured between the outer-most longitudinal wires of each fabric sheet. For deformed billet steel bars, the overlap shall meet the requirements of AASHTO 8.25.

For splices other than tension splices, the overlap shall be a minimum of 12" for welded wire fabric or deformed billet steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be not less than 2 inches nor more than 4 inches. The spacing center to center of the longitudinal wires shall not be more than 8 inches. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 16 inches.

4.3.2. Laps, Weeds, and Spacing for Precast Wingwalls and Headwalls - Splices in the reinforcement shall be made by lapping. Laps may be lapped together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 8.30.2 and 8.32.6. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 8.30.1 and 8.32.5. The overlap of welded wire fabric shall be measured between the outer-most longitudinal wires of each fabric sheet. For deformed billet steel bars, the overlap shall meet the requirements of AASHTO 8.25.

4.4. Curing The precast concrete elements shall be cured for a sufficient length of time so that the concrete will develop the specified compressive strength in 28 days or less. Any one of the following methods of curing or combinations thereof shall be used:

4.4.1. Steam Curing - The precast elements may be low-pressure steam cured by a system that will maintain a moist atmosphere around the precast elements.

4.4.2. Water Curing - The precast elements may be water cured by any method that will keep the sections moist.

4.4.3. Membrane Curing - A sealing membrane conforming to the requirements of ASTM Specification C309 may be applied and shall be left intact until the required concrete compressive strength is attained. The concrete temperature at the time of

strength is attained. The concrete temperature at the time of application shall be within 4°-10 degrees F of the atmospheric temperature. All surfaces shall be kept moist prior to the application of the compounds and shall be damp when the compound is applied.

4.5. Storage, Handling & Delivery

4.5.1. Storage Precast concrete bridge elements shall be lifted and stored in a "cast" position. Precast concrete headwall and wingwall units are cast, stored and shipped in a flat position.

4.5.2. The precast elements shall be stored in such a manner to prevent cracking or damage. Store elements using timber supports as appropriate. The units shall not be moved until the concrete compressive strength has reached a minimum of 2500 psi, and they shall not be stored in an upright position.

4.5.3. Handling Handling devices shall be permitted in each precast element for the purpose of handling and setting. Spreader beams may be required for the lifting of precast concrete bridge elements to preclude damage from bending or torsion forces.

4.6. Delivery Precast concrete elements must not be shipped until the concrete has attained the specified design compressive strength, or as directed by the design Engineer.

4.6.1. Precast concrete elements may be unloaded and placed on the ground at the site until installed. Store elements using timber supports as appropriate.

4.6.2. Quality Assurance The Precaster shall demonstrate adherence to the standards set forth in the NPCC Quality Control Manual. The Precaster shall meet either Section 4.7.1 or 4.7.2.

4.6.3. Certification The Precaster shall be certified by the Precast/Prestressed Concrete Institute Plant Certification Program or the National Precast Concrete Association's Plant Certification Program prior to and during production of the products covered by this specification.

4.6.4. Qualifications, Testing and Inspection 4.6.4.1. The Precaster shall have been in the business of producing precast concrete products similar to those specified for a minimum of three years. He shall maintain a permanent quality control department or retain an independent testing agency on a continuing basis.

4.6.4.2. The Precaster shall have a current certificate of registration from an independent testing agency on a continuing basis. The agency, detailing the ability of the Precaster to produce quality products consistent with industry standards.

4.6.4.3. The Precaster shall show that the following tests are performed in accordance with the ASTM standards indicated. Tests shall be performed as indicated in Section 6 of these specifications.

4.6.2.2.1. Air Content: C231 or C171

4.6.2.2.2. Precaster shall provide documentation demonstrating compliance with this section to CONTECH® Bridge Solutions at regular intervals or upon request.

4.6.2.3. The Owner may place an inspector in the plant when the products covered by this specification are being manufactured.

4.6.3. Documentation - The Precaster shall submit Precast Production Reports to CONTECH® Bridge Solutions as required.

5. Permissible Variations

5.1. Bridge Units

5.1.1. Internal Dimensions - The internal dimension shall vary no more than 1% from the design dimensions nor more than 1/2 inches whichever is less.

5.1.2. Slab and Wall Thickness - The slab and wall thickness shall not be less than that shown in the design by more than 1/4 inch. A thickness more than that required in the design shall not be cause for rejection.

5.1.3. Length of Opposite Surfaces - Variations in laying lengths of two opposite surfaces of the bridge unit shall not be more than 1/2 inch in any section, except where beveled ends for laying of curves are specified by the purchaser.

5.1.4. Length of Section - The under-run in length of a section shall not be more than 1/2 inch in any bridge unit.

5.1.5. Position of Reinforcement - The maximum variation in position of the reinforcement shall be ± 1/2 inch. In no case shall the cover over the reinforcement be less than 1 1/2 inches for the outside circumferential steel or be less than 1 inch for the inside circumferential steel as measured to the external or internal surface of the bridge. These tolerances or cover requirements do not apply to maling surfaces of the joints.

5.1.6. Area of Reinforcement - The areas of steel reinforcement shall be the design areas as shown in the manufacturer's shop drawings. Steel areas greater than those manufactured shall not be cause for rejection. The permissible variation in diameter of any

reinforcement shall conform to the tolerances prescribed in the ASTM Specification for that type of reinforcement.

5.2. Wingwalls & Headwalls

5.2.1. Wall Thickness - The wall thickness shall not vary from that shown in the design by more than 1/2 inch.

5.2.2. Length/Height of Wall Sections - The length and height of the wall shall not vary from that shown in the design by more than 1/2 inch.

5.2.3. Position of Reinforcement - The maximum variation in the position of the reinforcement shall be ± 1/2 inch. In no case shall the cover over the reinforcement be less than 1 1/2 inches.

5.2.4. Size of Reinforcement - The permissible variation in diameter of any reinforcing shall conform to the tolerances prescribed in the ASTM Specification for that type of reinforcement. Steel area greater than that required shall not be cause for rejection.

6. Testing/Inspection

6.1. Testing

6.1.1. Type of Test Specimen - Concrete compressive strength shall be determined from compression tests made on cylinders or cores. For cylinder testing, a minimum of 3 cylinders shall be taken for each lot of bridge elements. (A lot is defined as the precast elements made using the same concrete mix during a single day's production.) For core testing, one core shall be cut from each of 3 precast elements selected at random from each group of 15 or fewer elements made using a single concrete mix in the same day's production. Each lot shall be considered separately for the purpose of testing and acceptance.

6.1.2. Compression Testing - Cylinders shall be made and tested as prescribed by the ASTM C 39 Specification. Cores shall be obtained and tested for compressive strength in accordance with the provisions of the ASTM C42 Specification.

6.1.3. Acceptability of Cylinder Tests - When the average compressive strength of all cylinders tested is equal to or greater than the design compressive strength, and not more than 10% of the cylinders tested have a compressive strength less than the design compressive strength, and no cylinder tested has a compressive strength less than 80% of the design compressive strength, then the lot shall be accepted. When the compressive strength of the cylinders tested does not conform to these acceptance criteria, the acceptability of the lot may be determined as described in section 6.1.4, below.

6.1.4. Acceptability of Core Tests - The compressive strength of the concrete in a lot is acceptable when the average core test strength is equal to or greater than the design concrete strength. When the compressive strength of a core tested is less than the design concrete strength, the precast element from which that core was taken may be re-cored. When the compressive strength of the re-core is equal to or greater than the design strength, the compressive strength of the concrete in that lot is acceptable.

6.1.4.1. When the compressive strength of any re-core is less than the design concrete strength, the precast element from which that core was taken shall be rejected. Two precast elements from the remainder of the lot shall be selected at random and one core shall be taken from each. If the compressive strength of both cores is equal to or greater than the design concrete strength, the compressive strength of the remainder of that group is acceptable. If the compressive strength of either of the two cores tested is less than the design concrete strength, the remainder of the group shall be rejected or, at the option of the manufacturer, each precast element of the remainder of the group shall be cored and accepted individually, and any of these elements that have cores with less than the design concrete strength shall be rejected. Plugging Core Holes - The core holes in a manner such that the elements will meet all of the test requirements of this specification. Precast elements so sealed shall be considered satisfactory for use.

6.1.4.2. Test Equipment - Every manufacturer furnishing precast elements under this specification shall furnish all facilities and personnel necessary to carry out the test required.

6.2. Inspection The quality of materials, the process of manufacture, and the finished precast elements shall be subject to inspection by the purchaser.

7. Joints The bridge units shall be provided with flat butt ends. The ends of the bridge units shall be such that when the sections are laid together they will make a continuous line with a smooth interior face of appreciable irregularities, all compatible with the permissible variations in section 5, above. The joint width between adjacent precast units shall not exceed 3/4 inches.

8. Workmanship/Finish

The bridge units, wingwalls, and headwalls shall be substantially free of imperfections. The ends of the bridge units shall be normal to the walls and centerline of the bridge section, within the limits of the variations given in section 5, above, except where beveled ends are specified. The faces of the wingwalls and headwalls shall be parallel to each other, within the limits of variations given in section 5, above. The surfaces of the precast elements shall be a smooth steel form or troweled surface. Trapped air pockets causing surface defects shall be considered as part of a smooth, steel form finish.

9. Repairs

Precast elements may be repaired, if necessary, because of imperfections in manufacture or handling damage and will be acceptable if, in the opinion of the purchaser, the repairs are sound, properly finished and cured, and the repaired section conforms to the requirements of this specification.

10. Rejection

The precast elements shall be subject to rejection on account of any of the specification requirements. Individual precast elements may be rejected because of any of the following:

10.1. Fractures or cracks passing through the wall, except for a single end crack that does not exceed one half the thickness of the wall.

10.2. Defects that indicate proportioning, mixing, and molding not in compliance with section 4 of these specifications.

10.3. Honeycombed or open texture.

10.4. Damaged ends, where such damage would prevent making a satisfactory joint.

11. Marking

Each bridge unit shall be clearly marked by waterproof paint. The following shall be shown on the inside of the vertical leg of the bridge section:

Bridge Span X Bridge Rise

Date of Manufacture

Name or Trademark of the Manufacturer

Rev.	Date	By	Description
1			
2			
3			
4			
5			
6			

Project Status	Designed	Checked	Approved
APPROVAL ONLY: NOT FOR CONSTRUCTION	RAU	MTB	MGC

Owner	Date Drawn	Job No	Sheet No.
SMS	4/30/2009		CT6 of CT7

CONTECH®
BRIDGE SOLUTIONS INC.
9025 Centre Pointe Drive Suite 400 West Chester, Ohio 45069
800-526-3999 513-645-7000 513-645-7993 FAX

CONTECH®
BRIDGE SYSTEMS

MURRAY ROAD
BAY SHORE, MICHIGAN

STATE OF MICHIGAN
MICHAEL G. CARFAGNO
ENGINEER
No. 16201053079
LICENSED PROFESSIONAL ENGINEER

5-30-09

SPECIFICATIONS FOR MANUFACTURE AND INSTALLATION OF CON/SPAN® BRIDGE SYSTEMS (CONT'D)

12. Installation Preparation

To ensure correct installation of the precast concrete bridge system, care and caution must be exercised in forming the support areas for bridge units, headwall, and wingwall elements. Exercising special care will facilitate the rapid installation of the precast components.

12.1. Footings
Do not over excavate foundations unless directed by site soil engineer to remove unsuitable soil.

The site soils engineer shall certify that the bearing capacity meets or exceeds the footing design requirements, prior to the contractor pouring the footings. A copy of the report shall be submitted to CONTECH® Bridge Solutions prior to shipment of precast concrete elements.

The bridge units and wingwalls shall be installed on either precast or cast-in-place concrete footings. The size and elevation of the footings shall be as designed by the Engineer. A keyway shall be formed in the top surface of the bridge footing as specified on the plans. No keyway is required in the wingwall footings, unless otherwise specified on the plans.

The footings shall be given a smooth float finish and shall reach a compressive strength of 2,000 psi before placement of the bridge and wingwall elements. Backfilling shall not begin until the footing has reached the full design compressive strength without written approval from CONTECH® Bridge Solutions.

The footing surface shall be constructed in accordance with grades shown on the plans. When finished with a 10-foot straight edge, the surface shall not vary more than 1/4 inch in 10 feet.

If a precast concrete footing is used, the contractor shall prepare a 4-inch thick base layer of compacted granular material the full width of the footing prior to placing the precast footing.

The foundations for precast concrete bridge elements and wingwalls must be compacted by reinforcement to form one monolithic body. Expansion joints shall not be used.

The contractor shall be responsible for the construction of the foundations per the plans and specifications.

13. Installation

13.1. General
The installation of the precast concrete elements shall be as expeditious in the publication CON/SPAN Bridge Systems Installation Handbook.

13.1.1. Lifting
It is the responsibility of the contractor to ensure that a crane of the correct lifting capacity is available to handle the precast concrete units. This can be accomplished by using the weights given for the precast concrete components and by determining the lifting reach for each crane unit. Site conditions must be checked well in advance of shipping to ensure proper crane location and to avoid any lifting restrictions. The lift anchors or holes provided in each unit are the only means to be used to lift the elements. The precast concrete elements must not be supported or raised by other means than those given in the manuals and drawings without written approval from CONTECH® Bridge Solutions.

13.1.2. Construction equipment weight restrictions: In no case shall equipment operating in excess of the design load (HS20 or HS25) be permitted over the bridge units unless approved by CONTECH® Bridge Solutions.
13.1.2.1 In the immediate area of the bridge units, the following restrictions for the use of heavy construction machinery during backfilling operations apply:
• Precast concrete bridge unit.
• After the compacted fill level has reached a minimum of 4 inches over the crown of the bridge, construction equipment with a weight of less than 10 tons may cross the bridge.
• After the compacted fill level has reached a minimum of 1 foot over the crown of the bridge, construction equipment with a weight of less than 30 tons may cross the bridge.
• After the compacted fill level has reached the design cover, or 2 feet minimum, over the crown of the precast concrete bridge, construction equipment within the design load limits for the road may cross the precast concrete bridge.

13.2. Leveling Pad/Shims
The bridge units and wingwalls shall be set on masonry or steel shims measuring 6" x 6", minimum, unless shown otherwise on the plans. A minimum gap of 1/2 inch shall be provided between the footing and the bottom of the bridge's vertical legs or the bottom of the wingwall.

13.3. Placement of Bridge Units

The bridge units shall be placed as shown on the Engineer's plan drawings. Special care shall be taken in setting the elements to the true line and grade. The joint width between adjacent precast units shall not exceed 3/4 inches.

It is imperative that any lateral spreading of the bridge elements be avoided during and after their placement. Generally, horizontal cable ties are shipped in the larger bridge elements to prevent this spreading. If, due to site restrictions, these ties must be removed prior to placement of the bridge element, the contractor must provide hardwood wedges on site. These hardwood wedges are placed in the keyway outside the legs of the bridge elements, and smaller shims and wedges are added before complete release of the bridge element from the crane. Also, a supply of 1/2 inch and 1/4 inch steel or masonry shims for various shimming purposes should be on site, per section 13.2.

13.4. Placement of Wingwalls & Headwalls
The wingwalls and headwalls shall be placed as shown on the plan drawings. Special care shall be taken in setting the elements to the true line and grade.

13.5. Waterproofing Joint Protection and Subsurface Drainage
13.5.1. External Protection of Joints - The full joint made by two adjoining bridge units shall be covered with a 7/8" x 1/8" preformed bituminous joint sealant and a minimum of a 9-inch wide joint wrap. The surface shall be free of dirt before applying the joint material. A primer compatible with the joint wrap to be used shall be applied for a minimum width of nine inches on each side of the joint. The external wrap shall be either EZ-WRAP RUBBER or PRESS-SEAL GASKET CORPORATION SEAL WRAP by MAR MAC.

13.5.2. Internal Protection of Joints - The joint shall be covered continuously from the bottom of one bridge section leg, across the top of the bridge and to the opposite bridge section leg. Any gaps that result in the joint wrap shall be a minimum of six inches long with the overlap running downhill. In addition to the joints between bridge units, the joint between the end bridge unit and the headwall shall also be sealed as described above. If precast wingwalls are used, the joint between the end bridge unit and the wingwall shall be sealed with a 2" strip of filter fabric. Also, if filter fabric is formed in the bridge units, they shall be primed and covered with a 9" x 9" square of joint wrap.

13.5.3. During the backfilling operation, care shall be taken to keep the joint wrap in its proper location over the joint.

13.5.4. Subsoil drainage shall be as directed by the engineer.

13.6. Grouting
13.6.1. Grouting shall not be performed when temperatures are expected to go below 35° for a period of 72 hours.

13.6.2. All grout shall have a maximum aggregate size of 1/2 inch.
13.6.3. Lifting and erection anchor recesses, shall be filled with grout.
13.7. Backfill
13.7.1. Do not perform backfilling during wet or freezing weather. They have been approved by the Engineer.
13.7.2. No backfill shall be placed against any structural elements until the embankment adjacent to the precast concrete elements. The project construction and material specifications, which include excavation and embankment construction, shall apply except as modified in this section.
13.7.4. Backfill Zones
• In-situ soil
• Zone A: constructed embankment or overfill.
• Zone B: fill that is directly associated with precast concrete bridge installation.
• Zone C: road structure.
13.7.5. Required Backfill Properties
13.7.5.1. In-situ soil
Natural ground is to be sufficiently stable to allow effective support to the precast concrete bridge units. As a guide, the existing natural ground should be of similar quality and density to Zone B material for minimum lateral dimension of one bridge span outside of the bridge footing.
13.7.5.2. Zone A
Zone A requires fill material with specifications and compaction procedures equal to that for normal road embankments.

13.7.5.3. Zone B

Generally, soils shall be reasonably free of organic matter, and near concrete surfaces, free of stones larger than 1 inches in diameter. See charts for detailed descriptions of acceptable soils.

