This document contains the Plans and Specifications for

QUESTCDN Project No. 10073221
Sweet Briar School Bridge Replacement
Structure 30-145-11.0
Morton County, North Dakota
CR25-00-067

The Specifications are contained in pages 3-64 and set up to print two-sided (duplex) on 8½" x 11" paper.

The Plans are contained on pages 65-120 and set up to print single-sided on 11" x 17" paper.

If your printer has the option to choose the paper source by PDF page size you may select it and the complete document will print single-sided to the correct sizes all at once. The page scaling option should be set to "none" or "actual size".

Up to date planholder lists can be found at www.questcdn.com.

SUBMITTED BID MUST CONTAIN THE FOLLOWING INFORMATION:

All bids must be placed in a sealed envelope upon the outside of which there is disclosed the following information:

a) The work covered by the bid.
b) A proposed construction schedule. Construction may begin as early as May 26, 2026 and the project shall be substantially complete by August 15, 2026.
c) The name of the person, firm or corporation submitting the bid.
d) The license number and class of license of the bidder.
e) A copy of the contractor's license or certificate of renewal thereof issued shall be enclosed in the required bid bond envelope.
f) Acknowledgement of each Addendum.
g) Bid Bond in outside envelope. (Signed by Principle or authorized person with copy of authorization.)

All bids must contain a separate bid bond envelope attached to the actual bid envelope. The bid bond envelope shall contain the following information:

a) The bid bond for the project
b) The contractor's license

** The above listed items must be in the bid bond envelope located outside the actual bid envelope. If any of these items are not located in the bid bond envelope, the actual bid will not be opened.

The actual Bid envelope must contain:

a) Bidder's Proposal made on a form prepared by the Engineer

This form is being provided for contractor convenience and is not meant to supersede the plans and specifications. Bidding requirements listed in the project specifications prevail over this form.

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PLANS AND SPECIFICATIONS
FOR

SWEET BRIAR SCHOOL BRIDGE REPLACEMENT
STRUCTURE 30-145-11.0

MORTON COUNTY, NORTH DAKOTA
CR25-00-067

Prepared for
Morton County Highway Department
2916 37th Street NW
Mandan, ND 58554

February 2026

Prepared by
Interstate Engineering, Inc

I, Maria K. Tomac, hereby certify that these Plans and Specifications were prepared by me or under my direct supervision. I further certify that I am a Registered Professional Engineer under the laws of the State of North Dakota.

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.02.25 11:15:14-06'00'
NORTH DAKOTA

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SECTION 101

ADVERTISEMENT FOR BIDS

Notice is hereby given that sealed bids will be received for the Morton County Highway Department, Structure 30-145-11.0, Bridge Replacement, Project# CR25-00-067 in Morton County, North Dakota. Bids will be received by John Saiki, Morton County Highway Engineer, at the Morton County Highway Department, 2916 37th Street NW, Mandan, ND 58554 until 10:00 am on March 24, 2026, and then at said office, all bids properly submitted will be publicly opened and read aloud.

Digital copies of the Bidding Documents are available at www.interstateeng.com or www.questcdn.com for a fee of $37.00. These documents may be downloaded by selecting this project from the "Bid Documents" tab and by entering Quest Project Number #10073221 on the "Search Projects" page. For assistance and free membership registration, contact QuestCDN at (952) 233-1632 or info@questcdn.com. Paper copies of the Bidding Documents may be obtained from Interstate Engineering, located at 1403 27th St. NW, Mandan, ND 58554 for a fee of $75.00 per set. The bidding and contract documents may also be examined at this same location. Any technical questions may be directed to Maria Tomac at (701) 663-5455.

The project will consist of the following:

Bridge Replacement with a double 14' x 9' RCBC with end sections, Grading, Riprap, & incidentals.

Each bid will be submitted on the basis of a cash payment for work. It will be enclosed in a sealed envelope addressed to the above-mentioned John Saiki, County Highway Engineer, at the Morton County Highway Department, 2916 37th Street NW, Mandan, ND 58554, and shall be designated that the bid is for "Bridge Replacement Structure 30-145-11.0." The bid shall be accompanied by a Bidder's Bond in a separate envelope in the amount of five percent (5%) of the full amount of the bid, executed by the Bidder as Principal and by a Surety Company authorized to do business in North Dakota. If the Principal's bid is accepted by the OWNER and the contract awarded, the principal, within ten (10) days after the Notice of Award, will be required to execute and effect a contract in accordance with the terms of the principal's bid and any requirements and conditions of the OWNER.

A Contractor's Bond, as required by Section 48-01.2-10 of the North Dakota Century Code, shall be included with the executed Contract Documents. The Bid Security shall be as required in Section 48-01.2-05 of the North Dakota Century Code.

All bidders must be licensed for the highest amount of their bids, as required by Section 43-07-07 of the North Dakota Century Code and a copy of the license or certificate of renewal thereof issued shall be enclosed in the required bid bond envelope.

No bid will be read or considered which does not fully comply with the above provisions as to Bond and Licenses, and any deficient bid submitted will be resealed and returned to the Bidder immediately.

The OWNER retains the right to reject any or all of the bids submitted, and to waive any informality in any bid and to hold all bids for a period not to exceed thirty (30) days from said date of opening, and to hold the three low bids and bid securities for a period not to exceed sixty (60) days from said date of bid opening.

Due to the US Army Corps of Engineers Section 404 Permit status, work will commence when specified by the OWNER. Notice to Proceed will be issued to the successful bidder a minimum of ten (10) days in advance of construction.

The Bidder will be required to submit a proposed construction schedule along with their bid. Due to the close proximity of the Sweet Briar School, construction may begin as early as May 26, 2026 and the project shall be substantially complete by August 15, 2026.

By order of the OWNER

Morton County, North Dakota

Dated this 19th day of February, 2026.

SECTION 102
INFORMATION FOR BIDDERS

102-1 Sealed bids will be received by the OWNER as specified in the Advertisement for Bids for performing work as set forth in the Plans and Specifications. At the time and place indicated, the bids will be publicly opened and read.

102-2 FORM: Each proposal shall be made on a form prepared by the ENGINEER and included as one of the Contract Documents and shall be submitted in a sealed envelope bearing the title of the work, the name of the Bidder, the license number and class of license of the bidder, and date and hour of the bid opening. Proposals must be filled in, in ink or typewritten. No alterations or interlineations will be permitted, unless made before submission and initialed and dated.

102-3 DISCREPANCIES: In case of a difference between the extended price and the unit price of the proposal, the unit price shall govern.

102-4 PROPOSAL GUARANTEE: All bids are to be submitted on the basis of cash payment for the work and are to be enclosed in a sealed envelope addressed to the undersigned Authorized Representative accompanied by a bidder's bond in a separate outside envelope for a sum equal to five (5) percent of the full amount of the bid, executed by the bidder as Principal and by a Surety Company authorized to do business in this state, conditioned that if the Principal's bid be accepted and the contract awarded to him, he will, within ten days after Notice of Award, execute and effect a contract in accordance with the terms of his bid and a contractor's bond. Bid security shall be as required in Section 48-01.2-05 of the North Dakota Century Code as amended.

All bidders must be licensed for the highest amount of their bids, as required by Section 43-07-07 of the North Dakota Century Code.

No bid will be read or considered which does not fully comply with the above provisions as to bonds and licenses, and any deficient bid submitted will be resealed and returned to the bidder immediately.

As soon as the bid prices have been compared, the OWNER will return the bid securities of all except the three (3) lowest responsible bidders. When the Contract is awarded, the bid securities of the two remaining unsuccessful bidders will be returned. The bond of the successful bidder will be retained until the Agreement and Surety Bond have been executed and approved, after which it will be returned.

102-5 CONTRACT AND BOND: The party to whom the Contract is awarded will be required to execute the Agreement and a Performance Payment Bond within ten (10) calendar days from the date when the written "Notice of Award" is mailed to the Bidder at the address given by him. If any Bidder to whom a contract is awarded fails or refuses to enter into such Agreement when requested to do so, the bond accompanying his bid shall be retained by the OWNER as liquidated damages for such failure. The bond shall be delivered to the OWNER and shall be credited by him to the fund from which the consideration for such work is payable. The sufficiency of any bond filed by a bidder shall be determined by the governing body at the time it considers the bids.

102-6 PERFORMANCE AND PAYMENT BOND: A Performance and Payment Bond in the amount of one hundred percent (100%) of the Contract price with a Corporate Surety approved by the OWNER and the ENGINEER will be required for the faithful performance of the Contract, and the bidder shall state in the proposal the name and address of the Surety or Sureties who will sign this bond in case the Contract is awarded to him. The Contract Bond shall be as required by Section 48-01.2-10 of the North Dakota Century Code as amended.

A maintenance guarantee for the repair of all damages due to improper materials or workmanship for a period of one year after the acceptance of the work by the OWNER will also be required.

102-7 AWARD OR REJECTION: The Contract will be awarded to the lowest and/or best qualified responsible Bidder complying with these instructions and with the Advertisement. The OWNER reserves the right to reject any or all Proposals or to waive any formality or technicality in any Proposal. The OWNER reserves the right to hold all bids and bid securities for a period not to exceed thirty (30) days and to hold the three low bids and bid securities for a period not to exceed sixty (60) days, from the date of the bid opening.

102-8 CONTRACTOR QUALIFICATIONS: Before the award of the Contract, any bidder may be required to furnish evidence, satisfactory to the OWNER and to the ENGINEER, of the necessary facilities, ability and pecuniary resources to fulfill the conditions of the said Contract. Before contracts are executed by the OWNER, the Contractor will furnish the OWNER'S ENGINEER with a list of Subcontractors for his review, so as to conform to Section 226 of the General Conditions.

102-9 MODIFICATIONS: Alternate proposals will not be considered unless called for. Oral proposals or modifications will not be considered.

102-10 EXAMINATION OF DOCUMENTS AND SITE VISIT: Before submitting a Proposal, Bidders shall carefully examine the Drawings, read the Specifications, and the other Contract Documents, shall visit the site of work, and shall fully inform themselves as to all existing conditions and limitations. The Contractor shall accept such conditions and limitations as the same are eventually found to exist, and to waive all claims for extra compensation arising from unforeseen difficulties, except as may be expressly provided for in the Specifications. Professions of ignorance regarding the work may in no way serve to nullify the provisions of the contract or specifications.

102-11 PURCHASED DOCUMENTS: Each purchased set of Plans, Specifications and Construction Drawings will be recorded by the ENGINEER. Bids will be accepted only from the original purchasers or from another qualified Bidder to whom such a set has been transferred by the original purchaser, provided that in the event of such transfer the

ENGINEER shall receive from the original purchasers, at least five (5) days prior to the scheduled bid opening, written notice of such transfer, together with the name of the party to whom the transfer has been made.