13.7.5.4. Zone C
Zone C is the road section of gravel, asphalt or concrete built in compliance with local engineering practices.

13.7.6. Placing and Compacting Backfill
Dumping for backfilling is not allowed any nearer than 3 ft from the bridge leg.

The fill must be placed and compacted in layers not exceeding 8 inches. The maximum difference in the surface levels of the fill on opposite sides of the bridge must not exceed 2 feet.

The fill behind wingwalls must be placed at the same time as that of the bridge fill. It must be placed in progressively placed horizontal layers not exceeding 8 inches per layer.

The backfill of Zone B shall be compacted to a minimum density of 95% of the Standard Proctor, as required by AASHTO T-99.

Soil within 1 foot of concrete surfaces should be hand-compacted. Elsewhere, use of rollers is acceptable. If vibrating roller-compactors are used, they should not be started or stopped within Zone B and the vibration frequency should be at least 30 revolutions per second.

The backfill material and compacting behind wingwalls should satisfy the criteria for the bridge backfill, Zone B.

Backfill against a waterproofed surface shall be placed carefully to avoid damage to the waterproofing material.

13.7.7. Bridge Units
For fill heights over 12 feet, no backfilling may begin until a backfill compaction testing plan has been coordinated with and approved by CONTECH® Bridge Solutions. Cost of the backfill compaction testing shall be included in the cost of the precast units. This included cost applies only to projects with fill heights over 12 feet (as measured from top crown of bridge to finished grade).

13.7.8. Wingwalls
Backfill in front of wingwalls shall be carried to ground lines shown in the plans.

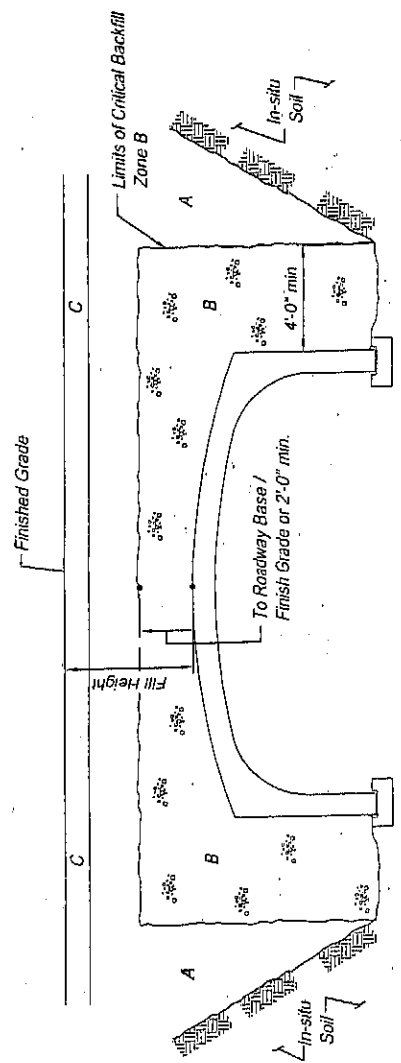
13.8. Monitoring
The contractor shall check settlements and horizontal displacement of foundation to ensure that they are within the allowable limit provided by the engineer. These measurements should give an indication of the settlements and deformations along the length of the foundations.

The first measurement row should take place after the erection of all precast bridge system elements, a second after completion of backfilling, and a third before opening of the bridge to traffic. Further measurements may be made according to local conditions.

The maximum difference in vertical displacements Y should not exceed 1 inch along the length of one foundation.

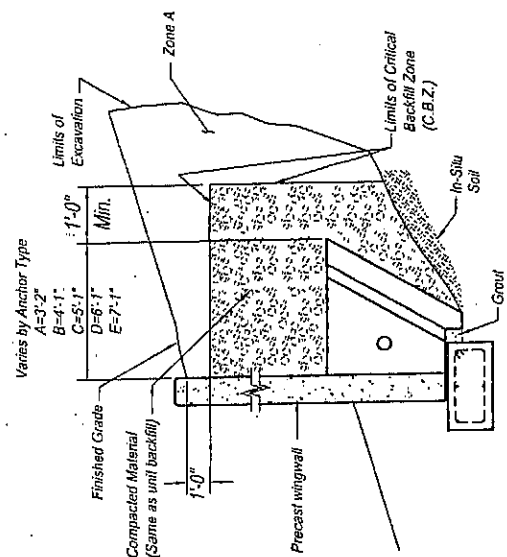
Acceptable Soils for use in Zone B Backfill

Typical USCS Materials	AASHTO Group	AASHTO SubGroup	Percent passing US Sieve No. #40	#200	Liquid Limit	Plasticity Index	Soil Description
GM, GP, SP	A-1	A-1a	50 max	30 max	15 max	6 max	Largely gravel but can include sand and fines
GM, SM, SP, SN	A-1	A-1b	50 max	50 max	25 max	6 max	Gravelly sand or graded sand, may include fines
GM, SM, ML, SP, GP	A-2	A-2-4	35 max	35 max	40 max	10 max	Sands, gravels with low-plasticity silt fines
SC, GC, GM	A-2	A-2-5	35 max	35 max	41 max	10 max	Sands, gravels with plastic silt fines
SP, SM, SW	A-3		51 min	10 max	non-plastic		Fine sands
ML, SM, SC	A-4		35 min	40 max	10 max		Low-compressibility silts



SPAN	FILL HEIGHT	ACCEPTABLE MATERIAL INSIDE ZONE B
≤ 24'-0"	≥ 12'-0"	A-1, A-3
≤ 24'-0"	< 12'-0"	A-1, A-2, A-3, A-4
≥ 24'-0"	all	A-1, A-3

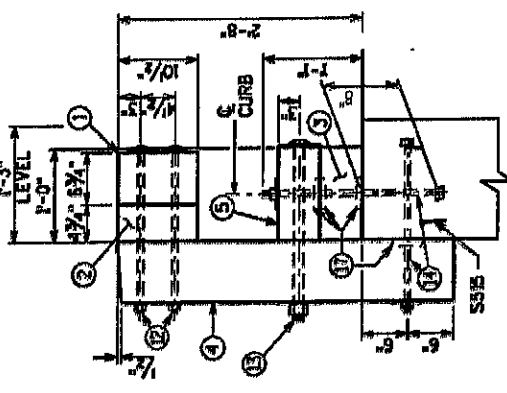
BACKFILL REQUIREMENTS



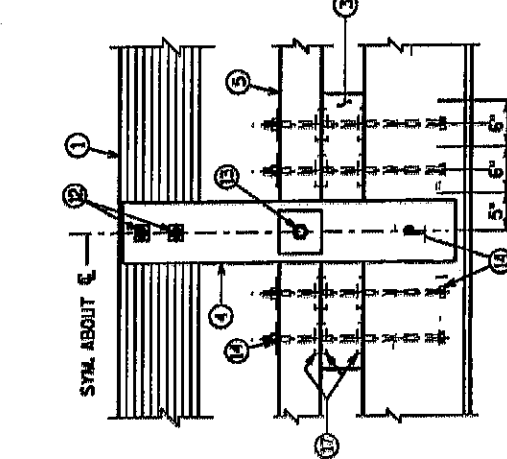
WALL BACKFILL REQUIREMENTS

STATE OF MICHIGAN
MICHAEL G. CARFAGNO
ENGINEER
No. 6201163079
LICENSED PROFESSIONAL ENGINEER

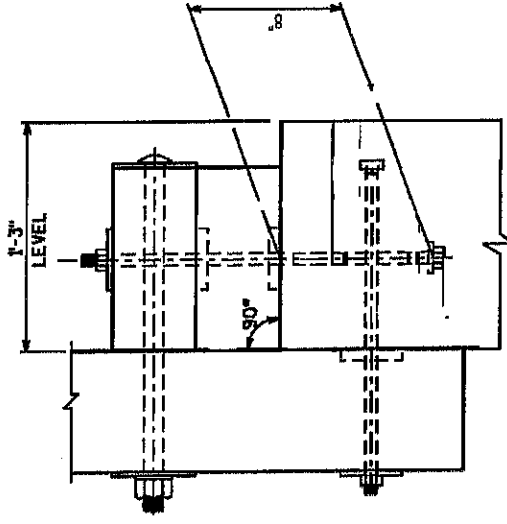
CONTECH® BRIDGE SYSTEMS		CONTECH Product		APPROVAL ONLY - NOT FOR CONSTRUCTION																													
Project Status	Design	Drawn	4/30/2009	Checked	52181																												
Designer	RAU	Appr'd	SMS	Job No.	CT7 of CT7																												
Checker	MTB	Appr'd	MGC																														
<p>CONTECH® BRIDGE SOLUTIONS INC. 9025 Centre Pointe Drive Suite 400 West Chester, Ohio 45399 800-526-3999 513-645-7000 513-645-7993 FAX</p>																																	
<p>MURRAY ROAD BAY SHORE, MICHIGAN</p>																																	
<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>Level</th> <th>By</th> <th>Description</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>6</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Level	By	Description	Date	6				5				4				3				2				1			
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<p>NOTICE: The design and information shown on this drawing is provided by CONTECH® Bridge Solutions Inc. No part of this drawing may be used, reproduced, or modified in any manner without the prior written authorization of CONTECH® Bridge Solutions Inc. If any questions, between the engineer, architect and contractor, arise during the construction of the project, they shall be referred to the engineer of record. If any questions arise during the design, CONTECH® Bridge Solutions Inc. shall not be responsible for any errors or omissions in the drawing or information provided by others.</p>																																	



SECTION THRU RAIL
ALSO SEE "EDGE OF SLAB DETAILS"



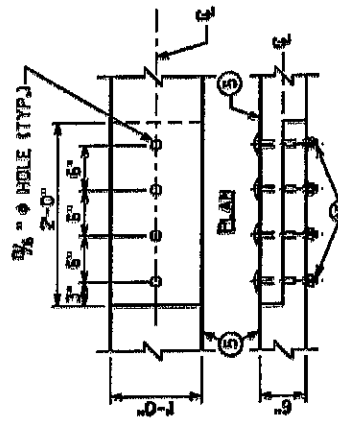
BACK ELEVATION



EDGE OF SLAB DETAIL

- LEGEND**
- ① GLULAM RAIL 6 7/8" X 10 1/2"
 - ② RAIL SPACER BLOCK 8" X 4 1/2" X 10 1/2"
 - ③ SCUPPER BLOCK 6" X 12" X 3'-0"
 - ④ RAIL POST @ STRUCTURE 8" X 8" X 3'-8"
 - ⑤ CURB 6" X 12"
 - ⑪ STEEL SPLICE PLATE, ASTM A36.
 - ⑫ 7/8" X 1'-10" LONG ASTM A307, GRADE 2, DOME-HEAD BOLT W/ 1-PLATE WASHER PER BOLT. 12 REQ. @ EACH RAIL TO POST CONNECTION. 4 REQ. @ EACH RAIL SPLICE.

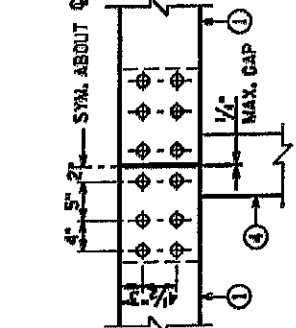
- ⑬ 1/2" X 1'-10" LONG ASTM A325, DOME-HEAD BOLT W/ 2 - 5/8" X 5 1/2" X 1/2" PLATE WASHERS, W/ 1/2" HOLE. 12 REQ. @ EACH CURB TO POST CONNECTION.
- ⑭ 3/4" X 1'-10" LONG ASTM A325 BOL. 1 - 4" X 4" X 3/8" PLATE WASHER REQD. AT CURB TO SLAB CONNECTION. 1 - 4" X 4" X 3/8" PLATE WASHER REQD. AT POST TO SLAB CONNECTION. (DRILLED AND EPWOXED)
- ⑮ 7/8" X 9" LONG ASTM A307, GRADE 2, DOME HEAD BOLT AT RAIL SPLICE DETAIL.
- ⑯ 3/4" X 8" LONG ASTM A307, GRADE 2, DOME-HEAD BOLT 14 REQD. @ EACH CURB SPLICE DETAIL.
- ⑰ 4" X SHEAR PLATE 18 REQD. @ EACH CURB TO SCUPPER CONNECTION. 4 REQD. @ EACH SCUPPER TO SLAB CONNECTION AND 1 REQD. @ EACH POST TO SLAB CONNECTION. MALLEABLE IRON MEETING REQUIREMENTS OF ASTM A47, GRADE 32510.
- ⑱ 7/8" X 9" LONG DOME-HEAD DRIVE SPIKE 12 REQD. @ EACH SCUPPER END BLOCK.



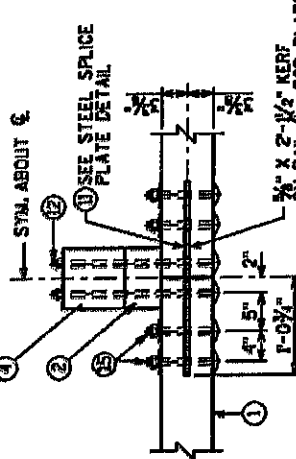
CURB SPLICE DETAIL

BILL OF TREATED LUMBER

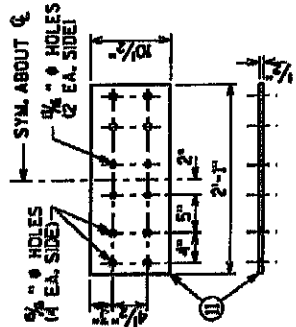
ITEM	NO. REQ'D	SIZE	LENGTH
GLULAM RAIL	2	6-3/4" X 10-1/2"	30'
RAIL SPACER BLOCK	12	8" X 4-3/4"	10-1/2'
SCUPPER BLOCK	12	8" X 12"	3'-0"
RAIL POST	12	8" X 8"	3'-8"
CURB	2	6" X 12"	30'



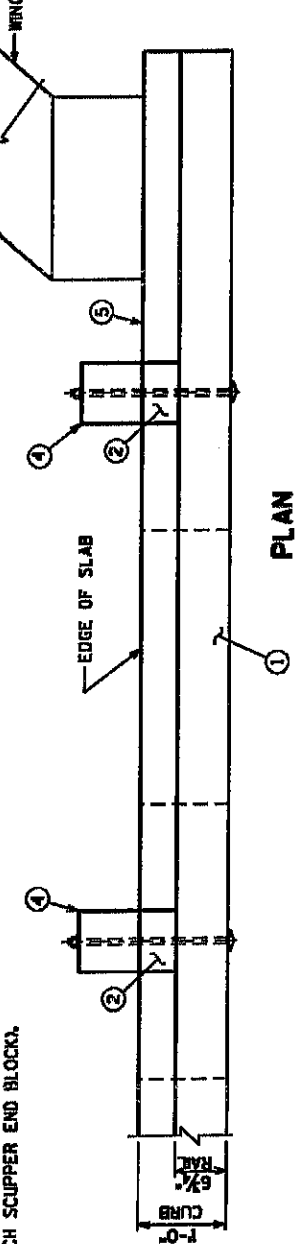
ELEVATION



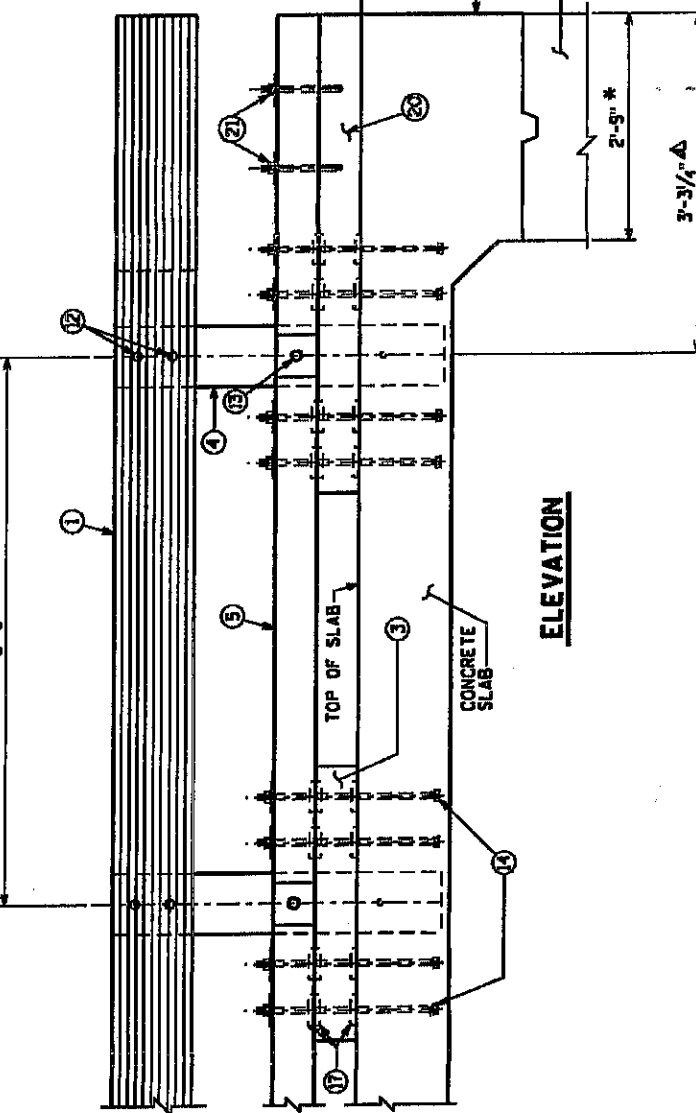
PLAN VIEW



STEEL SPLICE PLATE



PLAN



ELEVATION

GENERAL NOTES

DIMENSIONS GIVEN FOR GLUED-LAMINATED (GLULAM) TIMBER RAILS ARE ACTUAL DIMENSIONS. DIMENSIONS FOR WOOD POSTS, CURBS AND SCUPPERS ARE GIVEN AS NOMINAL DIMENSIONS. ACTUAL DIMENSIONS MAY BE A MAXIMUM OF 1/2 INCH LESS THAN THE STATED NOMINAL DIMENSIONS. DIMENSION FOR SPACER BLOCK DEPTH ARE ACTUAL DIMENSIONS.

CURB AND RAIL SPLICES SHALL BE LOCATED SO THAT CURB AND RAIL MEMBERS ARE CONTINUOUS OVER NOT LESS THAN TWO POSTS. CURB SPLICES SHALL BE LOCATED A MINIMUM OF 15 POST SPACINGS AWAY FROM RAIL SPLICES. IT IS RECOMMENDED THAT GLULAM RAILS BE CONTINUOUS OVER THE LENGTH OF THE BRIDGE.

SAWN LUMBER AND GLULAM SHALL COMPLY WITH THE REQUIREMENTS OF AASHTO M133 AND STANDARD SPECIFICATIONS. TREATED WITH WOOD PRESERVATIVES IN ACCORDANCE WITH AASHTO M133 AND STANDARD SPECIFICATIONS.

BRIDGE RAIL SHALL BE HORIZONTALLY LAMINATED GLULAM, VISUALLY GRADED WESTERN SPECIES COMBINATION NO. 2, OR VISUALLY GRADED SOUTHERN PINE COMBINATION NO. 4B. OTHER SPECIES AND GRADES OF GLULAM MAY BE USED, PROVIDED THE MINIMUM TABULATED VALUES ARE NOT LESS THAN THE FOLLOWING:

$F_{by} = 1800 \text{ LB/IN}^2$ $E = 1,800,000 \text{ LB/IN}^2$

POSTS, CURBS, SCUPPERS, TRANSITION BLOCKS AND SPACER BLOCKS MAY BE SAWN LUMBER OR GLULAM. WHEN SAWN LUMBER IS USED, MATERIAL SHALL BE VISUALLY GRADED NO. 1 SOUTHERN PINE OR VISUALLY GRADED NO. 1 DOUGLAS FIR-LARCH, GLULAM AND OTHER SPECIES AND GRADES OF SAWN LUMBER MAY BE USED, PROVIDED THE MINIMUM TABULATED VALUES ARE NO LESS THAN THE FOLLOWING:

$F_b = 1,350 \text{ LB/IN}^2$ $E = 1,500,000 \text{ LB/IN}^2$

ALL STEEL COMPONENTS AND FASTENERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232. TO THE EXTENT POSSIBLE, ALL WOOD SHALL BE CUT, DRILLED, AND COMPLETELY FABRICATED PRIOR TO PRESSURE TREATMENT WITH PRESERVATIVES. WHEN FIELD FABRICATION OF WOOD IS REQUIRED OR IF WOOD IS DAMAGED, ALL CUTS, BORE HOLES, AND DAMAGE SHALL BE IMMEDIATELY TREATED WITH WOOD PRESERVATIVE IN ACCORDANCE WITH AASHTO M133 AND STANDARD SPECIFICATIONS.

UNLESS NOTED, MALLEABLE IRON WASHERS SHALL BE PROVIDED UNDER BOLT HEADS AND UNDER NUTS THAT ARE IN CONTACT WITH WOOD. WHEN THE SIZE AND STRENGTH OF THE HEAD ARE SUFFICIENT TO DEVELOP CONNECTION STRENGTH WITHOUT WOOD CRUSHING, WASHERS MAY BE OMITTED UNDER HEADS OF DOME-HEAD TIMBER BOLTS.

TOPS OF RAIL POSTS AND TOP OF THE RAIL SPLICE PLATE KERF SHALL BE SEALED WITH ROOFING CEMENT OR OTHERWISE PROTECTED FROM DIRECT EXPOSURE TO WEATHER.

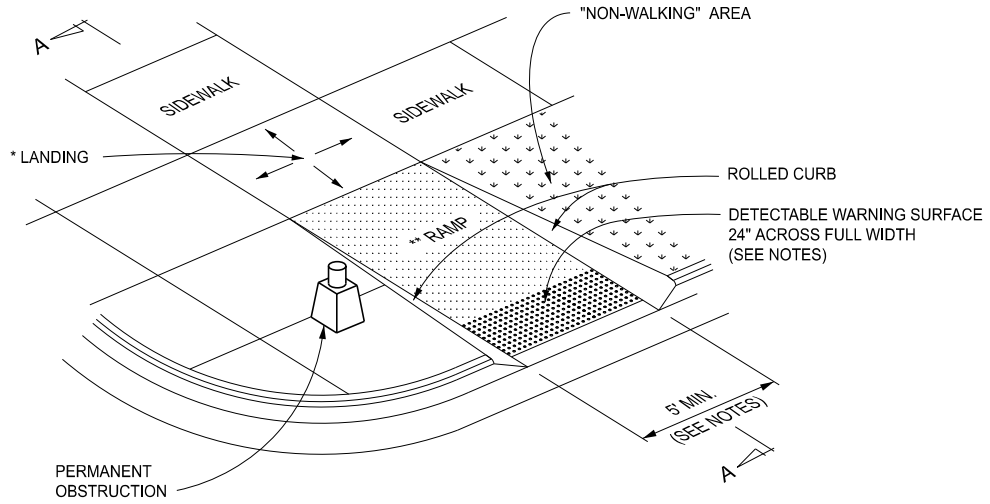
DESTROY THREADS ON ALL BOLTS WITH A CENTER PUNCH AFTER TIGHTENING. NUT EXPOSED BOLT PROJECTION OVER 1" SHALL BE CUT OFF. REPAIR END OF BOLT BY PAINTING WITH ZINC RICH PRIMER.

BID ITEM SHALL BE "WOOD RAILING" WHICH INCLUDES ALL ITEMS SHOWN.

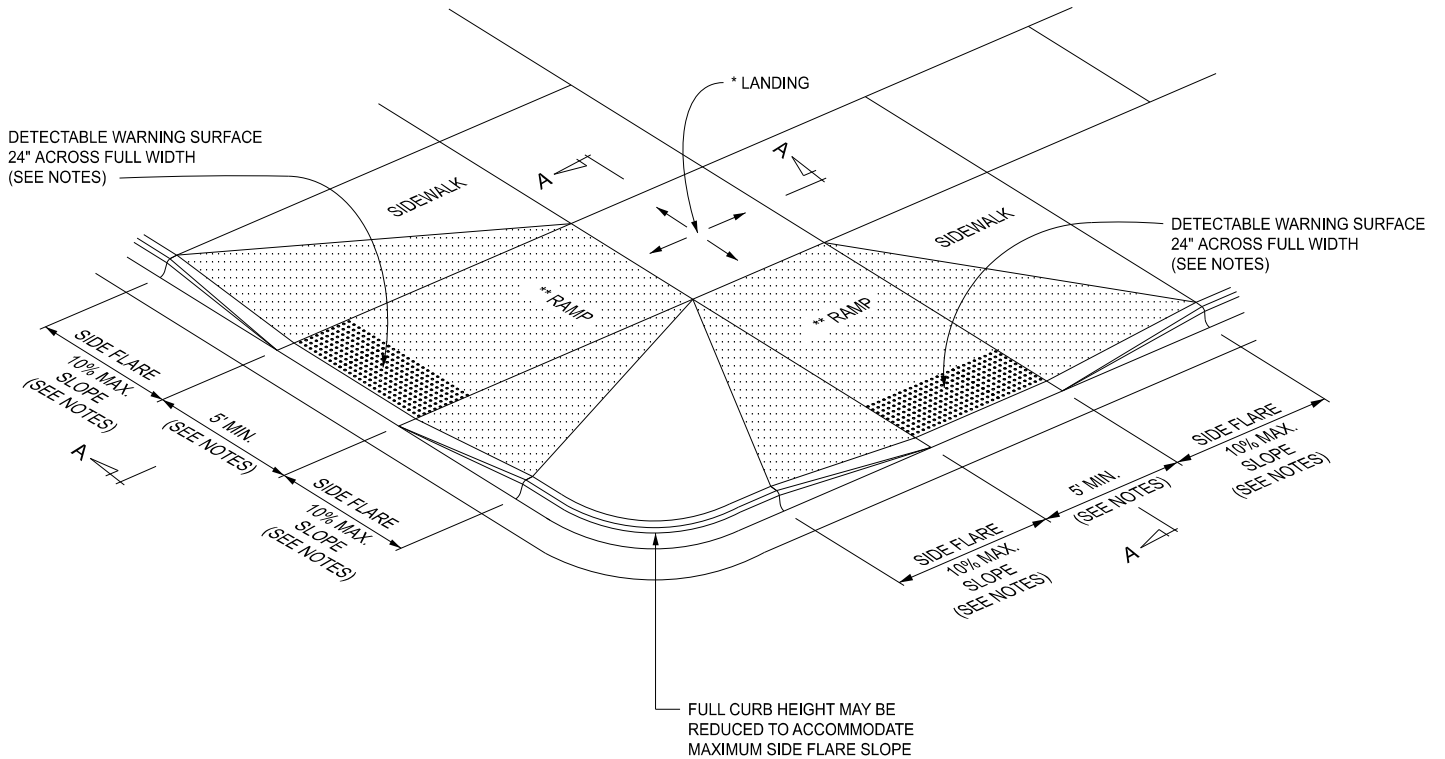
Appendix C
MDOT Standard Plans

* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE R
(ROLLED SIDES)



CURB RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
**CURB RAMP AND
DETECTABLE WARNING DETAILS**

(SPECIAL DETAIL)
FHWA APPROVAL

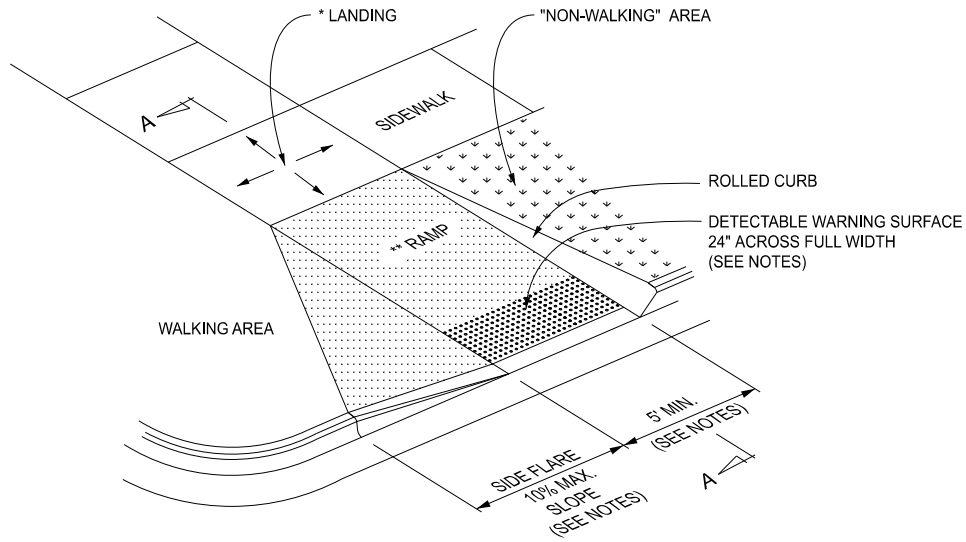
11/08/2023
PLAN DATE

R-28-K

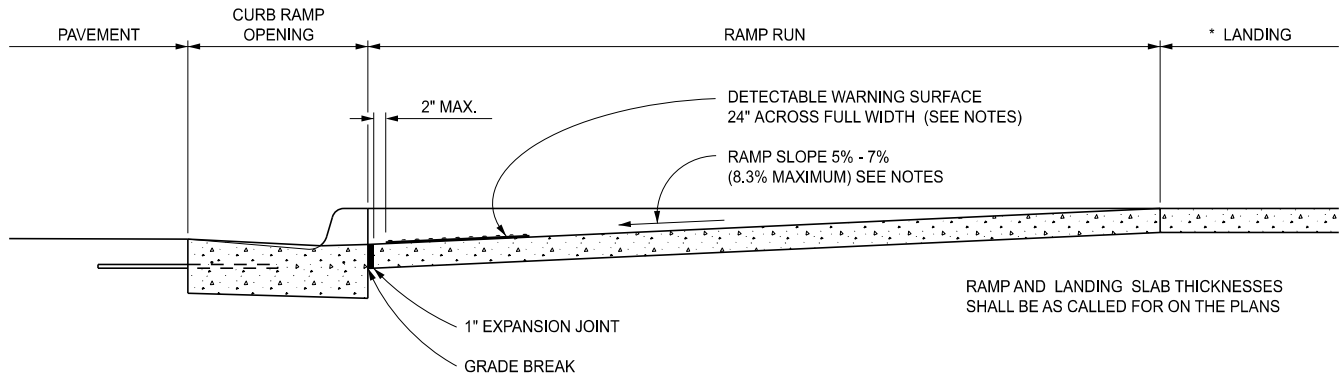
SHEET
1 OF 7

* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE RF
(ROLLED / FLARED SIDES)

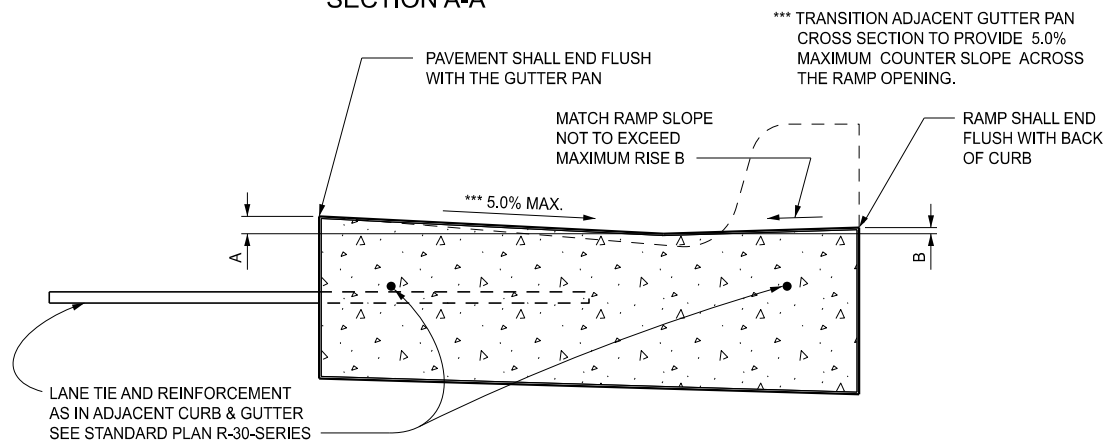


RAMP AND LANDING SLAB THICKNESSES SHALL BE AS CALLED FOR ON THE PLANS


SECTION A-A

CURB TYPE	MAXIMUM RISE (INCHES)	
	A	B
B1	¾	1
B2	¾	1
B3	¾	1
D1	¾	1
D2	¾	1
D3	¾	1
C1	½	½
C2	½	½
C3	¾	½
C4	¾	½
C5	1	½
C6	1	½
F1	½	½
F2	½	½
F3	¾	½
F4	¾	½
F5	1	½
F6	1	½

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES

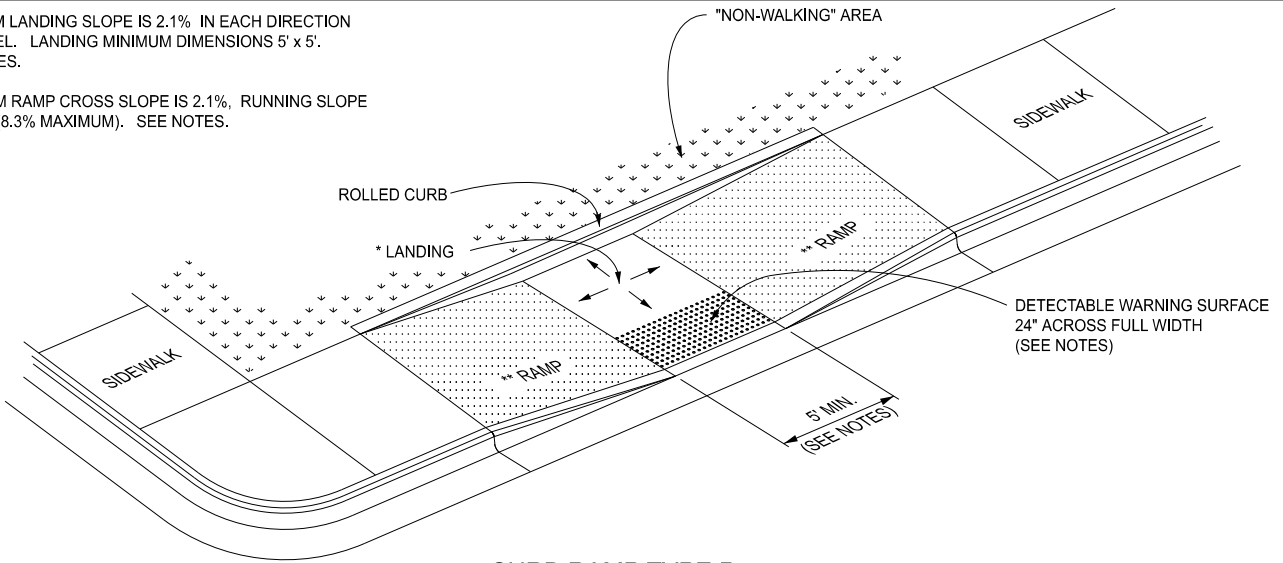


SECTION THROUGH CURB RAMP OPENING
(TYPICAL ALL RAMP TYPES)

 DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR CURB RAMP AND DETECTABLE WARNING DETAILS		R-28-K	SHEET 2 OF 7
	(SPECIAL DETAIL) FHWA APPROVAL	11/08/2023 PLAN DATE		

* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

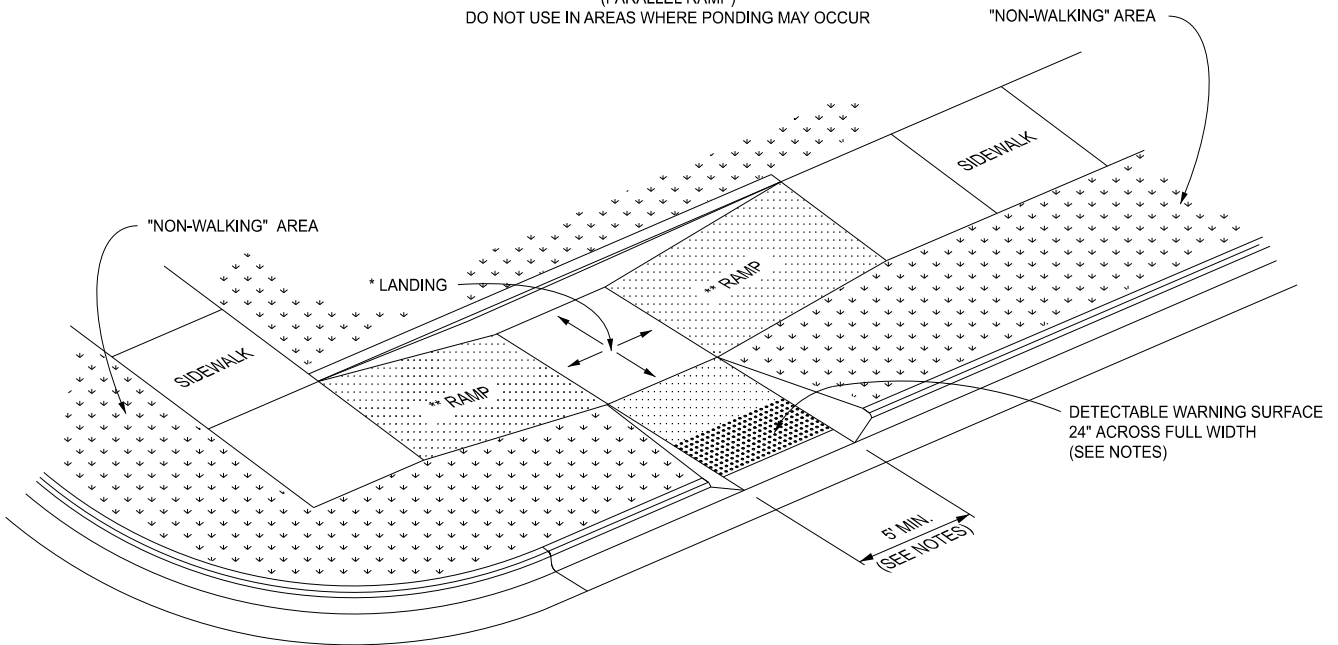
** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE P

(PARALLEL RAMP)

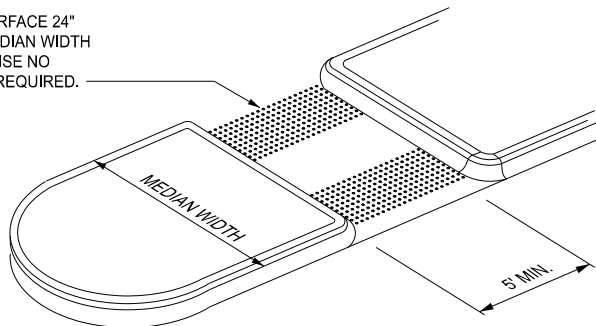
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



CURB RAMP TYPE C

(COMBINATION RAMP)

DETECTABLE WARNING SURFACE 24" ACROSS FULL WIDTH IF MEDIAN WIDTH IS AT LEAST 6'-0". OTHERWISE NO DETECTABLE WARNING IS REQUIRED.



CURB RAMP TYPE M

(MEDIAN ISLAND)



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STANDARD PLAN FOR
**CURB RAMP AND
DETECTABLE WARNING DETAILS**

(SPECIAL DETAIL)
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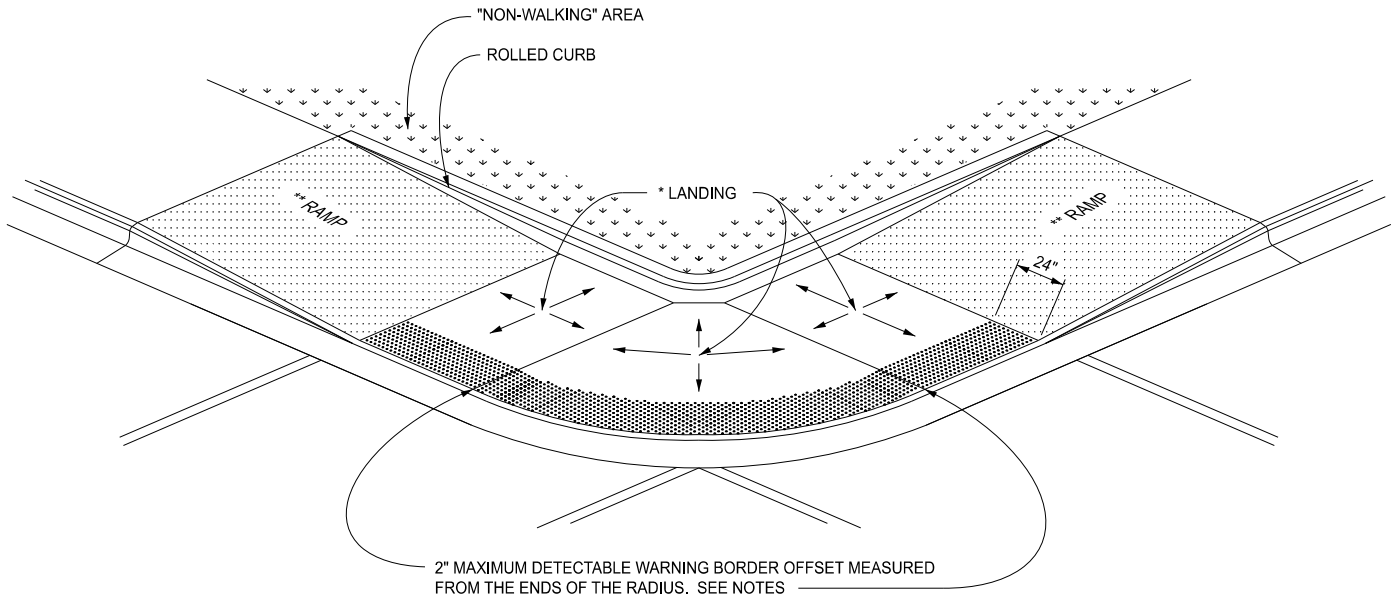
11/08/2023
PLAN DATE

R-28-K

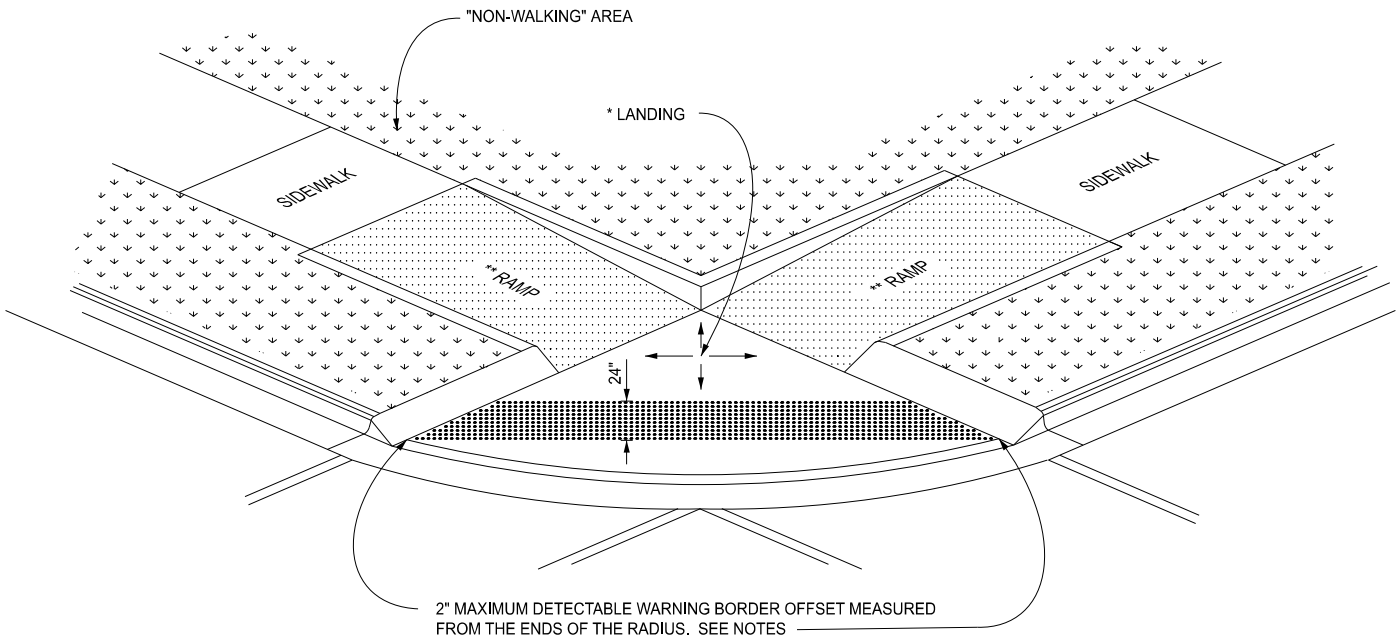
SHEET
3 OF 7

* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



(RADIAL DETECTABLE WARNING SHOWN)



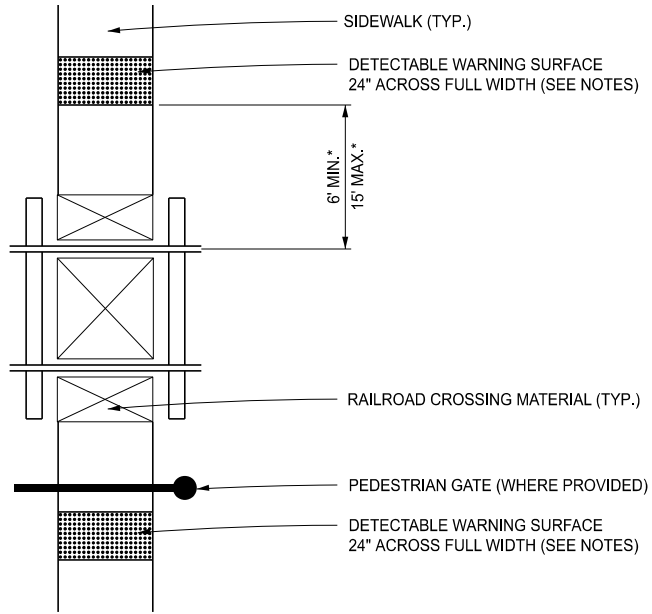
(TANGENT DETECTABLE WARNING SHOWN)

CURB RAMP TYPE D
 (DEPRESSED CORNER)

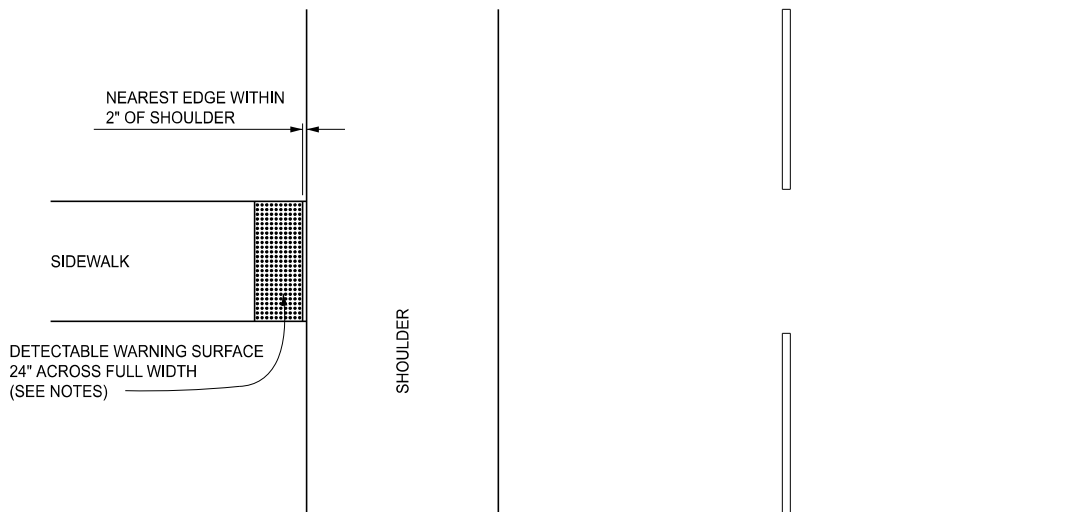
USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

 DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR CURB RAMP AND DETECTABLE WARNING DETAILS		R-28-K	SHEET 4 OF 7
	(SPECIAL DETAIL) FHWA APPROVAL	11/08/2023 PLAN DATE		

* THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



DETECTABLE WARNING AT RAILROAD CROSSING



DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY



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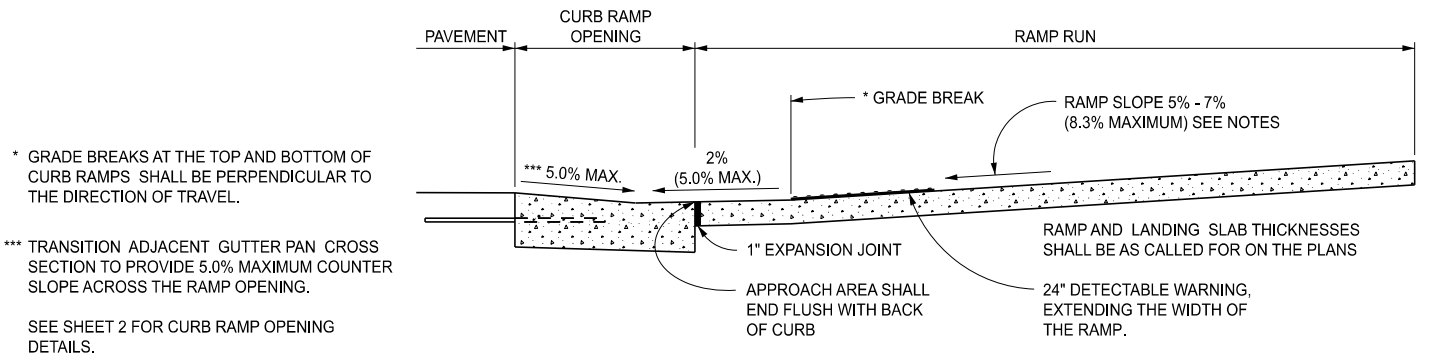
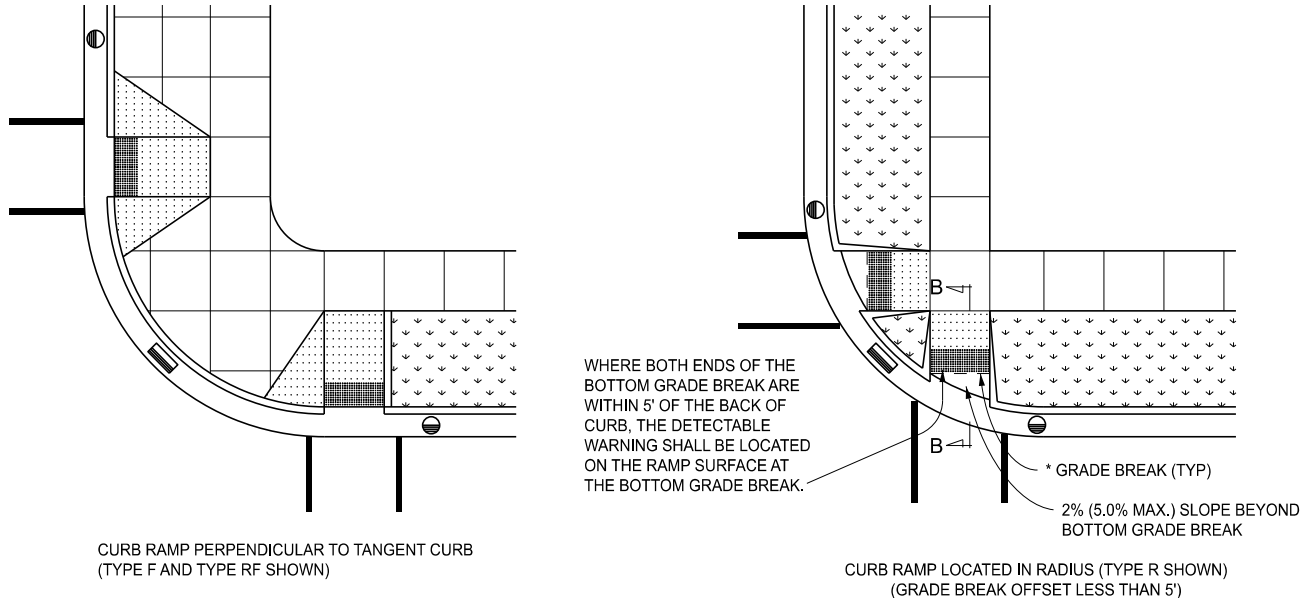
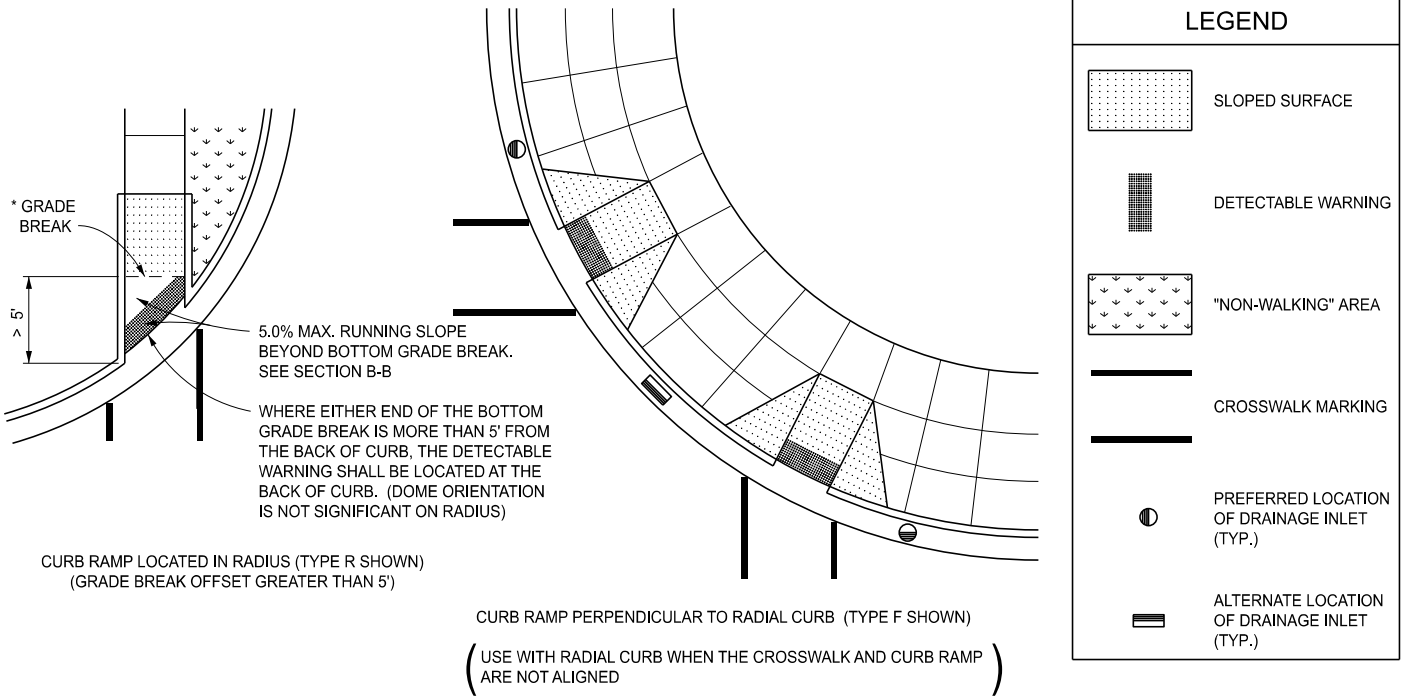
STANDARD PLAN FOR
CURB RAMP AND
DETECTABLE WARNING DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