102-12 OWNER INFORMATION OBLIGATION: The Construction Agreement and the detailed specifications contain the provisions required for the construction of the project. No information obtained from any officer, agent, or employee of the OWNER on any such matters shall in any way affect the risk or obligations assumed by the Contractor, or relieve him from fulfilling any of the conditions of the Contract, except to the extent provided in Paragraph 102-13.

102-13 INTERPRETATIONS OF DOCUMENTS: If any person contemplating submitting a Proposal is in doubt as to the true meaning of any part of the Drawings, Specifications, or other Contract Documents, or finds discrepancies in or omissions from the Drawings or Specifications, he may submit to the ENGINEER a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the documents will be made only by Addendum duly issued and a copy of the Addendum will be mailed or delivered to each person receiving a set of the Contract Documents. Neither the OWNER nor the ENGINEER will be responsible for any other explanations or interpretations of the Contract Documents.

102-14 UNACCEPTABLE BIDS: Bids which are incomplete, unbalanced, conditioned or obscure or which contain additions not called for, erasures, alterations or irregularities of any kind, or which do not comply with the Information for Bidders may be rejected at the option of the OWNER.

If the OWNER so elects, proposals may be issued for projects in combination and/or separately, so that bids may be submitted either on the combinations or on separate units of the combinations. The OWNER reserves the right to make awards on combination bids or separate bids to the best advantage of the OWNER.

Proposals will not be considered if the Bidder adds any provisions reserving the right to accept or reject an award or enter into a Contract pursuant to an award.

102-15 BID SUBMITTAL CONDITIONS: All bids must be placed in a sealed envelope upon the outside of which there is disclosed the following information:

a) The work covered by the bid.
b) A proposed construction schedule. Construction may begin as early as May 26, 2026 and the project shall be substantially complete by August 15, 2026.
c) The name of the person, firm or corporation submitting the bid.
d) The license number and class of license of the bidder.
e) A copy of the contractor's license or certificate of renewal thereof issued shall be enclosed in the required bid bond envelope.
f) Acknowledgement of each Addendum.
g) Bid Bond in outside envelope.

No contract will be awarded to any contractor unless he is the holder of a license in the class within which the value of the project shall fall. A contractor must be the holder of a license at least ten (10) days prior to the date set for receiving bids to be a qualified bidder.

Proposals shall be delivered by the time and to the place stipulated in the Advertisement for Bids. It is the sole responsibility of the Bidder to see that his proposal is received in proper time. Any proposal received after the scheduled closing time for receipt of proposals shall be returned to the Bidder unopened.

102-16 WITHDRAWAL: A bidder may withdraw any proposal he has submitted at any time prior to the hour set for the opening of the bids, provided the request for withdrawal is signed in a manner identical to the proposal being withdrawn. No withdrawal or modification will be permitted after the hour designated for the opening of the bids.

102-17 ADDENDA: Any addenda issued during the time of bidding, or forming a part of the Contract Documents loaned to the bidder for the preparation of his proposal, shall be covered in the proposal and shall be made a part of the Contract. Receipt of each Addendum shall be

acknowledged in the proposal and upon the outside of the Bid Envelope.

102-18 MORE THAN ONE PROPOSAL: No person, firm or corporation shall be allowed to make, file or to be interested in more than one proposal for the same work, unless alternate proposals are called for. A person, firm, or corporation who has submitted a sub-proposal to a bidder, or who has quoted prices on materials to a bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other bidders.

102-19 NORTH DAKOTA STATE TAX CLEARANCE: The successful Contractor shall file with the OWNER prior to award of the Contracts a current statement of income tax clearance from the North Dakota Tax Department in accordance with Section 43-07-11.1 North Dakota Century Code as amended.

102-20 GENERAL CONDITIONS: General Conditions of the Contract as bound herewith, are hereby made a part of the Contract Documents.

102-21 ESTIMATE QUANTITIES: Approval of quantities that will be the basis for payment estimates, both monthly and final, will be made by the ENGINEER.

102-22 CONFERENCES: The Contractor will be notified by the ENGINEER of any conferences that require his attendance. A date and time for said conferences will be set by the ENGINEER.

102-23 GOVERNMENT REQUIREMENTS: The Contractor shall comply with all "Government Requirements" as found in Section 300, if applicable, contained herein.

Dated this 19th day of February, 2026.

Morton County
OWNER

John Saiki
BY

Morton County Highway Engineer
TITLE

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SECTION 103
BIDDER'S PROPOSAL

103-1 PROPOSAL: In compliance with your Advertisement for Bids and subject to all the conditions thereof, the undersigned _____ hereby proposes to furnish and do everything required by the Contracts to which this refers for the construction of all structures listed at the unit prices shown for each bid item on the Bid Schedule. (The Bid Schedule attached lists the various divisions of construction contemplated in the Plans and Specifications, together with an estimate of the units of each. With these units as the basis, the bidder will extend such item, using the cost he inserts in the unit column. Any total cost found inconsistent with the unit cost when the bids are examined will be deemed in error and corrected to agree with the unit cost, which shall be considered correct.)

103-2 PROJECT: This project consists of Bridge Replacement with a double 14' x 9' RCBC with end sections, Grading, Riprap, & incidentals, as shown in the Advertisement for Bids.

103-3 EXAMINATION OF DOCUMENTS AND SITE VISIT: The undersigned has examined the location of the proposed work, the Drawings, Specifications and other Contract Documents and is familiar with the local conditions and limitations where the work is to be performed.

103-4 ADDENDA: The Receipt of Addenda ___ through ____ is hereby acknowledged.

103-5 BASIS OF PROPOSAL: All various phases of work enumerated in the Detailed Specifications with their individual jobs and overhead, whether specifically mentioned, included by implication or appurtenant thereto, are to be performed by the Contractor under one of the items listed in the bid schedule, irrespective of whether it is named in said list, and that the OWNER may specify any number or combination of units that the Engineer may deem necessary for the construction of the Project.

103-6 TAXES: Along with 103-5 above, the undersigned agrees that the prices in this Contractor's Proposal includes provisions for the payment of all monies which will be payable by the Bidder or the OWNER in connection with the construction of Project on account of taxes imposed by any taxing authority upon the sale, purchase or use of materials, supplies or equipment to be incorporated in the Project. The Bidder agrees to pay all such taxes and to furnish the appropriate taxing authorities all required information and reports pertaining thereto.

103-7 COLLUSION: The undersigned bidder does hereby declare and stipulate that this proposal is made in good faith, without collusion or connection with any other person or persons bidding for the same work, and that it is made in pursuance of and subject to all the terms and conditions of the Information for Bidders, the Construction Agreement, the Detailed Specifications, and the Plans pertaining to the work to be done, all of which have been examined by the undersigned.

103-8 PROPOSAL GUARANTEE: Accompanying this Proposal is a Bidder's Bond payable to the OWNER in the amount of five percent (5%) of this bid, in accordance with the Information for Bidders, Section 102-4.

103-9 PERFORMANCE AND PAYMENT BOND: As shown in Section 102-6, the undersigned bidder agrees to execute the Agreement and a Performance and Payment Bond for the amount of the total of this bid within ten (10) calendar days from the date when the written notice of the award of the Contract is delivered to him at the address given on this proposal. The name and address of the corporate surety with which the Bidder proposes to furnish the specified Performance and Payment Bond is as follows:

_____

103-10 CONTRACTOR'S LICENSE: The undersigned hereby warrants it possesses Contractor's License Class _____ No. _____ for the State of _____, in which the project is located and said license expires on _____, 20___.

103-11 CONTRACT TIME: Bidder will be required to submit a proposed construction schedule along with their bid. Due to the proximity of the Sweet Briar School, construction may begin as early as May 26, 2026 and the project shall be substantially complete by August 15, 2026.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the project by December 1, 2026. Bidder further agrees to pay as liquidated damages the sum of $1,600 for each calendar day that the Contractor shall be in default of the time specified. This is as provided in Section 215 of the General Conditions.

103-12 OWNER'S RIGHTS RESERVED: The undersigned understands that the OWNER reserves the right to reject any or all Proposals or to waive any formality or technicality in any Proposal in the interest of the OWNER.

103-13 PAYMENT: This bid is submitted based on cash payment for work. Payment for work performed will be in accordance with the Bid Schedule, subject to changes as provided for in the Construction Contract.

103-14 BIDDER'S PROPOSAL:

Base Bid

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	CONTRACT BOND	L SUM	1.00		
2	CLEARING AND GRUBBING	L SUM	1.00		
3	REMOVAL OF STRUCTURE	EA	1.00		
4	REMOVE EXISTING FENCE	LF	865.00		
5	REMOVAL OF TEMPORARY BYPASS	EA	1.00		
6	COMMON EXCAVATION - TYPE B	CY	1,659.00		
7	TOPSOIL	CY	727.00		
8	BORROW-EXCAVATION	CY	1,405.00		
9	BOX CULVERT EXCAVATION	EA	1.00		
10	CHANNEL EXCAVATION	L SUM	1.00		
11	FOUNDATION FILL	TONS	1,023.00		
12	FOUNDATION FILL-TYPE 1	TONS	571.00		
13	FOUNDATION PREPARATION - BOX CULVERT	L SUM	1.00		
14	WATER	M GAL	51.00		
15	SEEDING CLASS II	ACRE	1.88		
16	WETLAND SEED	ACRE	0.08		
17	TEMPORARY COVER CROP	ACRE	1.88		
18	STRAW MULCH	ACRE	3.76		
19	RIPRAP - GRADE II	CY	127.00		
20	SILT FENCE SUPPORTED	LF	44.00		
21	REMOVE SILT FENCE SUPPORTED	LF	44.00		
22	FIBER ROLLS 12IN	LF	1,405.00		

23	REMOVE FIBER ROLLS 12IN	LF	314.00		
24	FLOTATION SILT CURTAIN	LF	15.00		
25	REMOVE FLOTATION SILT CURTAIN	LF	15.00		
26	GRAVEL SURFACING	TON	587.00		
27	DBL 14FT X 9FT PRECAST RCB CULVERT	LF	60.00		
28	DBL 14FT X 9FT PRECAST RCB END SECTION	EA	2.00		
29	MOBILIZATION	L SUM	1.00		
30	TRAFFIC CONTROL SIGNS	UNIT	416.00		
31	TYPE III BARRICADE	EA	2.00		
32	GEOSYNTHETIC MATERIAL TYPE R1	SY	620.00		
33	FENCE BARBED WIRE 3 STRAND	LF	865.00		
34	OBJECT MARKERS - TYPE III	EA	4.00		
35	TEMPORARY STREAM DIVERSION	EA	1.00		
				Total	

TOTAL BASE BID $_____

One contract for general construction may be awarded based on the low responsive bid with the bid as accepted by the OWNER.