11/08/2023
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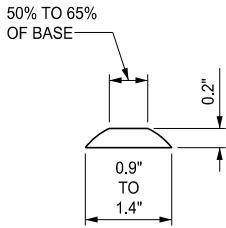
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SHEET
5 OF 7

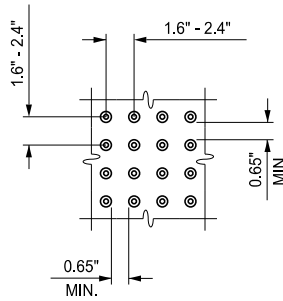


SECTION B-B
CURB RAMP ORIENTATION

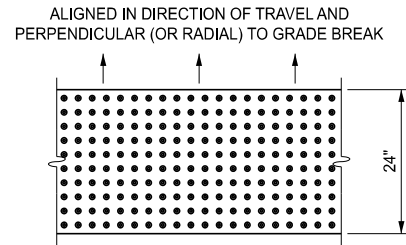
<p>DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE</p>	STANDARD PLAN FOR CURB RAMP AND DETECTABLE WARNING DETAILS		R-28-K	SHEET 6 OF 7
	(SPECIAL DETAIL) FHWA APPROVAL	11/08/2023 PLAN DATE		



DOME SECTION



DOME SPACING



DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

CURB RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT FEASIBLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

CURB RAMPS WITH A RUNNING SLOPE $\leq 5\%$ DO NOT REQUIRE A TOP LANDING. HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2.1% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.1%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN 1/2". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE CURB RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.



DEPARTMENT DIRECTOR
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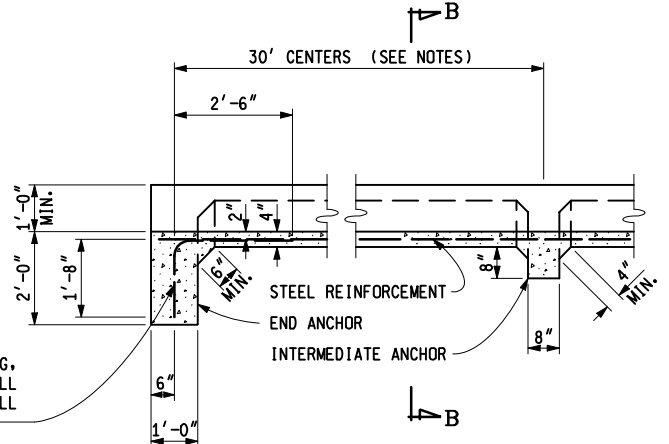
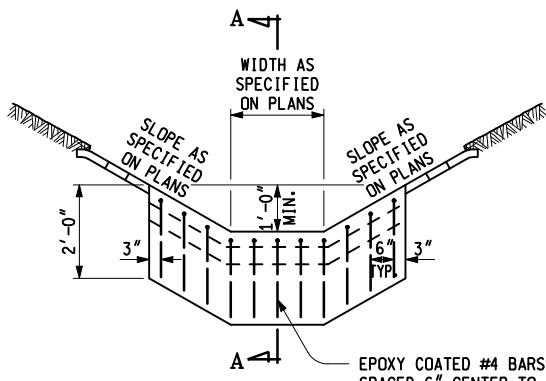
STANDARD PLAN FOR
CURB RAMP AND
DETECTABLE WARNING DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

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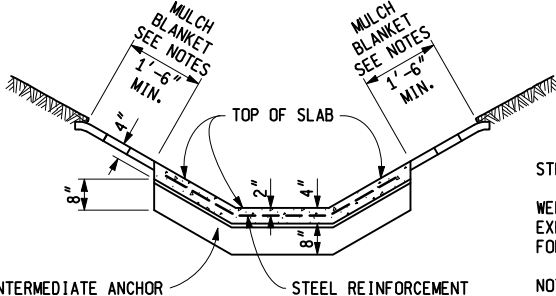
R-28-K

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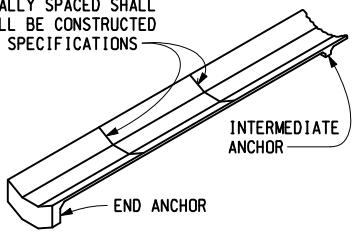
EPOXY COATED #4 BARS, 4'-2" LONG, SPACED 6" CENTER TO CENTER, SHALL BE BENT AS ILLUSTRATED AND SHALL BE USED AT END ANCHORS ONLY

SECTION A - A



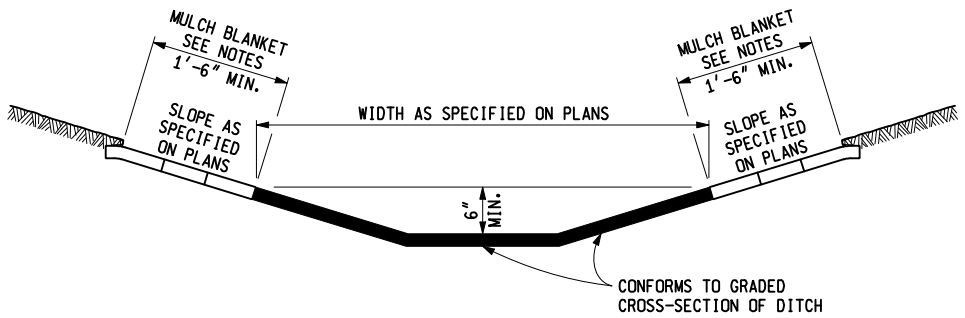
TWO PLANE OF WEAKNESS JOINTS EQUALLY SPACED SHALL BE PLACED BETWEEN ANCHORS AND SHALL BE CONSTRUCTED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS

STEEL REINFORCEMENT
 WELDED STEEL WIRE FABRIC OR AN EQUIVALENT EXPANDED METAL MESH CONFORMING TO THE FOLLOWING MINIMUM REQUIREMENTS:
 NOT LESS THAN 3.69 LBS PER SYD UNIFORM WIRE FABRIC COMPOSED OF W6 (NOMINAL DIA. 0.276") 6" ON CENTER LONGITUDINALLY AND TRANSVERSELY.



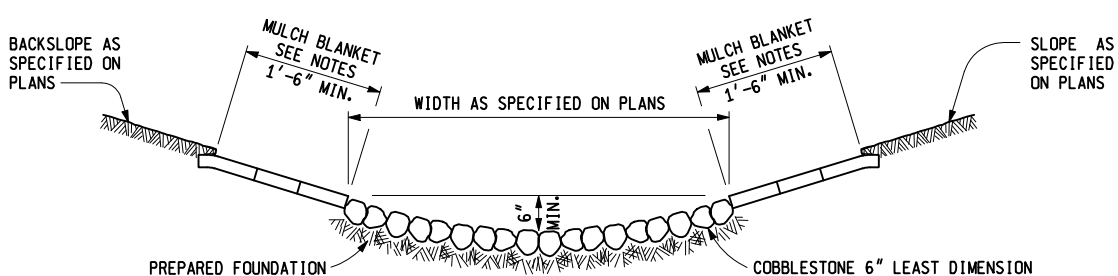
SECTION B - B

CONCRETE PAVED DITCH



THE RATE OF APPLICATION FOR THE HMA MATERIAL SHALL BE ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS

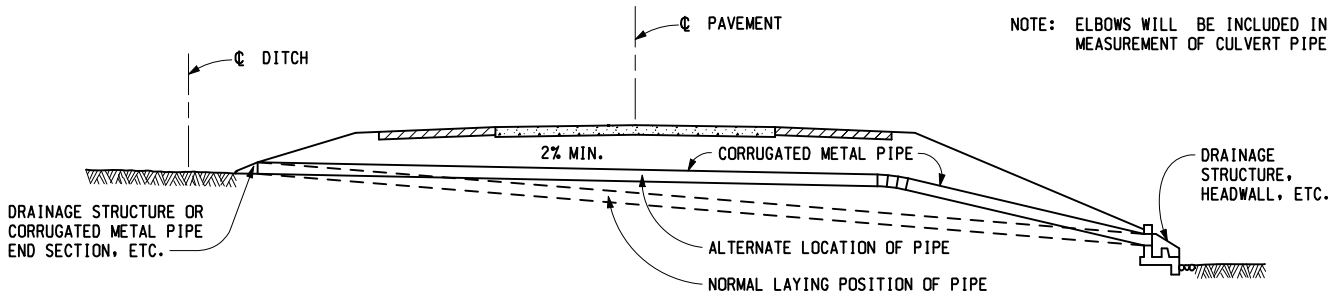
HMA PAVED DITCH



**PLAIN COBBLE DITCH
 GROUTED COBBLE DITCH**

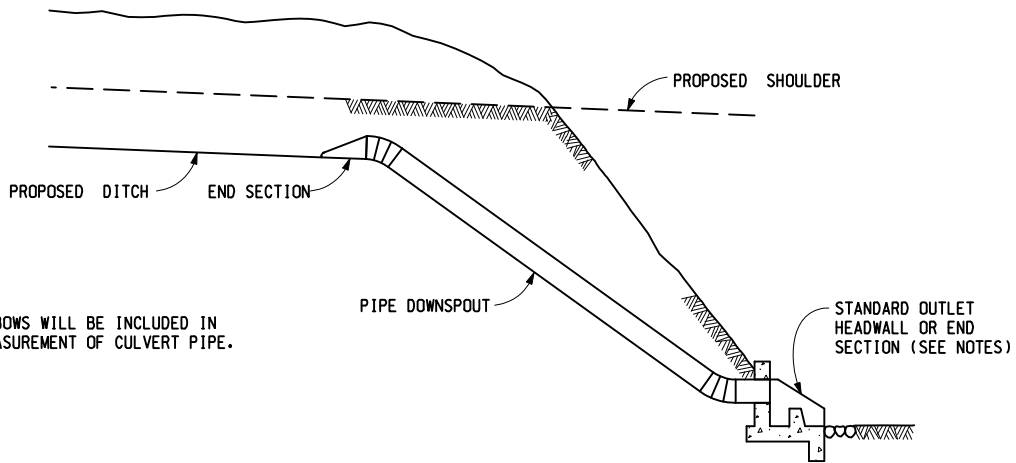
GROUTED COBBLE DITCHES SHALL BE THE SAME AS THE PLAIN COBBLE DITCHES, EXCEPT THE COBBLESTONES SHALL BE LAID IN A LAYER OF CEMENT MORTAR ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS.

	DEPARTMENT DIRECTOR Kirk T. Steudle 	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR	
	APPROVED BY: _____ ENGINEER OF DELIVERY	PAVED AND COBBLE DITCHES, & DRAINAGE TREATMENT DETAILS	
PREPARED BY DESIGN DIVISION DRAWN BY: <u>B.L.T.</u> CHECKED BY: <u>W.K.P.</u>	APPROVED BY: _____ ENGINEER OF DEVELOPMENT	9-10-2010 F.H.W.A. APPROVAL	4-6-2010 PLAN DATE
		R-46-D	SHEET 1 OF 2



NOTE: ELBOWS WILL BE INCLUDED IN MEASUREMENT OF CULVERT PIPE

DETAIL SHOWING ALTERNATE METHOD OF INSTALLING CULVERT IN HIGH FILL AREAS



NOTE: ELBOWS WILL BE INCLUDED IN MEASUREMENT OF CULVERT PIPE.

DETAIL SHOWING DOWNSPOUT CONSTRUCTION USING METAL END SECTION ON UPPER END

NOTES:

CONCRETE PAVED DITCHES SHALL BE CONSTRUCTED WITH END ANCHORS ON BOTH INLET AND OUTLET ENDS AND WITH INTERMEDIATE ANCHORS WHEN THE GRADE EXCEEDS 15%. ALL EDGES AND JOINTS OF CONCRETE PAVED DITCHES SHALL BE ROUNDED TO A RADIUS OF 1/4".

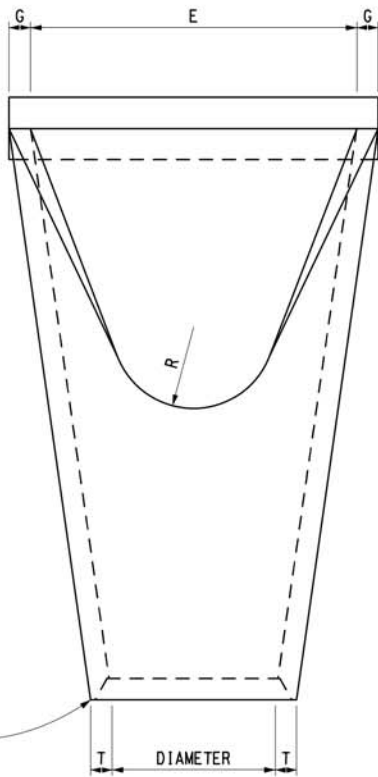
CORRUGATED METAL PIPE END SECTIONS MAY BE USED ON THE LOWER ENDS OF STEEP CULVERTS OR DOWNSPOUTS WITH LIMITED AMOUNTS OF RUNOFF OR WHERE THEY WOULD BE EXPOSED TO TRAFFIC IN THE CLEAR ZONE. CORRUGATED METAL PIPE END SECTIONS IN THESE LOCATIONS MAY REQUIRE ADDITIONAL EROSION CONTROL SUCH AS MORE RIPRAP. TOE PLATES SHOULD BE CALLED FOR WHEN END SECTIONS ARE USED ON STEEP CULVERTS OR DOWNSPOUTS.

THE CONCRETE PAVED, GROUTED COBBLE, AND PLAIN COBBLE DITCHES SHALL BE UNDERLAID WITH GEOTEXTILE. THE EDGES OF GEOTEXTILE SHALL EXTEND UP THE SIDES OF THE DITCH BOTTOM TO THE BOTTOM OF THE MULCH BLANKET AND SHALL RUN THE FULL LENGTH OF THE DITCH. WHEN OVERLAPPING OCCURS, OVERLAP MATERIAL A MINIMUM OF 2'-0".

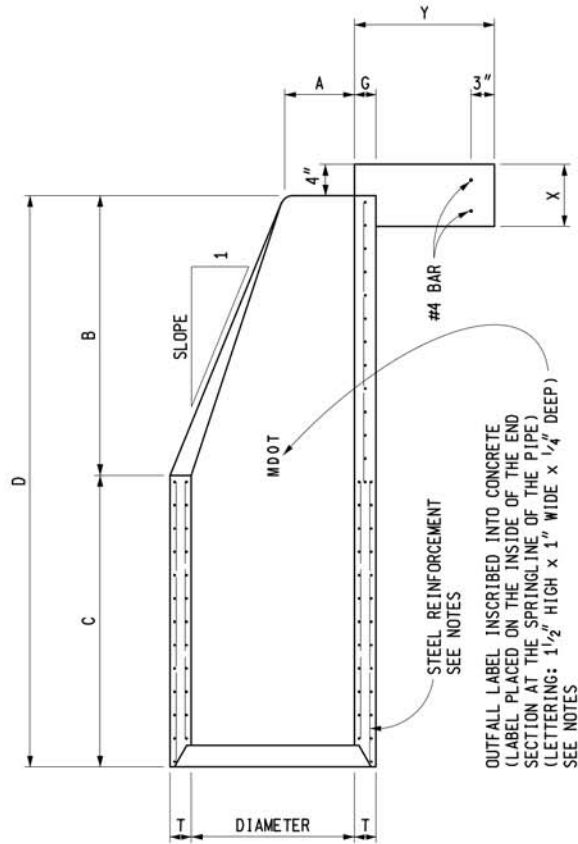
USE HIGH VELOCITY MULCH BLANKETS ON FILL SLOPES 1:2 OR STEEPER. USE STANDARD MULCH BLANKETS ON FILL SLOPES FLATTER THAN 1:2.

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR		
PAVED AND COBBLE DITCHES, & DRAINAGE TREATMENT DETAILS		
9-10-2010 F.H.W.A. APPROVAL	4-6-2010 PLAN DATE	R-46-D
		SHEET 2 OF 2

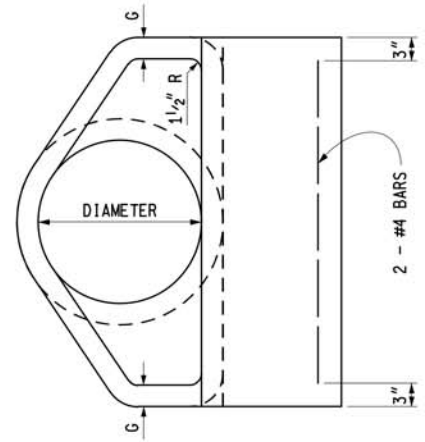
GROOVED END ON OUTLET END SECTION
 TONGUE END ON INLET END SECTION
 GROOVE OR TONGUE TO BE THE SAME AS
 ON STANDARD REINFORCED CONCRETE
 PIPE A.S.T.M. DESIGNATION C 76.



PLAN VIEW



LONGITUDINAL SECTION



END ELEVATION



PREPARED BY
 DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
 Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
 Jul 24 2019 11:25 AM

APPROVED BY: _____
 DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
 Jul 3 2019 9:08 AM

APPROVED BY: _____
 DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR

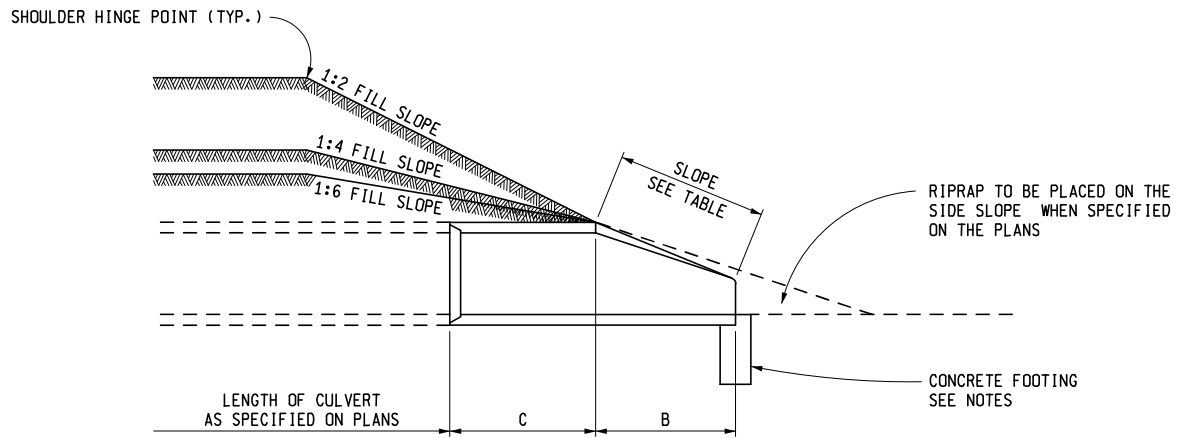
PRECAST CONCRETE END SECTION
 FOR PIPE CULVERT

5-18-2020
 F.H.W.A. APPROVAL

9-13-2018
 PLAN DATE

R-86-F

SHEET
 1 OF 2



SLOPE DETAIL

TABLE OF DIMENSIONS

PIPE DIAMETER (INCHES)	APPROX. SLOPE	T (INCHES)	A (INCHES)	B (INCHES)	C (INCHES)	D (INCHES)	E (INCHES)	G (INCHES)	R (INCHES)	X (INCHES)	Y (INCHES)
12	2.4 to 1	2	4	24	49	73	24	2	9	8	18
15	2.4 to 1	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	11	8	18
18	2.3 to 1	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	12	8	18
21	2.4 to 1	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	13	8	18
24	2.5 to 1	3	9 ¹ / ₂	43 ¹ / ₄	30 ¹ / ₂	73 ³ / ₄	48	3	14	8	18
27	2.5 to 1	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₄	24 ¹ / ₂	73 ³ / ₄	54	3 ¹ / ₄	14 ¹ / ₂	8	18
30	2.5 to 1	3 ¹ / ₂	12	54	19 ³ / ₄	73 ³ / ₄	60	3 ¹ / ₂	15	8	18
36	2.5 to 1	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	20	8	18
42	2.5 to 1	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	22	10	24
48	2.5 to 1	5	24	72	26	98	84	5	22	10	24
54	2.0 to 1	5 ¹ / ₂	27	65	33 ¹ / ₄	98 ¹ / ₄	90	5 ¹ / ₂	24	10	24
60	1.9 to 1	6	35	60	39	99	96	5	*	12	24
66	1.7 to 1	6 ¹ / ₂	30	72	27	99	102	5 ¹ / ₂	*	12	24
72	1.8 to 1	7	36	78	21	99	108	6	*	12	24
78	1.8 to 1	7 ¹ / ₂	36	90	21	111	114	6 ¹ / ₂	*	12	24
84	1.6 to 1	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	*	12	24

* AS FURNISHED BY THE MANUFACTURER

NOTES:

CONCRETE IN THESE END SECTIONS SHALL BE THE SAME GRADE AND STRENGTH AS SPECIFIED FOR REINFORCED CONCRETE PIPE, A.S.T.M. DESIGNATION C 76 CLASS II, EXCEPT AS MODIFIED BY THE STANDARD SPECIFICATION.

REINFORCEMENT IN THE "C" PORTION SHALL BE THE SAME AS SPECIFIED FOR REINFORCED CONCRETE, A.S.T.M. DESIGNATION C 76 CLASS II FOR THE SIZE OF CONNECTING PIPE.

REINFORCEMENT IN THE "B" PORTION SHALL HAVE A CROSS-SECTIONAL AREA EQUAL TO THAT OF ONE LAYER OF STEEL IN THE "C" PORTION.

THE END OF THE PIPE CULVERT SHALL BE PLACED IN THE CONCRETE END SECTION SO THAT THE FLOW LINES ARE FLUSH. THE JOINT MUST BE COMPLETELY FILLED WITH MORTAR ON THE INSIDE AND OUTSIDE AND STRUCK FLUSH. THE JOINT MUST BE WRAPPED WITH GEOTEXTILE BLANKET 36" WIDE WITH A 12" OVERLAP.

TO CHANGE THE FILL SLOPE TO THE SLOPE OF THE END SECTION USE A TRANSITION SLOPE OF APPROXIMATELY 10' IN LENGTH TO PROVIDE A PLEASING APPEARANCE.

VARIATIONS IN DIMENSIONS - THE THICKNESS OF CONCRETE, THE POSITION OF STEEL, AND THE INTERNAL DIAMETER OF THE PIPE SHALL CONFORM WITH THE VARIATIONS IN DIMENSIONS AS PROVIDED IN THE SPECIFICATIONS FOR REINFORCED CONCRETE CULVERT, STORM DRAINS, AND SEWER PIPE, A.S.T.M. DESIGNATION C 76.

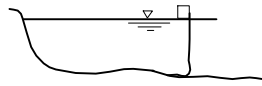
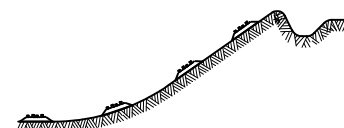
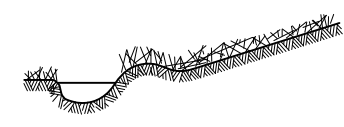


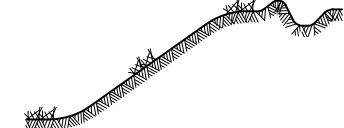
PLACE CONCRETE FOOTING AS SHOWN.

OUTFALL LABEL TO BE USED ONLY WHERE STORMWATER WILL DISCHARGE DIRECTLY TO THE WATERS OF THE STATE.

MICHIGAN DEPARTMENT OF TRANSPORTATION			
BUREAU OF DEVELOPMENT STANDARD PLAN FOR			
PRECAST CONCRETE END SECTION			
FOR PIPE CULVERT			
5-18-2020	9-13-2018	R-86-F	SHEET
F.H.W.A. APPROVAL	PLAN DATE		2 OF 2

● APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES
 (COMPREHENSIVE DETAILS ARE LOCATED IN SECTION 6 OF
 THE SOIL EROSION & SEDIMENTATION CONTROL MANUAL)

- A = SLOPES
- B = STREAMS AND WATERWAYS
- C = SURFACE DRAINAGEWAYS
- D = ENCLOSED DRAINAGE (INLET & OUTFALL CONTROL)
- E = LARGE FLAT SURFACE AREAS
- F = BORROW AND STOCKPILE AREAS
- G = DNRE PERMIT MAY BE REQUIRED

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
1	 TURBIDITY CURTAIN	A Turbidity Curtain is used when slack water area is necessary to isolate construction activities from the watercourse. The still water area contains the sediments within the construction limits.		●					
2	 GRUBBING OMITTED	Retains existing root mat which assists in stabilizing slopes. Assists in the revegetation process by providing sprout growth. Reduces sheet flow velocities preventing rilling and gulying. Discourages off-road vehicle use.		●				●	
3	 PERMANENT/TEMPORARY SEEDING	Inexpensive but effective erosion control measure to stabilize flat areas and mild slopes. Permits runoff to infiltrate soil, reducing runoff volumes. Proper preparation of the seed bed, fertilizing, mulching and watering is critical to its success.		●		●		●	●
4	 DUST CONTROL	Dust control can be accomplished by watering, and/or applying calcium chloride. The disturbed areas should be kept to a minimum. PERMANENT/TEMPORARY SEEDING (KEY 3) should be applied as soon as possible.		●				●	●
5	 SODDING	Provides immediate vegetative cover such as at spillways and ditch bottoms. Proper preparation of the topsoil, placement of the sod, and watering is critical to its success.		●				●	●
6	 VEGETATED BUFFER STRIPS	Reduces sheet flow velocities preventing rilling and gulying. Assists in the collection of sediments by filtering runoff. Assists in the establishment of a permanent vegetative cover.		●				●	



PREPARED BY
 DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
 Kirk T. Stuedle

APPROVED BY: John C. Friend
 ENGINEER OF DELIVERY

APPROVED BY: Mark A. Van Pelt
 ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

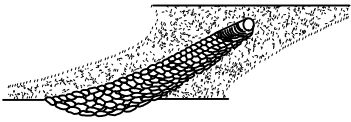
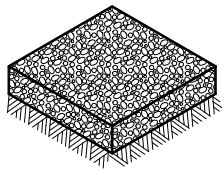
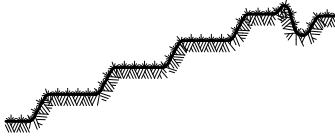

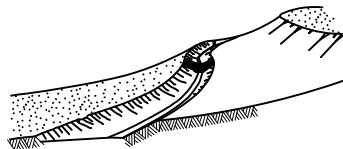
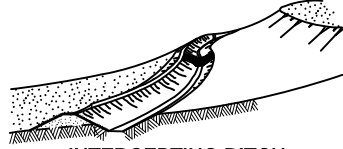

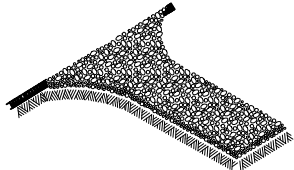
SOIL EROSION & SEDIMENTATION
 CONTROL MEASURES

9-10-2010
 F.H.W.A. APPROVAL

6-3-2010
 PLAN DATE

R-96-E

SHEET
 1 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
7	 <p>RIPRAP</p>	<p>Used where vegetation cannot be established. Very effective in protecting against high velocity flows. Should be placed over a geotextile liner.</p>	•	•	•	•			•
8	 <p>AGGREGATE COVER</p>	<p>Can be used in any area where a stable condition is needed for construction operations, equipment storage or in heavy traffic areas. Reduces potential soil erosion and fugitive dust by stabilizing raw areas.</p>	•				•	•	
9	 <p>BENCHES</p>	<p>Reduces sheet flow velocities preventing rilling and gulying. Assists in the collection and filtering of sediments. Provides access for stabilizing slopes.</p>	•					•	
10	 <p>DIVERSION DIKE</p>	<p>Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gulying. Collects and diverts runoff to properly stabilized drainage ways. Works well with INTERCEPTING DITCH (KEY 11)</p>	•				•	•	
11	 <p>INTERCEPTING DITCH</p>	<p>Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gulying. Works well with DIVERSION DIKE (KEY 10)</p>	•				•	•	
12	 <p>INTERCEPTING DITCH AND DIVERSION DIKE</p>	<p>Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gulying.</p>	•				•	•	
13	 <p>GRAVEL FILTER BERM</p>	<p>Useful in filtering flow prior to its reentry into a lake, stream or wetland. Works well with SEDIMENT TRAP (KEY 20) and TEMPORARY BYPASS CHANNEL (KEY 35). Not to be used in lieu of a CHECK DAM (KEY 37) in a ditch.</p>	•		•			•	
14	 <p>GRAVEL ACCESS APPROACH</p>	<p>Provides a stable access to roadways minimizing fugitive dust and tracking of materials onto public streets and highways.</p>						•	•

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

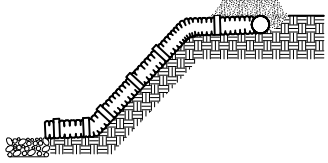

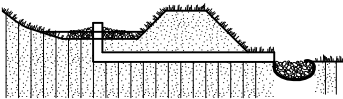
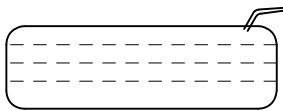

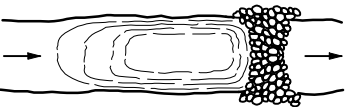
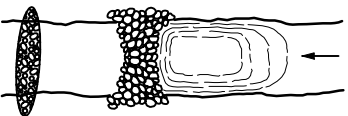
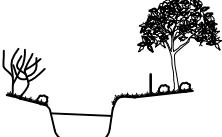
SOIL EROSION & SEDIMENTATION
 CONTROL MEASURES

9-10-2010
 F.H.W.A. APPROVAL

6-3-2010
 PLAN DATE

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SHEET
 2 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
15	 <p>SLOPE DRAIN SURFACE</p>	<p>Excellent device for carrying water down slopes without creating an erosive condition.</p> <p>Generally used in conjunction with DIVERSION DIKE (KEY 10), INTERCEPTING DITCH (KEY 11) and INTERCEPTING DITCH AND DIVERSION DIKE (KEY 12) to direct flow to a stable discharge area or SEDIMENT TRAP (KEY 20).</p>		•		•			
16	 <p>TREES, SHRUBS AND PERENNIALS</p>	<p>Trees, shrubs and perennials can provide low maintenance long term erosion protection. These plants may be particularly useful where site aesthetics are important along the roadside slopes.</p>		•				•	
17	 <p>PIPE DROP</p>	<p>Effective way to allow water to drop in elevation very rapidly without causing an erosive condition.</p> <p>Also works as a sediment collector device.</p> <p>May be left in place as a permanent erosion control device.</p>		•		•			
18	 <p>DEWATERING WITH FILTER BAG</p>	<p>It may be necessary to dewater from behind a cofferdam or construction dam to create a dry work site.</p> <p>Discharged water must be pumped to a filter bag.</p> <p>A GRAVEL FILTER BERM (KEY 13) may be placed downslope of the filter bag to provide additional filtration prior to entering any stream or wetland.</p>			•				•
19	 <p>ENERGY DISSIPATORS</p>	<p>A device to prevent the erosive force of water from eroding soils.</p> <p>Used at outlets of culverts, drainage pipes or other conduits to reduce the velocity of the water.</p> <p>Prevents structure scouring and undermining.</p>		•	•	•	•		
20	 <p>SEDIMENT TRAP</p>	<p>Used to intercept concentrated flows and prevent sediments from being transported off site or into a watercourse or wetland.</p> <p>The size of a Sediment Trap is 5 cubic yards or less.</p> <p>Works well when used with CHECK DAM (KEY 37).</p>		•		•	•		
21	 <p>SEDIMENT BASIN</p>	<p>A Sediment Basin is used to trap sediments from an upstream construction site.</p> <p>Requires periodic inspections, repairs, and maintenance.</p> <p>Where practical, sediments should be contained on site.</p> <p>A Sediment Basin should be the last choice of sediment control.</p> <p>The size of a Sediment Basin is greater than 5 cubic yards.</p>			•				•
22	 <p>VEGETATIVE BUFFER AT WATERCOURSE</p>	<p>This practice is used to maintain a vegetative buffer adjacent to a watercourse.</p> <p>When utilized with SILT FENCE (KEY 26) it will, under normal circumstances, prevent sediment from leaving the construction site.</p>		•	•	•		•	•

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

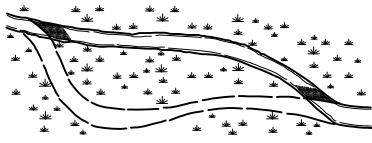
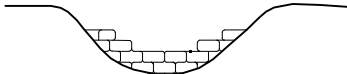
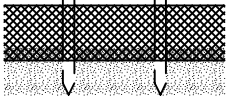
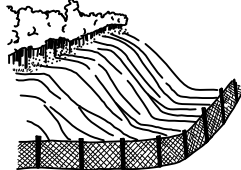