103-15 SUBCONTRACTORS.

The bidder shall furnish the following information at the time of bidding to disclose to the Owner those subcontractors that the bidder will be using to construct the project. Failure to complete this section shall make the bid non-responsive and may be a cause for rejection. The County's experience with Contractors and subcontractors will be considered when determining if the Contractor is responsible.

ITEM OF WORK *(Including but not limited to the following)*	**WORK TO BE COMPLETED BY** *(Complete by using Bidder's name or proposed subcontractor)*
Earthwork	
Gravel	
Erosion Control	
Flotation Curtain	
Traffic Control	
Signing	

103-16 MODIFICATIONS OF BASE BID - only approved materials will be considered.

If the Contractor is allowed to use _____

(Name Alternate Material)

for _____ deduct $_____

(System Component)

add $_____ from base bid.

If the Contractor is allowed to use _____

(Name Alternate Material)

for _____ deduct $ _____

(System Component)

add $_____ from base bid.

If the Contractor is allowed to use _____

(Name Alternate Material)

for _____ deduct $ _____

(System Component)

add $_____ from base bid.

103-17 THE ABOVE PROPOSAL IS HEREBY RESPECTFULLY SUBMITTED BY:

_____

(Contractor)

_____ _____

(By) (Title)

_____

(Business Address) (City) (State) (Zip)

_____ _____

(Date) (Telephone Number)

ATTEST: (SEAL)

_____

Corporate Secretary

(The Proposal must be signed with the full name of the Bidder. In the case of a partnership, the Proposal must be signed in the firm name of each partner. In the case of a corporation, the Proposal must be signed in the corporate name by a duly authorized officer and the corporate seal affixed and attested by the Secretary of the corporation.)

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SECTION 104
NOTICE OF AWARD

TO: _____

_____

_____

Description of Work: _____

_____for the _____

_____. The OWNER, represented by the undersigned, has considered the Proposal submitted by you for the above described work in response to its "Advertisement for Bids" dated _____, _____ and Information for Bidders.

It appearing that it is in the best interest of said OWNER to accept your proposal in the amount of

_____

_____ DOLLARS ($_____), you are hereby notified that _____

_____ Proposal has been accepted for items _____

_____. You are required by Section 102 Information for Bidders to execute the agreement with the undersigned OWNER and to furnish the required Contractor's Performance and Payment Bond within ten (10) days from the date of the sending of this notice to you.

If you fail to execute said agreement and to furnish said bond within ten (10) days from the date of the sending of this notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your proposal, as abandoned, and to award the work covered by your Proposal to another, or to re-advertise the work or otherwise dispose thereof as the OWNER may see fit.

Dated this _____ day of _____, 20____.

OWNER: _____

BY: _____

TITLE: _____

(SEAL)

ATTEST:

_____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged this

_____ day of _____, 20___.

_____

By:_____

Title:_____

SECTION 105
CONSTRUCTION AGREEMENT

THIS AGREEMENT, Made this _____ day of _____, 20_____, at _____ State of _____ by and between the _____, hereinafter called the "OWNER", and_____, hereinafter called the "Contractor" to complete the following work: _____

_____

WITNESSETH THAT:
In consideration of the mutual covenants and conditions hereinafter set forth, the OWNER and Contractor hereby agree as follows:

105-1 SCOPE OF WORK: The Contractor shall furnish and pay the cost, including sales tax and all other applicable taxes and fees, of all the necessary materials not furnished by the OWNER and shall furnish and pay for all the superintendence, labor, tools, equipment and transportation and perform all the work required for the construction of all structures listed and itemized under the bid schedule of the Bidder's Proposal attached hereto in strict accordance with the General Conditions; Special Conditions, Governmental Requirements, the Plans, which include all maps, plats, blueprints, and other drawings and printed or written explanatory matter therein; the Specifications and Contract Documents as prepared by Interstate Engineering, Inc., herein called "ENGINEER", and any amendments thereto and such supplemental Plans and Specifications as may hereafter be approved.

All addendums _____ through ____ are hereby made part of this Contract.

105-2 COMPLETION OF WORK: The Contractor shall commence the work covered by this Agreement within _____ calendar days after the date of the Notice to Proceed and shall complete the same _____ unless the period for completion is extended as hereinafter provided.

105-3 CONTRACT SUM: The OWNER shall pay the Contractor for the performance of said work as set forth by Section 105-1 above, _____ _____ DOLLARS ($_____).

Breakdown of above mentioned contract amount is as follows:

105-4 MAINTENANCE: The Contractor shall guarantee the repair of all damages or defects due to faulty materials or workmanship done by the Contractor or subcontractors. This guarantee shall remain in effect for a period of one year after acceptance of the project by the OWNER according to the General Conditions.

105-5 PAYMENT: Payment shall be made to the Contractor for work performed under this Agreement for the quantities of work as determined in accordance with the General Conditions.

105-6 SUB-CONTRACTORS: The Contractor agrees to bind every sub-contractor by the terms of the Contract Documents. The Contract Documents shall not be construed as creating any contractual relation between any sub-contractor and the OWNER.

105-7 SUCCESSORS AND ASSIGNS: This Agreement and all of the covenants hereof shall insure to the benefit of and be binding, upon the OWNER and the Contractor respectively and his partners, successors, assigns and legal representatives. Neither the OWNER nor the Contractor shall have the right to assign, transfer or sublet his interests or obligations hereunder without written consent of the other party.

105-8 SOURCE AND MANNER OF PAYMENT: All payments shall be made in warrants drawn on the construction account of the funds of the _____ _____and said warrants shall bear no interest and shall be payable immediately on issuance.

105-9 OWNER'S RIGHT TO SUSPEND WORK: The OWNER by resolution duly adopted by the governing body, shall have the right to suspend the work at any time for improper

construction, and to relet the contract therefore, or to order the reconstruction of the work as to any part thereof improperly done. This right shall be additional to the rights, powers, and privileges reserved to the OWNER in the several provisions of the plans and specifications.

105-10 OWNER ASSUMES NO GENERAL LIABILITY: It is expressly agreed and understood that the OWNER assumes and incurs no general liability under the contract for the payment of any compensation to the Contractor, or any other person; the OWNER'S obligation hereunder being limited solely to the administration and application of the funds of said _____ _____, in accordance with the law, and the provisions of this Agreement.

105-11 ENGINEER'S FAILURE TO REJECT WORK: Failure of the ENGINEER to reject work and materials which are not up to specifications and acceptance of the job by the ENGINEER shall not release the Contractor from liability for any failure on his part to perform work or furnish materials in accordance with the plans and specifications.

105-12 INDEMNIFICATION: To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Owner's consultants, agents, and employees; Engineer, Engineer's consultants, agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expenses attributable to bodily injury, sickness, disease or death, or injury to or destruction of tangible property (other than the Work itself) including loss of use resulting there from, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

105-13 SERVICE OF NOTICE: All notices required to be given hereunder shall be mailed or delivered in the case of the OWNER to _____and in the case of the Contractor to_____.

IN WITNESS WHEREOF, the parties hereto have caused these present to be executed the day and year first above written.

(SEAL) OWNER:_____

ATTEST:_____ BY:_____

TITLE:_____ TITLE:_____

(SEAL) CONTRACTOR:_____

ATTEST:_____ BY:_____

TITLE:_____ TITLE:_____

SECTION 106

PERFORMANCE - PAYMENT BOND

THE STATE OF _____

COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____ (2) _____ of _____ hereinafter called Principal and (3) _____ of _____ State of _____, hereinafter called the Surety, are held and firmly bound unto (4) _____, hereinafter called OWNER, and unto all persons, firms, and corporations who may furnish materials for, or perform labor upon the building or improvements hereinafter referred to in the penal sum _____ _____ DOLLARS ($_____) in lawful money of the United States to be paid in (5) _____ County, North Dakota, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with (6) _____which is dated the ___ day of _____ 20 ____, a copy of which is hereto attached and made a part hereof for the construction of _____

_____

_____

NOW THEREFORE, the principal shall (1) well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term of said contract and any extension thereof that may be granted by the OWNER with or without notice to the surety, and during the life of the one year guaranty required under the contract, and (2) promptly make payment to all persons supplying labor and materials including supplies used for machinery and equipment, performed,

furnished and used in and about the performance of the contract to the principal or to any subcontractor of the principal in the prosecution of the work provided for in said contract (failing which such persons shall have a direct right of action against the principal and surety under this obligation), also such payment shall include interest in the amount authorized under Section 13-01-14 of the North Dakota Century Code on all bills and claims not paid within ninety (90) days and (3) well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made and promptly make payment to all persons supplying labor and materials including supplies used for machinery and equipment, performed, furnished and used in and about the performance of the contract to the principal or to any subcontractor to the principal in the prosecution of the work provided for in such modifications (failing which such persons shall have a direct right of action against the principal and surety under this obligation), notice to the surety of all duly authorized modifications being hereby waived, and (4) make, prior to the commencement of any work by himself or any subcontractor under the contract, full and true report to Workforce Safety & Insurance of the payroll expenditures for the employees to be engaged in such work and pay the premium thereon prior to the commencement of such work, and (5) the Contractor will pay or cause to be paid all sales and use taxes payable as a result of the performance of the contract for which the bond is given, as well as the payment of gasoline and special motor fuels taxes used in the performance of the contract, and all motor vehicle fees required for commercial motor vehicles used in connection with the performance of such contract then this obligation to be void; otherwise to remain in full force and effect.

In case of a default on the part of the principal herein in the performance of the work as provided in the above contract, the sum of this bond as set out above shall be taken and held to be fixed and liquidated damages in favor of the OWNER, and said full amount may be recovered from the principal and surety in an action against them on this bond.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

_____

Secretary or Principal

(CORPORATE SEAL)

Principal: (7) _____

By: _____

Title: _____

Address: _____

Surety: _____

By: _____
Attorney-in-Fact

ATTEST:

_____

Secretary of Surety

(CORPORATE SEAL)

Full Name of Surety Company _____

Home Office Address _____

Name of Attorney-in-Fact _____

Name of Local Agency _____

Address of Local Agency _____

A copy of the Power of Attorney of the Attorney-in-fact showing that it remains in force as of the date of the Bond must be attached to the Bond.

.....

NOTE: Date of Bond must not be prior to date of Contract.

(1) Correct name of Contractor
(2) A Corporation, a Partnership or an Individual as case may be.
(3) Correct Name of Surety
(4) Correct Name of OWNER
(5) County
(6) OWNER
(7) If Contractor is Partnership, all partners should execute Bond.