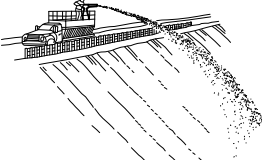
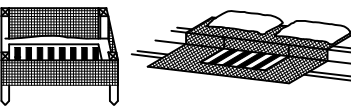
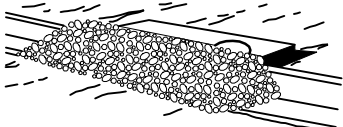
SOIL EROSION & SEDIMENTATION
CONTROL MEASURES

9-10-2010
F.H.W.A. APPROVAL

6-3-2010
PLAN DATE

R-96-E

SHEET
3 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
23	 <p>STREAM RELOCATION</p>	<p>A detail depicting the proper procedures for stream relocation. Maintains same width, depth, and flow velocity as the natural stream. Revegetate banks with PERMANENT/TEMPORARY SEEDING (KEY 3), MULCHING AND MULCH ANCHORING (KEY 28), MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS (KEY 33) and woody plants to shade the stream.</p>		•					•
24	 <p>SAND AND STONE BAGS</p>	<p>Sand and stone bags are a useful tool in the prevention of erosion. Can be used to divert water around a construction site by creating a DIVERSION DIKE (KEY 10). Works well for creating a CONSTRUCTION DAM (KEY 36) and temporary culvert end fill.</p>	•	•	•	•	•	•	•
25	 <p>SAND FENCE AND DUNE STABILIZATION</p>	<p>A Sand Fence traps blowing sand by reducing wind velocities. Can be used to prevent sand from blowing onto roads. Must be maintained until sand source is stabilized.</p>	•				•	•	
26	 <p>SILT FENCE</p>	<p>A permeable barrier erected below disturbed areas to capture sediments from sheet flow. Can be used to divert small volumes of water to stable outlets. Ineffective as a filter and should never be placed across streams or ditches where flow is concentrated.</p>	•				•	•	
27	 <p>PLASTIC SHEETS OR GEOTEXTILE COVER</p>	<p>Plastic Sheets can be used to create a liner in temporary channels. Can also be used to create a temporary cover to prevent erosion of stockpiled materials.</p>	•	•	•			•	
28	 <p>MULCHING AND MULCH ANCHORING</p>	<p>Anchored mulch provides erosion protection against rain and wind. Mulch must be used on seeded areas to promote water retention and growth. Should be inspected after every rainstorm and repaired as necessary until vegetation is well established.</p>	•		•		•	•	
29	 <p>INLET PROTECTION FABRIC DROP</p>	<p>Provides settling and filtering of silt laden water prior to its entry into the drainage system. Can be used in median and side ditches where vegetation will be disturbed. Allows for early use of drainage systems prior to project completion.</p>			•		•		
30	 <p>INLET PROTECTION GEOTEXTILE AND STONE</p>	<p>Provides settling and filtering of silt laden water prior to its entry into the drainage system. Should be used in paved areas where drainage structures are existing or proposed. Allows for early use of drainage systems prior to project completion.</p>			•		•		

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

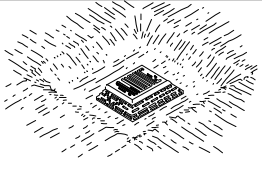
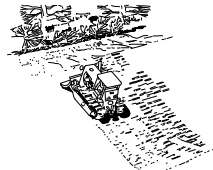
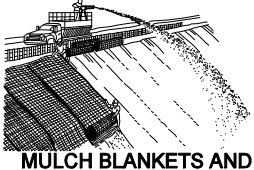
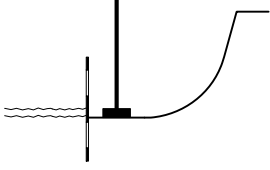

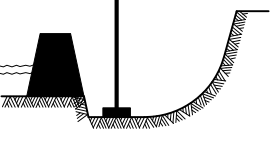
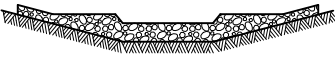
**SOIL EROSION & SEDIMENTATION
CONTROL MEASURES**

9-10-2010
F.H.W.A. APPROVAL

6-3-2010
PLAN DATE

R-96-E

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KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
31	 INLET PROTECTION SEDIMENT TRAP	An Inlet Protection Sediment Trap is a temporary device that can be used in areas where medium flows are anticipated. Effective in trapping small quantities of sediments prior to water entering the drainage system. Can be used in areas such as median and side ditches.			•		•		
32	 SLOPE ROUGHENING AND SCARIFICATION	A simple and economical way to reduce soil erosion by wind and water. Can be accomplished by harrowing with a disk, back blading, or tracking with a dozer perpendicular to the slope.	•				•	•	
33	 MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS	Mulch blankets provide an immediate and effective cover over raw erodible slopes affording excellent protection against rain and wind erosion. High velocity mulch blankets work well for stabilizing the bottom of ditches in waterways.	•		•		•	•	
34	 COFFERDAM	Used to create a dry construction area and protect the stream from raw erodible areas. Must be pumped dry or dewatered according to DEWATERING WITH FILTER BAG (KEY 18).		•					•
35	 TEMPORARY BYPASS CHANNEL	Utilized when a dry construction area is needed. Isolates stream flows from raw erodible areas minimizing erosion and subsequent siltation. Can incorporate SEDIMENT BASIN (KEY 21), CHECK DAM (KEY 37), and GRAVEL FILTER BERM (KEY 13) to remove sediments from water. Construction sequence of events may be necessary.		•					•
36	 CONSTRUCTION DAM	Used to create a dry or slack water area for construction. Isolates the stream from raw erodible areas. Can be created out of any non-erodible materials such as SAND AND STONE BAGS (KEY 24), a gravel dike with clay core or plastic liner, steel plates or plywood.		•					•
37	 CHECK DAM	Can be constructed across ditches or any area of concentrated flow. Protects vegetation in early stages of growth. A Check Dam is intended to reduce water velocities and capture sediment. A Check Dam is not a filtering device.	•		•			•	

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NOTES:

THIS STANDARD PLAN WILL SERVE AS A KEY IN THE SELECTION OF THE APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL DETAILS. THIS PLAN ALSO PROVIDES THE KEY TO THE NUMBERED EROSION CONTROL ITEMS SPECIFIED ON THE CONSTRUCTION PLANS. REFER TO THE MDOT SOIL EROSION & SEDIMENTATION CONTROL MANUAL, SECTION 6 FOR SPECIFIC DETAILS, CONTRACT ITEMS (PAY ITEMS), AND PAY UNITS.

COLLECTED SILT AND SEDIMENT SHALL BE REMOVED PERIODICALLY TO MAINTAIN THE EFFECTIVENESS OF THE SEDIMENT TRAP, SEDIMENT BASIN, AND SILT FENCE. AGGREGATES PLACED IN STREAMS SHOULD CONTAIN A MINIMUM OF FINES.

TEMPORARY EROSION AND SEDIMENTATION CONTROL PROVISIONS SHALL BE COORDINATED WITH THE PERMANENT CONTROL MEASURES TO ASSURE EFFECTIVE CONTROL OF SEDIMENTS DURING CONSTRUCTION OF THE PROJECT.

ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER VEGETATION ESTABLISHMENT OR AT THE DISCRETION OF THE ENGINEER. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE SILTATION IN NEARBY DRAINAGE COURSES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

**SOIL EROSION & SEDIMENTATION
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5' RIGHT (IN DIRECTION OF TRAFFIC)
3' LEFT (ON ONE-WAY ROADWAYS)

GUARDRAIL SHOULD BE PLACED WHEN
FILL SLOPE IS STEEPER THAN 1:3

SHOULDER

PAVEMENT SURFACE

PLAN GRADE

OR AS SPECIFIED ON PLANS

1:6

1:2

ORIGINAL GROUND

ORIGINAL GROUND

ORIGINAL GROUND

ORIGINAL GROUND

ROUND BOTTOM DITCH WIDTH, ELEVATION AND
BACKSLOPE AS SPECIFIED ON PLANS.
(TO APPLY AT TOE OF FILL SLOPES WHERE
CALLED FOR ON PLANS)

WIDTH

WIDTH

WIDTH

WIDTH

FILL SECTION

SHOULDER

PAVEMENT SURFACE

PLAN GRADE

OR AS SPECIFIED ON PLANS

1:6

PLAN GRADE ELEVATION

ORIGINAL GROUND

ORIGINAL GROUND

ORIGINAL GROUND

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

NOTE:

ADDITIONAL BORROW MAY BE OBTAINED BY
MOVING THE DITCH OUT OR BY INCREASING THE
DITCH WIDTH AS DIRECTED BY THE ENGINEER

ROUND BOTTOM DITCH WIDTH,
ELEVATION AND BACKSLOPE
AS SPECIFIED ON PLANS.

CUT - OFF OR SIDE BORROW SECTION

SHOULDER

PAVEMENT SURFACE

PLAN GRADE

OR AS SPECIFIED ON PLANS

1:6

PLAN GRADE ELEVATION

ORIGINAL GROUND

ORIGINAL GROUND

ORIGINAL GROUND

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

SUBGRADE

NOTE:

SPECIAL SECTIONS ARE NECESSARY ON
SUPERELEVATED CURVES AND WHERE DEEP
SUBBASE IS USED.

SLOPE SHALL BE MADE FLAT
ENOUGH TO PREVENT SLOUGHING
OF ROCK FACE INTO DITCH.

IN ROCK CUT SECTIONS, THE NEED FOR
A CONCRETE BARRIER OR OTHER TYPE OF
PROTECTION SHOULD BE EVALUATED.

ROCK CUT SECTION

NOTE:

ROCK EXCAVATION WILL BE PAID FOR
TO THE NEAT LINE SHOWN.



David D. Orr
ENGINEER OF CONSTRUCTION & TECHNOLOGY

Paul A. Valletta
ENGINEER OF DESIGN SUPPORT AREA
DEPARTMENT DIRECTOR
Gloria J. Jeff

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GRADING CROSS-SECTIONS

PREPARED BY
DESIGN
SUPPORT AREA

Calvin Roberts
ENGINEER OF MAINTENANCE

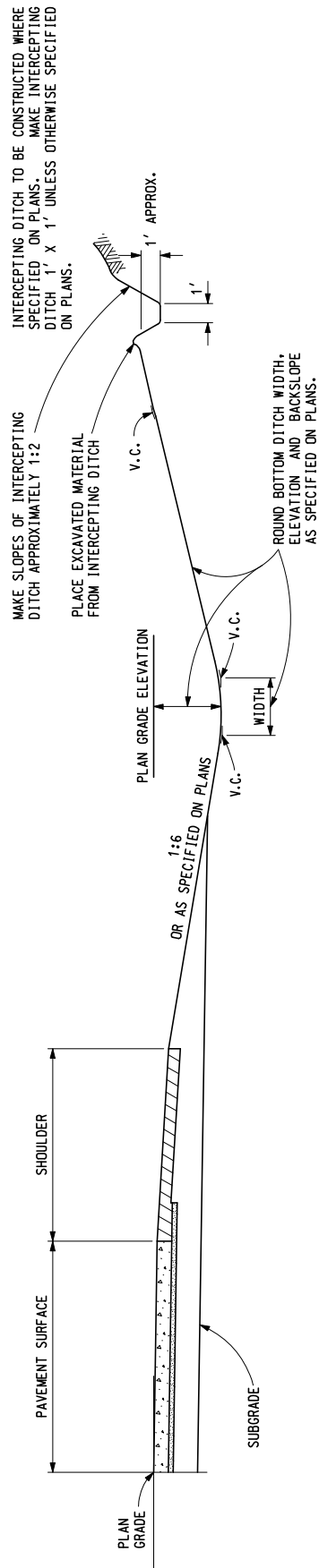
James D. Culp
ENGINEER OF TRAFFIC AND SAFETY

11-14-2003
F.H.W.A. APPROVAL

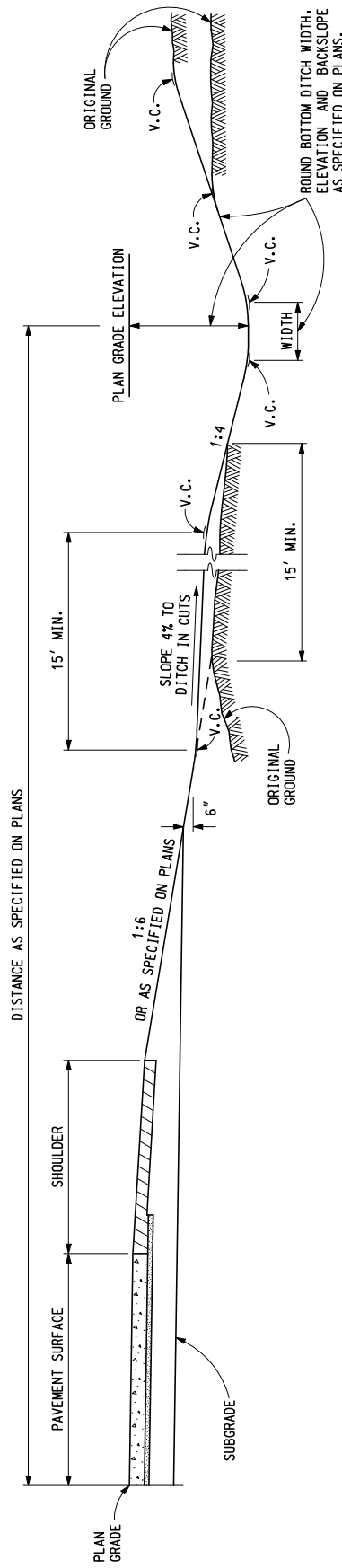
6-19-2002
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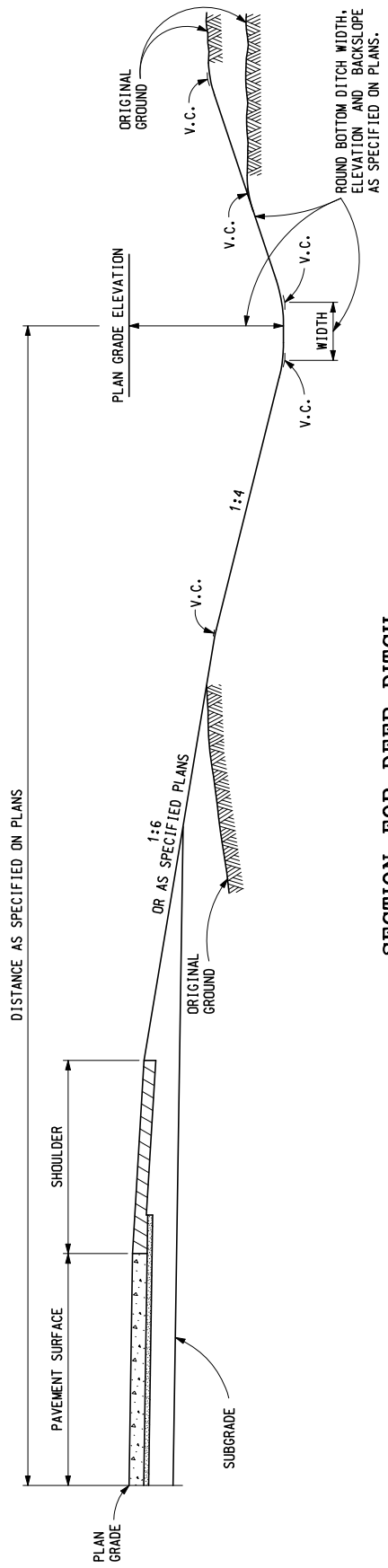
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ROUND BOTTOM DITCH SECTION



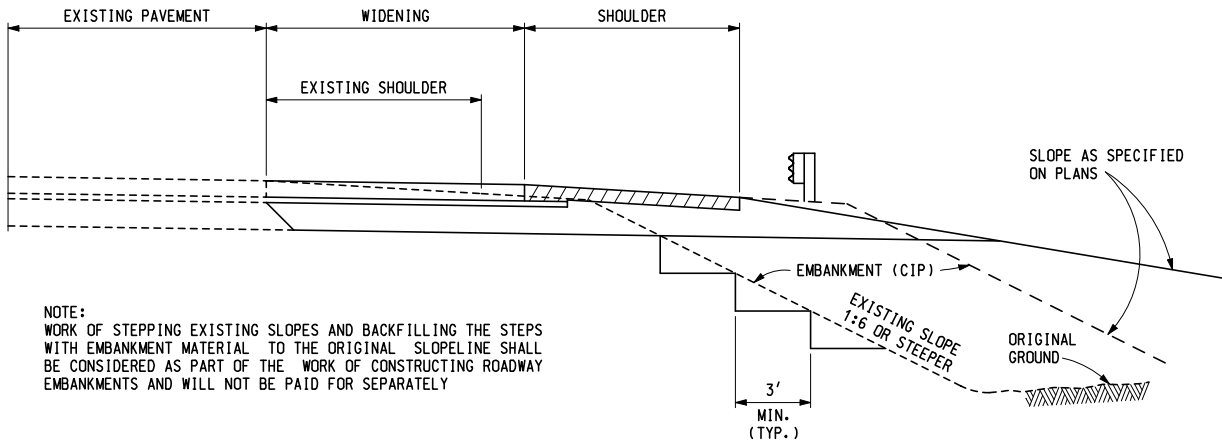
BERM OR SWAMP DITCH SECTION



SECTION FOR DEEP DITCH

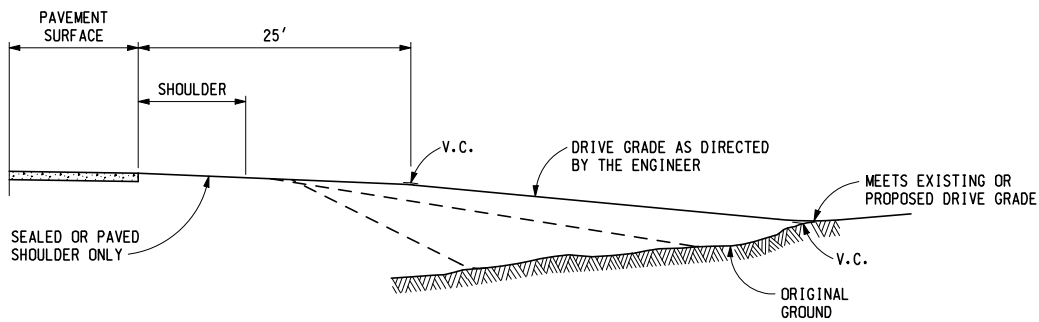
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GRADING CROSS-SECTIONS