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SECTION 107

ADDITIONAL DOCUMENTS OF CONTRACT

(To be supplied after award)

107-1 Acknowledgment of Principal

107-2 Power of Attorney

107-3 Liability Insurance (See Section 221 of General Conditions)

107-4 Current Workmen's Compensation Certificate of Premium Paid

107-5 Contractor's Certificate of North Dakota Income and Sales Tax Clearance

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SECTION 108
NOTICE TO PROCEED

TO:_____

_____

_____

_____

_____

DATE:_____

PROJECT:_____

_____

_____

_____

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20____, on or before _____, 20____, and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 20____.

_____

OWNER

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged

_____

This the ____day of _____, 20__.

By:_____

Title: _____

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SECTION 200
GENERAL CONDITIONS
OF THE CONTRACT

1. Definitions
2. Additional Instructions and Detail Drawings
3. Schedules, Reports, and Records
4. Drawings and Specifications
5. Shop Drawings
6. Materials, Services and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations
11. Protection of Work, Property, Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Work
17. Subsurface Conditions
18. Suspension of Work, Termination and Delay
19. Payments to Contractors
20. Acceptance of Final Payment as Release
21. Insurance
22. Contract Security
23. Assignments
24. Indemnification
25. Separate Contracts
26. Subcontracting
27. Engineer's Authority
28. Land and Rights-of-Way
29. Guaranty
30. Taxes

201 DEFINITIONS

201-1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

201-2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications or corrections.

201-3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

201-4 BIDDER - Any person, firm or corporation submitting a BID for the WORK.

201-5 BONDS - Bid, Performance, and other instruments of security, furnished by the CONTRACTOR and his Surety in accordance with the CONTRACT DOCUMENTS.

201-6 CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS or authorizing an adjustment in the CONTRACT PRICE OF CONTRACT TIME.

201-7 CONTRACT DOCUMENTS - The contract, including Advertisement for Bids, Information for Bidders, BID, Bid Bond, Agreement, Performance Bond, NOTICE OF

AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS and ADDENDA.

201-8 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

201-9 CONTRACT TIME - The number of calendar days, or weather working days, stated in the CONTRACT DOCUMENTS for the completion of the WORK.

201-10 CONTRACTOR - The person, firm or corporation with whom the OWNER has executed the Agreement.

201-11 DRAWINGS - The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

201-12 ENGINEER - INTERSTATE ENGINEERING, INC., Jamestown, North Dakota, or its representative, duly authorized in writing to act for the ENGINEER.

201-13 FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.

201-14 NOTICE OF AWARD - The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.

201-15 NOTICE TO PROCEED - Written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

201-16 OWNER - A public or quasi-public body or authority, corporation, association, partnership or individual for whom the WORK is to be performed.

201-17 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

201-18 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.

201-19 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER, or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.

201-20 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

201-21 SUBCONTRACTOR - An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

201-22 SUBSTANTIAL COMPLETION - That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.

201-23 SUPPLEMENTAL GENERAL CONDITIONS - Modifications to General Conditions required by a Federal Agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable tribal or federal law.

201-24 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design.

201-25 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

201-26 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the WORK.

202 ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

202-1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

202-2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

203 SCHEDULES, REPORTS AND RECORDS

203-1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress-schedules, payrolls, reports, estimates, records and other data where applicable as required by the CONTRACT DOCUMENTS for the WORK to be performed.

203-2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry out the WORK, including dates at which he will start the various portions of the WORK, estimated date of completion of each part and, as applicable:

203-2.1 The dates at which special detail drawings will be required; and

203-2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and installation of materials, supplies and equipment.

203-3 The CONTRACTOR shall also submit a schedule of payments that he anticipates he will earn during the course of the WORK.

204 DRAWINGS AND SPECIFICATIONS

204-1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

204-2 In case of conflict between the DRAWINGS, and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

204-3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

204-4 Ownership of DRAWINGS and SPECIFICATIONS: All original or duplicated DRAWINGS and SPECIFICATIONS and other data prepared by the ENGINEER shall remain the property of the ENGINEER, and they shall not be reused on other work, but shall be returned to him upon completion of the WORK.

205 SHOP DRAWINGS

205-1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER, which shall likewise require approval by the Federal Contracting Officer.

205-2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

205-3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

205-4 EQUIPMENT DATA - The CONTRACTOR shall submit for the ENGINEER'S review complete catalog data for every manufactured item of equipment and all components to be used in the work, including specific performance data, material description, rating, capacity, working pressure, material gauge or thickness, brand name, catalog number and general type. This submission shall be compiled by the CONTRACTOR and reviewed by the ENGINEER before any equipment is ordered.

206 MATERIALS, SERVICES AND FACILITIES

206-1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

206-2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

206-3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

206-4 Materials, supplies and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

206-5 Materials, supplies or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUB-CONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

206-6 MATERIALS FURNISHED BY THE OWNER - Materials specifically indicated shall be furnished by the OWNER. The fact that the OWNER is to furnish material is conclusive evidence of its acceptability for the purpose intended and the CONTRACTOR may continue to use it until otherwise directed. If the CONTRACTOR discovers any defect in material furnished by the OWNER, he shall notify the ENGINEER. Unless otherwise noted or specifically stated, materials furnished by the OWNER, which are not of local occurrence, are considered to be f.o.b., the nearest railroad station. The CONTRACTOR shall be prepared to unload and properly protect all such material from damage or loss. The CONTRACTOR shall be responsible for material loss or damage after receipt of material at the point of delivery.

206-6.1 INDEX - Each data sheet or catalog in the submission shall be indexed according to SPECIFICATION section and paragraph for easy reference.

206-6.2 RELATION TO CONTRACT DOCUMENTS - Catalog data for equipment reviewed by the ENGINEER shall not supersede the ENGINEER'S CONTRACT DOCUMENTS. The review of the ENGINEER shall not relieve the CONTRACTOR from responsibility for deviations from DRAWINGS of SPECIFICATIONS, unless he has in writing called the ENGINEER'S attention to such deviations at the time of submission, nor shall it relieve him from responsibility for errors of any sort in the items submitted. The CONTRACTOR shall check the WORK described in the catalog data with the ENGINEER'S CONTRACT DOCUMENTS for deviations and errors.

206-6.3 CONTRACTOR'S CERTIFICATION - Equipment data shall be submitted by the CONTRACTOR with a covering letter indicating that he has reviewed, checked and approved the data submitted, that they are in harmony with the requirements of the PROJECT and with the provisions of the CONTRACT DOCUMENTS and that he has verified all field measurements and construction criteria, materials, catalog numbers and similar data. CONTRACTOR shall also certify that the WORK represented by the SHOP DRAWINGS is recommended by the CONTRACTOR and that his GUARANTY will fully apply.

207 INSPECTION AND TESTING

207-1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

207-2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

207-3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

207-4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

207-5 Inspections, tests or approvals by the ENGINEER or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

207-6 The OWNER and the ENGINEER and his representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection or testing thereof.

207-7 If any WORK is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

207-8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will 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 and an appropriate CHANGE ORDER shall be issued.

208 SUBSTITUTIONS

208-1 Whenever material, article or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalog number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalog number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

209 PATENTS

209-1 The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringements of any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however, if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the ENGINEER.

210 SURVEYS, PERMITS, REGULATIONS

210-1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS, unless otherwise specified in the CONTRACT DOCUMENTS, the OWNER shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

210-2 The CONTRACTOR shall carefully preserve benchmarks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

210-3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 213, CHANGES IN THE WORK.

211 PROTECTION OF WORK, PROPERTY AND PERSONS

211-1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

211-2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify OWNER of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either of them or anyone for those acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

211-3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury, or loss. He will give the ENGINEER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

212 SUPERVISION BY CONTRACTOR

212-1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

213 CHANGES IN THE WORK

213-1 The OWNER may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

213-2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The Contractor shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes, pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER, provided, that all such change orders must also be approved by the Federal Contracting Officer.

214 CHANGES IN CONTRACT PRICE

214-1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below, and not to exceed 25% of the CONTRACT AMOUNTS. If requested by Contractor in writing:

1. Unit prices previously approved.
2. An agreed lump sum.
3. The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work. In addition there shall be added a percentage to be agreed upon of the actual cost of the WORK to cover the cost of general overhead and profit.

215 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

215-1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

215-2 The Contractor will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

215-3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS. Liquidated damages shall be as shown in the Specifications.

215-4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

215-4.1 To any preference, priority or allocation order duly issued by the OWNER.

215-4.2 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

215-4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in Paragraphs 215-4.1 and 215-4.2 of this article.

216 CORRECTION OF WORK

216-1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and

re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

216-2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

217 SUBSURFACE CONDITIONS

217-1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

217-1.1 Subsurface or latent physical conditions of the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

217-1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

217-2 The OWNER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

218 SUSPENSION OF WORK, TERMINATION AND DELAY

218-1 The OWNER may suspend the WORK or any portion thereof, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension, which is not attributable to fault of the contractor.

218-2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the CONTRACT DOCUMENTS,

then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER.

Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

218-3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

218-4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the CONTRACT. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

218-5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days WRITTEN NOTICE to the OWNER and the ENGINEER stop the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

218-6 If the performance of all or any portion of the WORK is suspended, delayed or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME,

or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

219 PAYMENTS TO CONTRACTOR

219-1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER'S title to the material and equipment and protect his interests therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may take the necessary corrections and resubmit the partial payment estimate. The OWNER will, within thirty (30) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The retainage shall be an amount equal to ten percent (10%) of said estimate until fifty percent (50%) of the work has been completed. At fifty percent (50%) completion, further partial payments shall be made in full to the CONTRACTOR and no additional amounts may be retained unless the ENGINEER certifies that the job is not proceeding satisfactorily, but amounts previously retained shall not be paid to the CONTRACTOR. At fifty percent (50%) completion or any time thereafter when the progress of the WORK is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than ten percent (10%) of the value of the work completed. Upon substantial completion of the work, any amount retained may be paid to the CONTRACTOR. When the WORK has been substantially completed except for WORK which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the OWNER are valid reasons for non-completion, the OWNER may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the WORK still to be completed. On completion and acceptance of a part of the WORK on which the price is stated separately in the CONTRACT DOCUMENTS, payment may be made in full, including retained percentages, less authorized deductions.

219-2 The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.

219-3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

219-4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damages WORK except such as may be caused by agents or employees of the OWNER.

219-5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

219-6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUBCONTRACTOR'S, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

219-7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the rate of 6% By Annum commencing on the first day after said payment is due and continuing until payment is received by the CONTRACTOR.

220 ACCEPTANCE OF FINAL PAYMENT AS RELEASE

220-1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the PERFORMANCE BOND.

220-2 CLEANING UP - The CONTRACTOR shall remove from the OWNER'S property, and from all public and private property, all temporary structures, rubbish, and waste materials resulting from his operation or caused by his employees, and shall remove all surplus materials leaving the site smooth, clean and true to line and grade.

220-3 ACCEPTANCE AND FINAL PAYMENT - When the CONTRACTOR shall have completed the WORK in accordance with the terms of the CONTRACT DOCUMENTS, he shall certify completion of the WORK to the OWNER and submit a final REQUEST FOR PAYMENT, which shall be the CONTRACT AMOUNT plus all approved additions less all approved deductions and less previous payments made. The CONTRACTOR shall furnish evidence (See Attached Affidavit) that he has fully paid all debts for labor, materials, and equipment incurred in connection with the WORK, and upon acceptance by the OWNER, the OWNER will release the CONTRACTOR except as to the conditions of the CONTRACT BOND, any legal rights of the OWNER, required guaranties, and Correction of Faulty Work After Final Payment, and will pay the CONTRACTOR'S final Request for Payment. The CONTRACTOR shall allow sufficient time between the time of completion of the WORK and approval of the final Request for Payment for the ENGINEER to assemble and check the necessary data.

221 INSURANCE

221-1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

221-1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts:

221-1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

221-1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

221-1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

221-1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting there from.

221-2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

221-3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:

221-3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than $500,000 for all damages arising out of bodily injury, including death, at any time resulting there from, sustained by any one person in any one accident; and a limit of liability of not less than $1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $100,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than $200,000 aggregate for any such damage sustained by two or more persons in any one accident.

221-3.2 The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

221-4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the work is performed. Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any work is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

221-5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured, the CONTRACTOR, the ENGINEER, and the OWNER.

221-6 RAILROAD INSURANCE COVERAGE - The CONTRACTOR and his SUBCONTRACTORS shall provide adequate insurance to cover limits set forth by the railroad company for working adjacent to crossing their tracks.

222 CONTRACT SECURITY

222-1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the State in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other Surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

223 ASSIGNMENTS

223-1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign or otherwise, dispose of the CONTRACT or any portion thereof, or of his right, title or interest therein, or his obligations there under, without written consent of the other party.

224 INDEMNIFICATION

224-1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting there from; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

224-2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on

the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

224-3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

225 SEPARATE CONTRACTS

225-1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution of results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

225-2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

225-3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves him in additional expense or entitles him to an extension of the CONTRACT TIME, he may make a claim therefore as provided in Sections 214 and 215.

226 SUBCONTRACTING

226-1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.

226-2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

226-3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly

employed by them, as he is for the acts and omissions of persons directly employed by him.

226-4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

226-5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

227 ENGINEER'S AUTHORITY

227-1 The ENGINEER shall act as the OWNER'S representative during the construction period. He shall decide questions which may rise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

227-2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

227-3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

227-4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

228 LAND AND RIGHTS-OF-WAY

228-1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

228-2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

228-3 The CONTRACTOR shall provide at his own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

229 GUARANTY

229-1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of acceptance by the OWNER. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of acceptance by the OWNER of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

230 TAXES

230-1 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

SECTION 1900
SPECIAL CONDITIONS

1901 GENERAL

TECHNICAL SPECIFICATIONS: The North Dakota Department of Transportation "Standard Specifications for Road and Bridge Construction", 2025 Edition shall govern for this project except where its requirements conflict with the requirements of these plans or these specifications. In all cases of conflict, the Specifications and Plans shall govern.

The "General Provisions" section of the NDDOT Standard Specifications for Road and Bridge Construction shall be superseded by the Specifications booklet that accompanies these plans unless specific sections are referenced in these Specifications. The following changes shall be made to the North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction:

"Engineer" shall be Interstate Engineering, Inc.
"Director" shall be Morton County.

1902 UTILITY COMPANIES

Notice to utilities shall be given by the Contractor. This notice shall state their contemplated starting date, construction schedule and areas to be disturbed.

Utilities known to exist in the project area are:

Utility	Owner
Communications	BEK Communications
Electric	Mor-Gran-Sou Electric
Water	Missouri West Water System

This list is not meant to be inclusive, and other utilities may exist within the project area. The Contractor is required to give 48 hour notice to all utilities within the project area of pending construction.

The utilities shown on the plans were obtained from the various utility companies' as-built drawings and the utility locations shown are to be considered approximate locations.

Existing utilities may exist at locations not shown on the plans.

1903 TEMPORARY WATER DIVERSION

DESCRIPTION

Diversions are used to temporarily reroute surface water or restrict flows to allow for the construction activities to take place.

This work consists of constructing and maintaining a temporary diversion to allow for project construction.

This work is in conjunction with the requirements of Standard Special Provision (SSP) 1 “Temporary Erosion and Sediment Best Management Practices,” and the Construction General Permits.

MATERIALS

Item	Section
Geosynthetic Type R1	858

Where R1 material is specified according to the design, alternative materials may be used if the alternative material has a lower permittivity and higher strength than Geosynthetic Type R1.

CONSTRUCTION REQUIREMENTS

A. General.

Obtain and modify all appropriate permits before work commences on the diversions.

Design, construct, operate, and remove temporary diversions to prevent soil/water interaction.

Strip and stockpile topsoil from areas where the temporary diversion will be constructed and installed. Do not place stockpiles between the diversion and the work area. Stabilize stockpiles placed within 200 feet of the diversion and work area within 24 hours of construction of the stockpile

Isolate work area using dikes or other methods even when no water is present. Construct the diversion before beginning work on the structure.

1. Plan Submittal.

Submit a design for the diversion that includes work drawings and include the submittals with the Storm Water Pollution Prevention Plan (SWPPP).

2. Design.

Design the temporary diversion to withstand the 2-year event and meet the following:

- If flow occurs while the diversion is in place, a portion of the flow must be passed as water accumulates in order to maintain flows downstream;
- Maintain downstream water quality equal to the upstream water quality; and
- Include provisions that will prevent the accumulation of job site sediment in the diversion.

B. Diversion Components.

Construction of the diversion may entail using the components listed below or other methods approved by the Engineer.

Install diversion measures before beginning work on the structure.

1. **Dike.**
   Construct upstream and downstream dikes to isolate the work area. Construct dikes using one or more of the following materials:
   - Sandbags;
   - Sheet piles;
   - Soil wrapped with Geosynthetic Type R1;
   - Water filled bladder;
   - Impermeable containers; or
   - Prefabricated dams.

2. **Work Area Dewatering.**
   Operate the dewatering system within the work area to prevent any change in water quality of the water body. Before beginning dewatering of the work area, provide an inlet control system that limits sediment from entering the system and provide a stabilized discharge from the dewatering system.

   Inlet control systems may include:
   - Surface skimmers;
   - Aggregate filled perforated containers; or
   - Inlet filter sock.

   Stabilized discharges may include:
   - Dewatering basin;
   - Sediment bag; or
   - Filtering through vegetation.

   Design and operate the discharge so that there is no visible sediment plume present in the water body and the discharge causes no additional erosion or sediment.

   Do not discharge water directly to the water body or the diversion.

3. **Culvert Installation.**
   Provide positive drainage from the upstream to downstream ends of the culvert and install energy dissipation measures at culvert outlets.

   a. **Culvert Through Existing Structure.**
      Install pipes through the existing structure.

      Construction may include using the following steps:
      (1) Install a temporary culvert through the structure.
      (2) Anchor and seal the installed pipes at the upstream impervious dike.
      (3) Extend the installed pipes through the downstream impervious dike.

   b. **Culvert Diversion.**
      Install a temporary pipe crossing under the roadway near the existing structure.

4. **Channels.**
Construct channels with side slopes that are 2:1 or flatter with a channel bottom of sufficient width. Cover disturbed slopes and channel bottom with Geosynthetic Material, Type R1.

Overlap splices and joints placed at least 36 inches.

Secure the liner using methods that will ensure that the liner will not be disturbed by the design flows. Potential methods of securing the liner may include:

- Staples;
- Pins;
- Sandbags; or
- Riprap.

Patch damaged areas of channel liner. Place a patch that overlaps the damaged area by 36 inches on all sides. Secure the patch with pins or staples.

Install fiber rolls or silt fence along the top of the channel to prevent any sediment or debris from entering the channel.

Connect the downstream end of the channel before connecting the upstream end of the channel to the existing water body.

5. **Diversion Pumping.**
Place an inlet control system at pump inlets. An inlet control system may include:

- Surface skimmers;
- Aggregate filled perforated containers; or
- Inlet filter sock.

Route the discharge hose through the structure or work area.

Design and operate the discharge so that no visible sediment plume is present in the water body and so the discharge causes no additional erosion of the water body.

C. Diversion Removal.
Do not begin removal of the temporary diversion until the construction activities relating to the structure are complete and all permanent erosion and sediment control devices are in place. Remove the diversion in a manner that prevents soil/water interaction.

Remove all materials used to construct the diversion.

Restore the area affected by the temporary diversion to the same condition that existed before construction.

1. **Downstream Dike.**
Remove the downstream dike first. Stabilize the areas above the waterline where the downstream dike was located.

2. **Upstream Dike.**
Remove the upstream dike to restore normal flow through the structure before removal of any devices used to create the diversion.

Stabilize the areas above the waterline where the upstream dike was located.

a. **Suspended Pipe.**
Remove the suspended pipe at the same time as removing the upstream dike.

b. **Channel and Pipe Diversion.**
Remove the upstream dike and construct a dike to prevent water from entering the channel or pipe diversion.

3. **Pipe.**
Remove pipe after the stream has been restored to normal flow.

4. **Channel.**
Backfill temporary channels outside of the roadway embankment as specified in Section 203.04 E.3, “Compaction Control, Type B”. When backfilling roadway embankment areas, benching of slopes will be required as specified in Section 203.04 E.1, “General”.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Pay Item	Pay Unit
Temporary Stream Diversion	Each

The Engineer will pay for the stream diversion according to Table 1.

Table 1	
Work Completed	**Percent of Contract Unit Price**
Stream Diversion Installed	75
Restoration of the Diversion	25

Include the cost for installation, maintenance, and removal of erosion control devices used in conjunction with the stream diversion in the contract unit price for “Temporary Stream Diversion”. Section 4, “Basis of Payment” in SSP 1 does not apply to erosion control devices used in conjunction with stream diversions.

Such payment is full compensation for designing, furnishing all equipment, material, labor, and other incidentals to complete the work as specified.