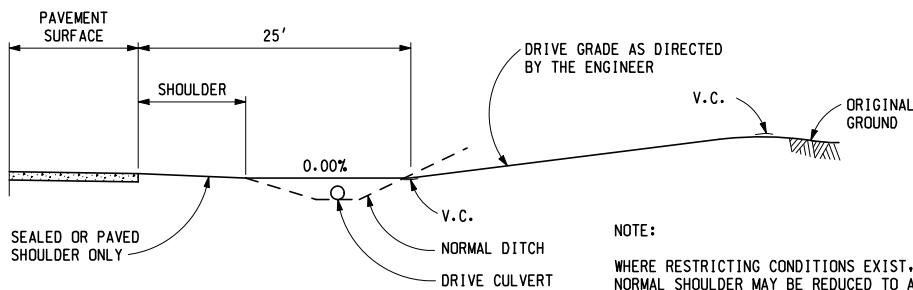


NOTE:
 WORK OF STEPPING EXISTING SLOPES AND BACKFILLING THE STEPS WITH EMBANKMENT MATERIAL TO THE ORIGINAL SLOPELINE SHALL BE CONSIDERED AS PART OF THE WORK OF CONSTRUCTING ROADWAY EMBANKMENTS AND WILL NOT BE PAID FOR SEPARATELY

ADDING EMBANKMENT TO EXISTING SLOPES



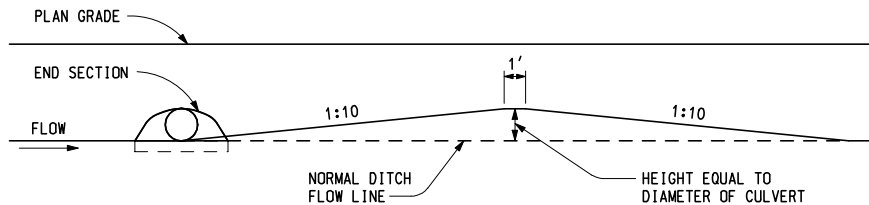
GRADING OF DRIVES IN FILL SECTIONS



NOTE:

WHERE RESTRICTING CONDITIONS EXIST, THE FLAT AREA DISTANCE OUTSIDE THE NORMAL SHOULDER MAY BE REDUCED TO A MINIMUM OF 4' VERTICAL CURVE. IN ALL CASES THE NORMAL FULL WIDTH SHOULDER SHALL BE MAINTAINED AND THE FLAT AREA SHOULD BE MAXIMIZED.

GRADING OF DRIVES IN CUT SECTIONS

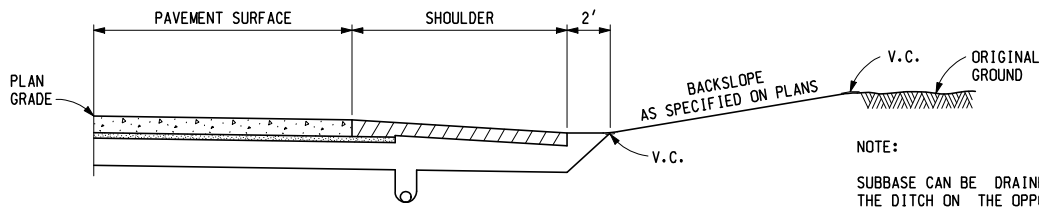


DIKE IN DITCH SECTION

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GRADING CROSS-SECTIONS

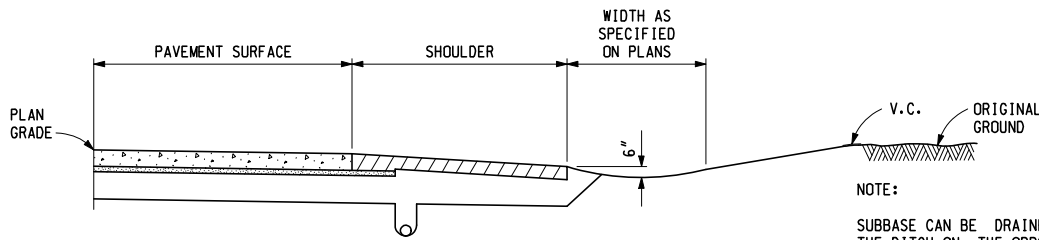
11-14-2003 F.H.W.A. APPROVAL	6-19-2002 PLAN DATE	R-105-D	SHEET 3 OF 6
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NO DITCH SECTION

NOTE:

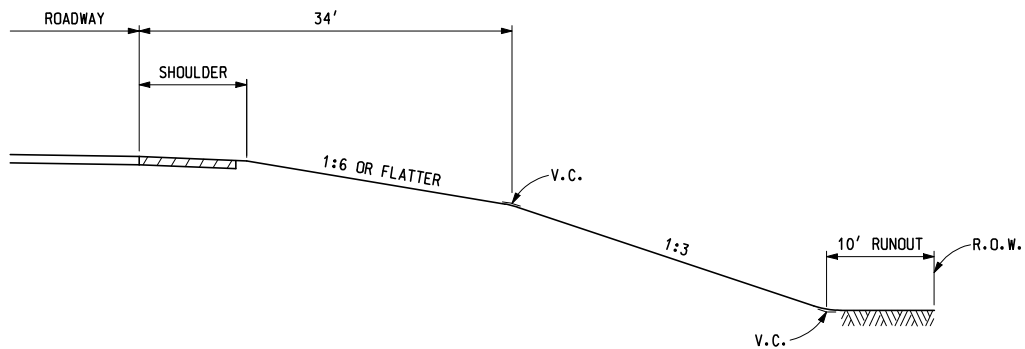
SUBBASE CAN BE DRAINED WITH UNDER DRAIN OR ONE-WAY TO THE DITCH ON THE OPPOSITE SIDE. SHORT SECTIONS CAN BE DRAINED LONGITUDINALLY. SEE STANDARD PLAN R-80-SERIES.



VALLEY DITCH SECTION

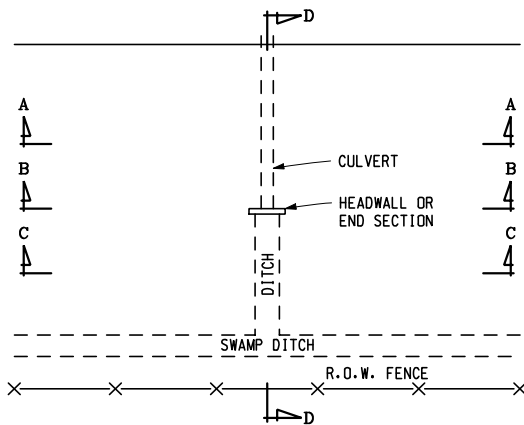
NOTE:

SUBBASE CAN BE DRAINED WITH UNDER DRAIN OR ONE-WAY TO THE DITCH ON THE OPPOSITE SIDE. SHORT SECTIONS CAN BE DRAINED LONGITUDINALLY. SEE STANDARD PLAN R-80-SERIES.

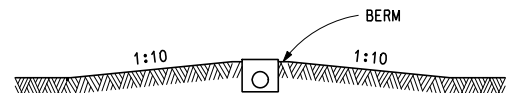


BARN ROOF FILL SECTION

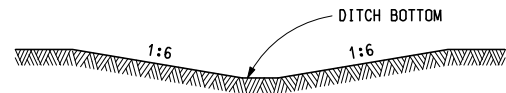
(TO APPLY ON TANGENT SECTIONS ONLY)



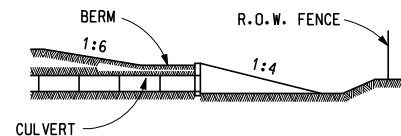
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

OUTLET CULVERT IN BERM OR SWAMP DITCH SECTION

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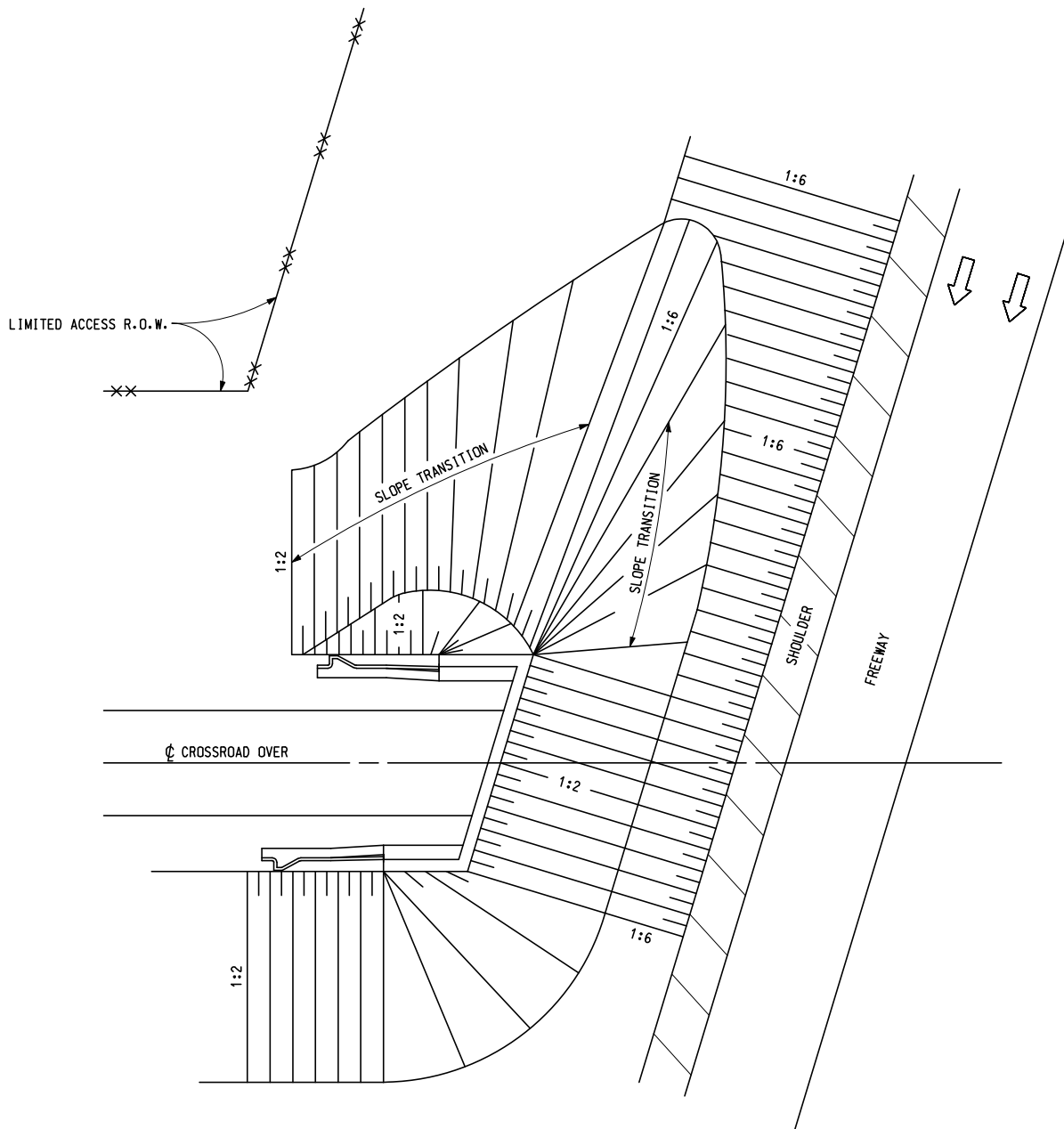
GRADING CROSS-SECTIONS

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NOTE:

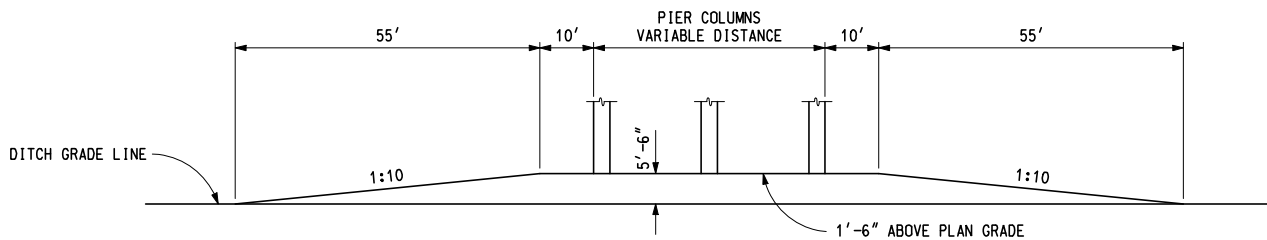
THE 1:6 SLOPE FACING FREEWAY TRAFFIC SHOULD BE USED ON ALL NEW CONSTRUCTION UNLESS THE DISTANCE FROM THE EDGE OF THE NEAREST FREEWAY THROUGH LANE TO THE TOE OF THE 1:2 SLOPE UNDER THE BRIDGE EXCEEDS THE CLEAR ZONE.

GRADING DETAILS FOR FLATTENING LONG SLOPE AT BRIDGE APPROACH FILLS FACING ONCOMING TRAFFIC

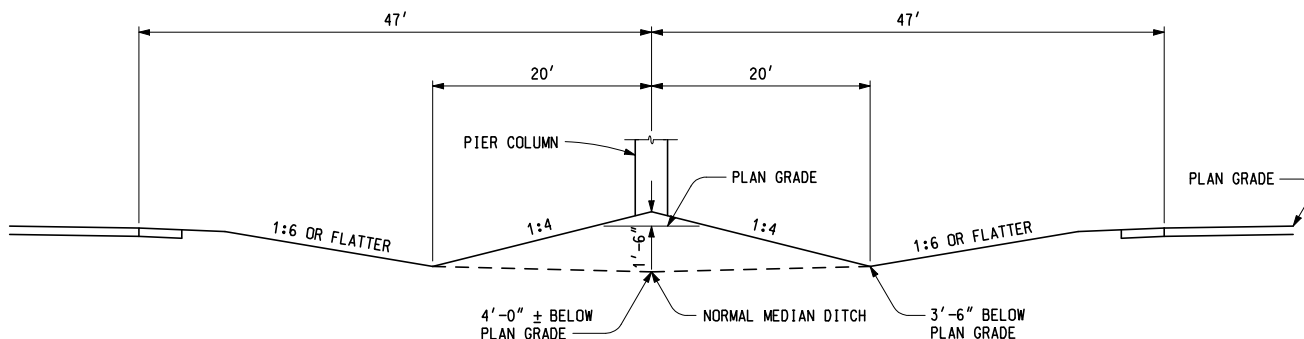
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LONGITUDINAL SECTION ALONG MEDIAN



TRANSVERSE SECTION AT STRUCTURES

TYPICAL GRADING DETAILS AROUND PIERS FOR MEDIANS 94' OR WIDER

NOTES:

THIS STANDARD APPLIES PRINCIPALLY FOR VARIOUS DITCH TYPES AND FOR THE ROUNDING OF SLOPES. THE SUBGRADE WILL BE SPECIFIED ON THE PLANS. SLOPES OTHER THAN THOSE SPECIFIED ON THIS PLAN MAY BE USED WHEN THEY ARE SPECIFIED ON THE PROJECT PLANS. IN THE EVENT OF A DISCREPANCY BETWEEN THIS PLAN AND THE PROJECT PLANS, THE PROJECT PLANS WILL GOVERN.

SEE CURRENT STANDARD PLAN R-107-SERIES FOR SUPERELEVATED SECTIONS.

DITCHES SHOULD ALWAYS BE DEEP ENOUGH TO GRAVITY DRAIN THE SUBBASE, WHERE SUBBASE IS USED.

THE SUBGRADE SHOULD BE SLOPED TO DRAIN TO THE OUTSIDE DITCH IF THE MEDIAN ON DUAL ROADWAYS IS OF INSUFFICIENT WIDTH TO ALLOW DITCHES DEEP ENOUGH TO DRAIN THE SUBBASE.

THE TOP OF BACKSLOPES AND THE BOTTOM OF FILL SLOPES SHALL BE ROUNDED WITH VERTICAL CURVES AS FOLLOWS, PROVIDED TREES OR OTHER RESTRICTIONS DO NOT INTERFERE:

1. USE 4' VERTICAL CURVE ON CUTS OR FILLS LESS THAN 4'.
2. USE 8' TO A MAXIMUM 16' VERTICAL CURVE ON CUTS OR FILLS 4' TO 16'.
3. USE A MAXIMUM 16' VERTICAL CURVE ON CUTS OR FILLS GREATER THAN 16'.

ALL TRANSITIONS IN LENGTH OF VERTICAL CURVES SHALL BE GRADUAL AND GRADED TO PRESENT A UNIFORM AND ATTRACTIVE APPEARANCE.

WHEN 1:6 OR FLATTER SLOPES CANNOT BE CONSTRUCTED WITHIN THE EXISTING R.O.W., THE BARN ROOF FILL SECTION MAY BE USED TO ELIMINATE THE NEED FOR ADDITIONAL R.O.W.. THEY WILL BE USED ONLY WHERE SPECIFIED ON THE PLANS.

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