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DESIGN DATA				
TRAFFIC	AVERAGE DAILY			
CURRENT: 2018	PASS: < 40	TRUCKS: < 40	TOTAL: 40	
FORECAST:	PASS: < 100	TRUCKS: < 100	TOTAL: < 100	

DESIGN SPEED (1): 55 mph	DESIGN SPEED (2):
CLEAR ZONE DISTANCE (1): 18 ft	CLEAR ZONE DISTANCE (2):
MIN. SIGHT DISTANCE: 495 ft	
DESIGN ACCUM. ESALS: N/A	BRIDGES: STA 1+50
PAVEMENT DESIGN LIFE: N/A	
ACCESS CONTROL: N/A	
LENGTH (NET MILES): 0.03	LENGTH (GROSS MILES): 0.03

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	1	1

CONSTRUCTION PLANS

PREPARED FOR

MORTON COUNTY, NORTH DAKOTA

CR25-00-067
BRIDGE #30-145-11.0

NEW BRIDGE #30-145-11.1

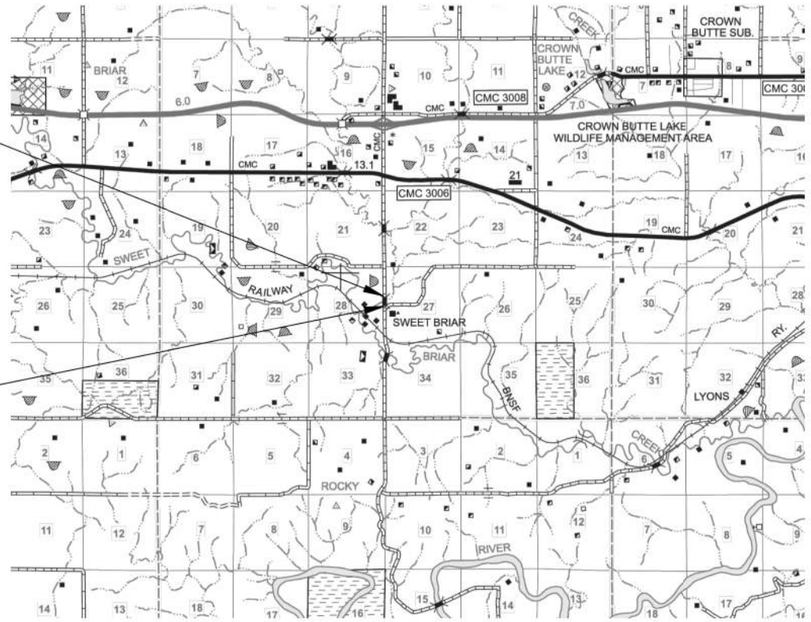
Located 2.4 miles South of Interstate 94 off exit 140
Replacement of Bridge #30-140-11.0 with a 60' Box Culvert
Approach grading, Aggregate Surfacing and Incidentals

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	07/01/2025
Supplemental Specifications	NONE

NET MILES	GROSS MILES
0.03	0.03

END PROJECT
STA 3+00.00
N = 423855.68
E = 1804825.00
Sec: 27/28-T139N-R83W

BEGIN PROJECT
STA 0+00.00
N = 423555.69
E = 1804827.35
Sec: 27/28-T139N-R83W



PROJECT ENGINEER
MARIA TOMAC, PE

PROJECT MANAGER
MARIA TOMAC

DESIGNER
CARMEN KNOLL

DESIGNER

DESIGNER

DESIGNER

QA / QC
DAMON DEVILLERS

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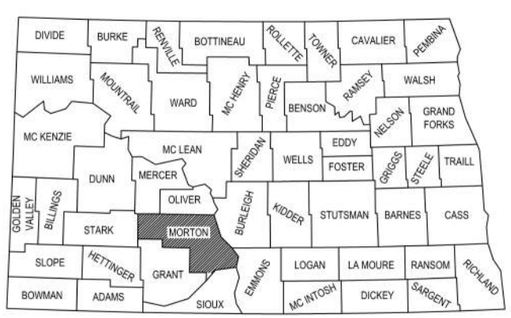
STATE COUNTY MAP



MORTON COUNTY
MANDAN, ND

APPROVAL NAME DATE

OTHER
OFFICE LOCATION

APPROVAL NAME DATE

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC PE-5939
DATE 2026.01.30 08:04:44-06'00'
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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TABLE OF CONTENTS

PLAN SECTIONS

LIST OF STANDARD DRAWINGS

SPECIAL PROVISIONS

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INTERSTATE ENGINEERING
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REMOVE & REPLACE EXISTING
TIMBER STRUCTURE # 30-145-11.0 @ STA: 1+50
WITH DOUBLE BARREL 14' x 9' x 60' BOX

REMOVE AND REPLACE
BARBED WIRE FENCE

REMOVE AND REPLACE
BARBED WIRE FENCE

START PROJECT
STA: 0+00

END PROJECT
STA: 3+00

START BYPASS
STA: 10+00

END BYPASS
STA: 17+83

75' ROW

33' ROW

33' ROW

REMOVE AND REPLACE
BARBED WIRE FENCE

REMOVE AND REPLACE
BARBED WIRE FENCE

INSTALL TEMPORARY BYPASS
WITH 2 - 60" CMP @ 48'

LEGEND

- FINISH GRADE MAJOR CONTOUR
- FINISH GRADE MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING BARBED WIRE FENCE
- NEW BARBED WIRE FENCE
- FIBER OPTIC LINE
- OVERHEAD POWER
- RURAL WATER LINE
- WETLAND / OTHER WATER

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:04:55-06'00'
NORTH DAKOTA

SCOPE OF WORK

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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NOTES

105-P01 UTILITIES:

The vertical and horizontal utility locations shown in the plans are approximate. Plan locations should not be interpreted as exact for bidding or construction purposes. Relocation of power poles shall be coordinated with the utility owner, as needed for the project.

202-P01 REMOVAL OF STRUCTURE:

1. The existing structure to be removed consists of a single span wood beam bridge. The bridge spans a length of 32 feet and has a width of 24 feet. The bridge has gravel as a wear course.
2. All costs for removal and disposal of the structure shall be included in the price bid for "Removal of Structure" including items listed as environmental commitments.

203-010 SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.

203-P01 TOPSOIL:

The topsoil depth was estimated to be 6 inches for the overall average. Topsoil will not be measured separately and will be paid at plan quantity. All costs to salvage, stockpile, and replace the topsoil shall be included in the unit price bid for "Topsoil."

203-P02 COMMON EXCAVATION-TYPE B:

1. Common Excavation-Type B shall not be measured for payment and shall be paid based on plan quantity (Contract Quantity).
2. After removing topsoil from original ground under all roadbed embankment areas, an additional six inches shall be scarified and re-compacted. Benching of the existing roadway in slopes shall be required. A standard detail is included; however, the contractor shall note that all benches shall be deep enough to provide sufficient width to permit placing, spreading, and compaction equipment to operate and each bench shall be thoroughly compacted before additional embankment is placed. All scarifying, re-compacting, and benching shall be included in price bid for "Common Excavation – Type B."
3. Borrow sources shall be stripped of topsoil and vegetation before utilization. Erosion and sediment control devises required at contractor option sites shall be included in the price for "Borrow – Excavation".

210-P01 BOX CULVERT EXCAVATION:

Box Culvert Excavation shall be to the limits shown. All material not considered suitable for the roadbed shall be used to fill in slopes unless the material is deemed waste excavation by the Engineer. It is assumed that this material will be suitable for use in embankment areas. Payment for Box Culvert Excavation to the limits shown on the plans will be per Each. The price bid for Box Culvert Excavation shall include the costs for placement of all material in embankment areas. The embankment shall meet the requirements of Section 203.04 E.3 Compaction Control Type B.

210-P02 CHANNEL EXCAVATION:

Channel Excavation material within the project limits is assumed to be suitable for use in embankment areas. All material not considered suitable for the roadbed shall be used to fill the road in slopes unless the material is deemed waste excavation by the Engineer. Payment for all Channel Excavation to the limits shown on the plans will be Lump Sum. The price bid for Channel Excavation shall include the costs for placement of this material in embankment areas. The embankment shall meet the requirements of section 203.04 E.3 Compaction Control Type B.

210-P03 FOUNDATION FILL-TYPE 1:

Foundation Fill-Type 1 shall be used under the box culvert as shown in the plan details. This material shall be foundation fill per the standard specifications. Foundation Fill – Type I will be measured by the CY based on plan dimensions and shall be paid for based on the quantity shown in the plans.

210-P05 FOUNDATION PREPARATION:

The contractor shall note that flowing or standing water is present in the channel at this location. The water level fluctuates throughout the year. Bidders shall include all costs generated due to site conditions into associated bid items when bidding this project. No additional compensation nor revisions to the completion date will be made due to fluctuations in the water level.

210-P06 WASTE EXCAVATION:

All material from the structural and channel excavation not useable as embankment material shall be removed and disposed of at a site obtained by the Contractor. The Contractor is responsible for obtaining any and all permits needed for waste disposal and shall have full responsibility for complying with the requirements of said permits and with all applicable laws. The Contractor shall be responsible for restoring the waste disposal areas to satisfactory condition and any seeding required. This shall be included in the price bid for excavation with no direct compensation therefore. The contractor shall be required to obtain a site release for the disposal site.

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
NORTH DAKOTA
DATE 2025.07.30 08:05:04-06'00'

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	6	2

NOTES

251-P01 SEEDING:

The “Seeding Class II”, “Temporary Cover Crop”, and “Straw Mulch” quantities shown in Sections 76 and 77 are based on the calculated area between the edge of roadway and the limits of construction, estimated at 10’ beyond earthwork limits. They will be paid for at plan quantity. Additional seeding and mulching for disturbed areas used to facilitate construction or accommodate the Contractor’s method and means will be the responsibility of the Contractor with no additional cost to the project. This includes locations such as staging areas, stockpile sites and any other temporary locations. Seed these areas with the same mixture shown above and mulch.

265-P01 RIRAP GRADE II:

Geosynthetic Filter Fabric Type RR shall be installed under the Riprap and shall be included in the unit price bid for “Riprap Grade II”.

606-P01 PRECAST REINFORCED CONCRETE BOX CULVERT:

1. The contractor may substitute two single cell precast RCBC for the specified double cell. If this substitution is made, the length of the single cell culverts shall be paid as twice the length of the double cell bid price.
2. The end sections shall include a reinforced concrete parapet on the top of the roof and a reinforced concrete cutoff wall below the floor. The parapet shall be one (1) foot by one (1) foot and shall be as long as the barrel sections outside width. The cutoff walls shall be placed under the end of the end sections and shall be a minimum of one (1) foot thick, and three (3) feet, two (2) inches deep. The cutoff walls shall extend three (3) feet beyond the edges of outside box culvert walls.
3. Each precast reinforced concrete box culvert section shall be secured with four tie bolts per joint.
4. The space between single cell precast units shall be filled with controlled density backfill and a cap as shown on the detail.
5. All costs associated with completing these items as detailed shall be included in the price bid for the precast units.
6. Box Culvert Basis of Design

   HL-93 Loading

   Max fill height = 4.5 feet

704-P01 TRAFFIC CONTROL:

Construction signing for the project shall be provided and maintained by the Contractor as per Section 100 sheets 1 and 2, Section 704 of the Standard Specifications, attached Standard Drawings, and the MUTCD Manual.

REGISTERED PROFESSIONAL ENGINEER
MARIA
TOMAC
PE-5939
DATE
2026.01.30 08:05:13 -06'00'
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	6	3

ENVIRONMENTAL NOTES

ENVIRONMENTAL NOTES (EN):

The North Dakota Department of Transportation, the Federal Highway Administration, and Morton County have made environmental commitments to secure approval of this project. The following environmental notes are required to comply with these commitments:

1. EN-1 AQUATIC NUISANCE SPECIES (ANS):

   Notify the North Dakota Game and Fish Department (NDGFD) at least 72 hours prior to any vehicles, vessels, pumps and equipment entering the water, to allow the NDGFD sufficient time to inspect any and all such equipment for ANS. Contact the NDGFD ANS Coordinator, Ben Holen, by phone (701) 368-9117 or e-mail bholen@nd.gov for equipment inspections, or any additional information regarding ANS prevention protocol. Supply the inspection report to the engineer prior to work taking place in the water.

2. EN-2 TEMPORARY WETLAND IMPACT:

   Temporary impact areas within wetlands and other waters are incorporated into the plans for this project. Remove temporary fill placed and sedimentation in wetlands or other waters. Restore these wetlands to preconstruction contours.

3. Permits Required:

   US Army Corps of Engineers – Section 404 Permit

   Status: Not Applied (as of Plan Stamping date)

   ND Department of Environmental Quality – NDPDES Permit

   Status: To be obtained by contractor prior to construction. Owner to be listed as Morton County on the permit.

REGISTERED PROFESSIONAL ENGINEER
MARIA
TOMAC
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DATE
2026.01.30 08:05:23-06'00'
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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ESTIMATED QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	TOTAL
103	0100	CONTRACT BOND	L SUM	1
201	0330	CLEARING AND GRUBBING	L SUM	1
202	0104	REMOVAL OF STRUCTURE	EA	1
202	0312	REMOVE EXISTING FENCE	LF	865
202	0350	REMOVAL OF TEMPORARY BYPASS	EA	1
203	0102	COMMON EXCAVATION - TYPE B	CY	1,659
203	0109	TOPSOIL	CY	727
203	0140	BORROW-EXCAVATION	CY	1,405
210	0050	BOX CULVERT EXCAVATION	EA	1
210	0127	CHANNEL EXCAVATION	L SUM	1
210	0209	FOUNDATION FILL	TONS	1,023
210	0225	FOUNDATION FILL-TYPE 1	TONS	571
210	0405	FOUNDATION PREPARATION - BOX CULVERT	L SUM	1
216	0100	WATER	M GAL	51
251	0200	SEEDING CLASS II	ACRE	1.88
251	1000	WETLAND SEED	ACRE	0.08
251	2000	TEMPORARY COVER CROP	ACRE	1.88
253	0101	STRAW MULCH	ACRE	3.76
256	0200	RIPRAP - GRADE II	CY	127
260	0200	SILT FENCE SUPPORTED	LF	44
260	0201	REMOVE SILT FENCE SUPPORTED	LF	44
261	0112	FIBER ROLLS 12IN	LF	1,405
261	0113	REMOVE FIBER ROLLS 12IN	LF	314
262	0100	FLOTATION SILT CURTAIN	LF	15
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	15
350	0500	GRAVEL SURFACING	TON	587
606	3409	DBL 14FT X 9FT PRECAST RCB CULVERT	LF	60
606	7409	DBL 14FT X 9FT PRECAST RCB END SECTION	EA	2
702	0100	MOBILIZATION	L SUM	1
704	1000	TRAFFIC CONTROL SIGNS	UNIT	416
704	1052	TYPE III BARRICADE	EA	2
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	620
752	0100	FENCE BARBED WIRE 3 STRAND	LF	865
754	0803	OBJECT MARKERS - TYPE III	EA	4
900	1000	TEMPORARY STREAM DIVERSION	EA	1

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BASIS OF ESTIMATE

203-0102	**COMMON EXCAVATION - TYPE B**			
	MAINLINE EXCAVATION		136	CY
	MAINLINE EMBANKMENT		1,092	CY
	BYPASS EXCAVATION		117	CY
	BYPASS EMBANKMENT		567	CY
		BORROW	1,405	CY
203-0109	**TOPSOIL (CY)**			
	6 IN EXISTING TOPSOIL + GRAVEL STRIPPED		766	CY
	6 IN TOPSOIL REPLACED		727	CY
		WASTE	39	CY
210-0210	**FOUNDATION FILL**			
	TOTAL FOUNDATION FILL		436	CY
			1,023	TONS
210-0225	**FOUNDATION FILL - TYPE 1**			
	TOTAL FOUNDATION FILL TYPE 1		244	CY
			571	TONS
216-0100	**WATER**			
	10 GAL/CY FOR EMBANKMENT & FOUNDATION FILL		21	MGAL
	50 MGAL/MILE FOR DUST CONTROL		13	MGAL
	30 GAL/TON - GRAVEL SURFACING		18	MGAL
			51	MGAL
350-0501	**GRAVEL SURFACING**		587	TON

ASSUMPTIONS

ITEM	*CONVERSION FACTOR*	
FOUNDATION FILL	1.875	*TON/CY*
AGGREGATE BASE CL 5	1.875	*TON/CY*
FILL FACTOR	1.25	*PER CY*
CUT FACTOR	1.00	*PER CY*

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:05:33-06'00'
NORTH DAKOTA

BASIS OF ESTIMATE

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	20	1

INTERSTATE ENGINEERING
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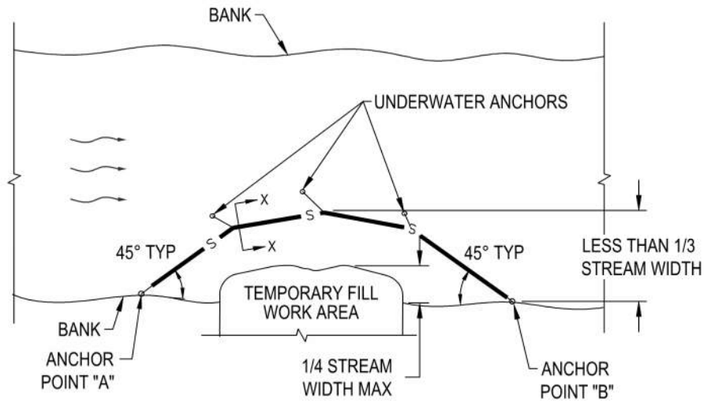
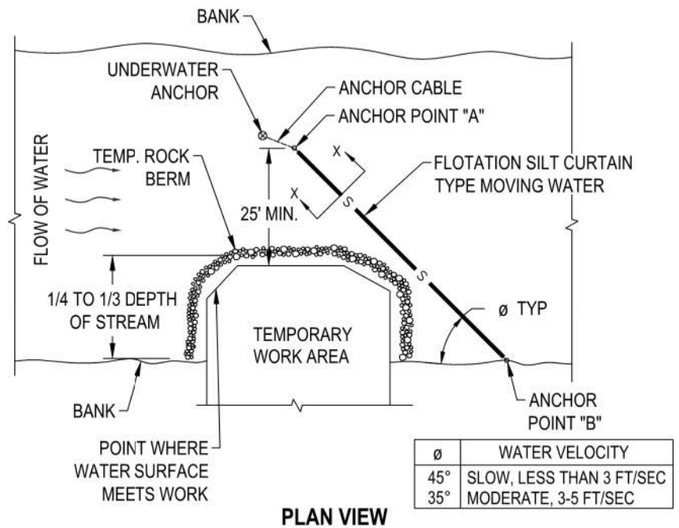
TYPICAL INSTALLATIONS



PLAN VIEW
FLOTATION SILT CURTAIN - TYPE WORK AREA

DESIGN GUIDELINES:
When temporary work encroaches less than 1/4 of the width of stream.

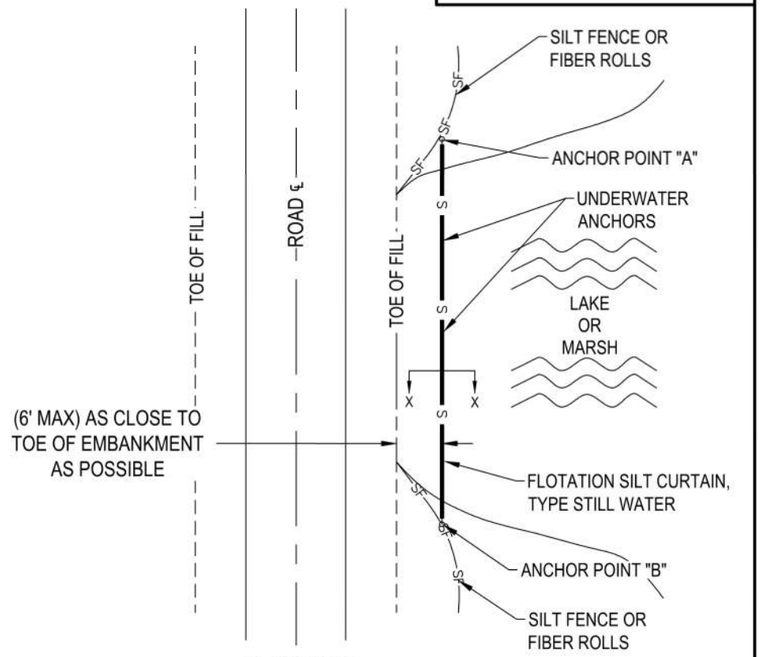


ø	WATER VELOCITY
45°	SLOW, LESS THAN 3 FT/SEC
35°	MODERATE, 3-5 FT/SEC

PLAN VIEW
FLOTATION SILT CURTAIN - TYPE MOVING WATER

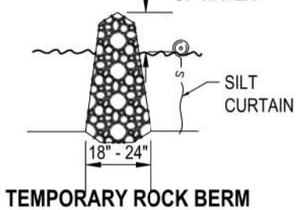
DESIGN GUIDELINES:
When temporary work encroaches more than 1/4 but less than 1/3 width of the stream.
For narrow waterways, the curtain may be placed 1 foot above the bottom of waterway to allow water to flow.

* In areas where the plans call for riprap at the bridge, provide a temporary rock berm. Include all costs for temporary rock berm in price bid for the "Riprap".

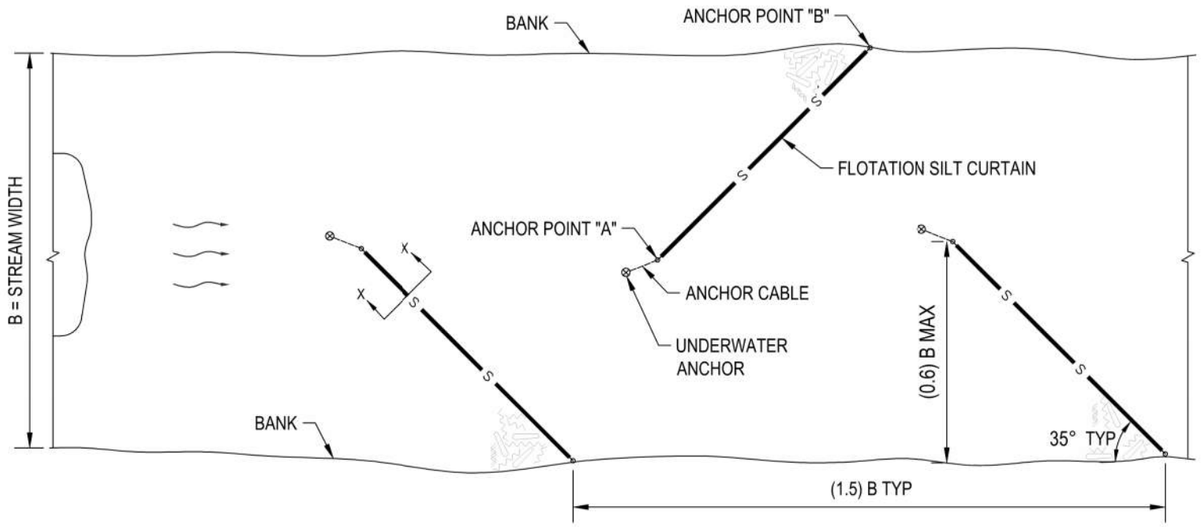


PLAN VIEW
FLOTATION SILT CURTAIN - TYPE STILL WATER

DESIGN GUIDELINES:
The silt curtain shall extend onto shore and shall also be anchored there.

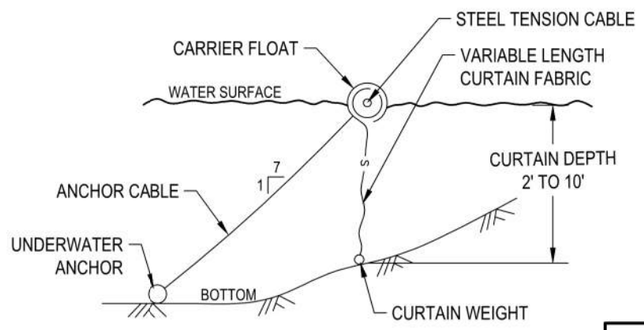


TEMPORARY ROCK BERM



PLAN VIEW
FLOTATION SILT CURTAIN - TYPE HERRING BONE PATTERN

DESIGN GUIDELINES:
When temporary work encroaches more than 1/3 width of the stream Or where stream width doesn't allow use of Type Moving Water



SECTION X-X
FLOTATION SILT CURTAINS

NOTE:
Maximum water velocity for moving water = 5 ft/sec.

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:05:41-06'00'
NORTH DAKOTA

GENERAL DETAILS

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.01

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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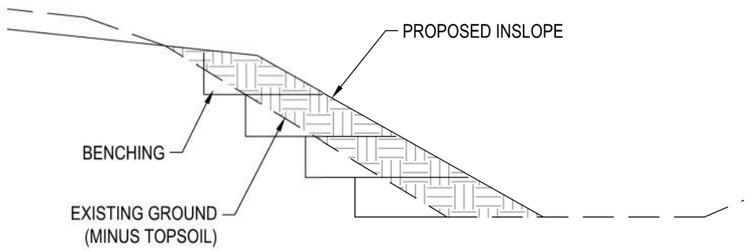
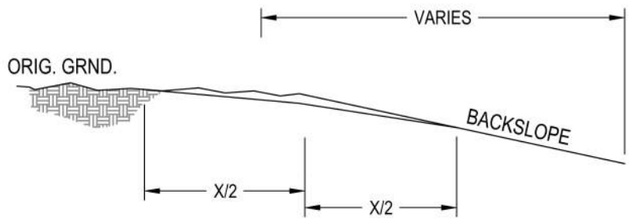


BENCHING TYPICAL SECTION
Scale: NTS



* BACKSLOPE ROUNDING WHERE X = 10' UNLESS RESTRICTED BY HEIGHT OF BACKSLOPE

BACK SLOPE ROUNDING
Scale: NTS

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:05:49-06'00'
NORTH DAKOTA

GENERAL DETAILS

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.01

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	30	1

INTERSTATE ENGINEERING
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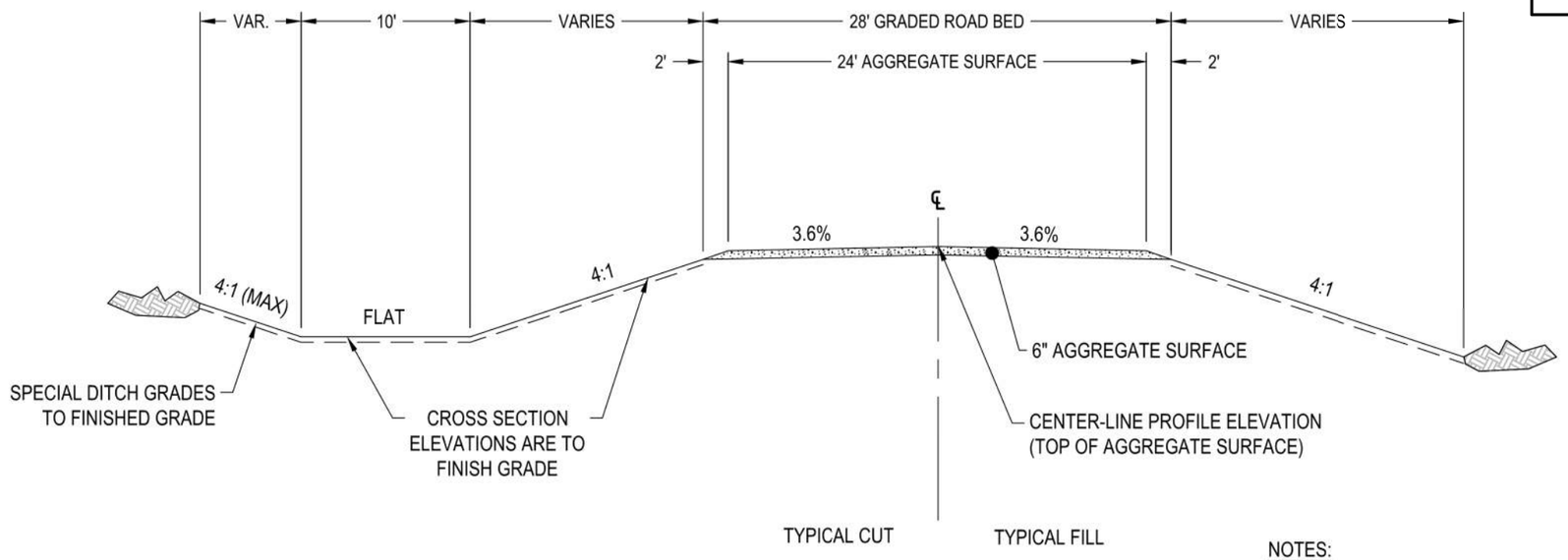
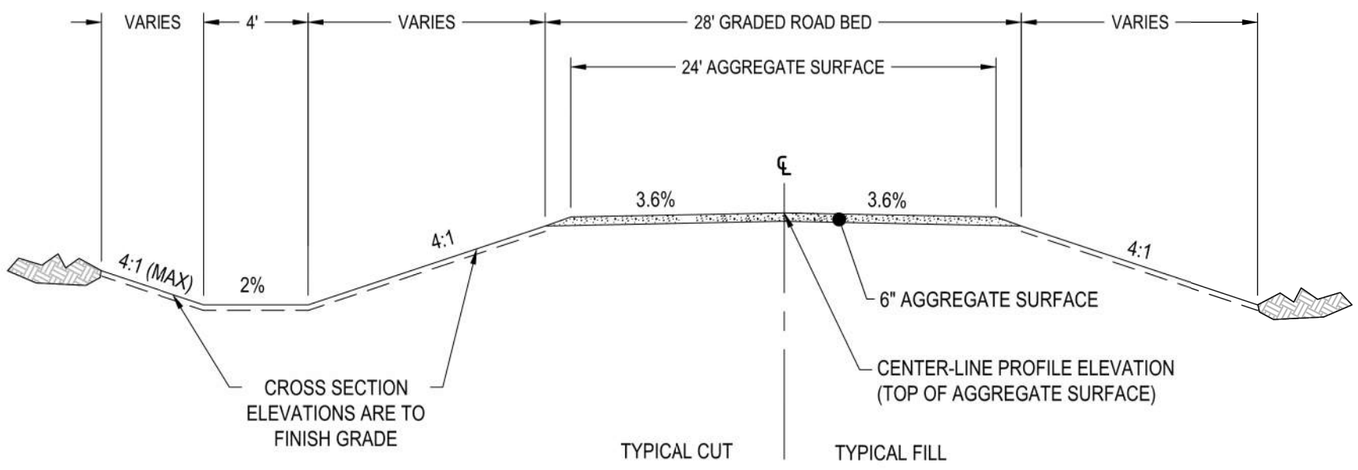


ROADWAY SYMMETRICAL ABOUT CENTERLINE

PROPOSED ROAD TYPICAL SECTION
NTS

NOTES:
1. SLOUGH WIDTH IS USED FOR ESTIMATING PURPOSES ONLY. ACTUAL SLOUGH WIDTH MAY VARY IN THE FIELD.
2. DITCH BOTTOM ELEVATIONS AND GRADES SHOWN ON CROSS SECTIONS ARE FINISH GRADE.



PROPOSED BYPASS TYPICAL SECTION
NTS

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:05:57-06'00'
NORTH DAKOTA

TYPICAL SECTIONS

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.01

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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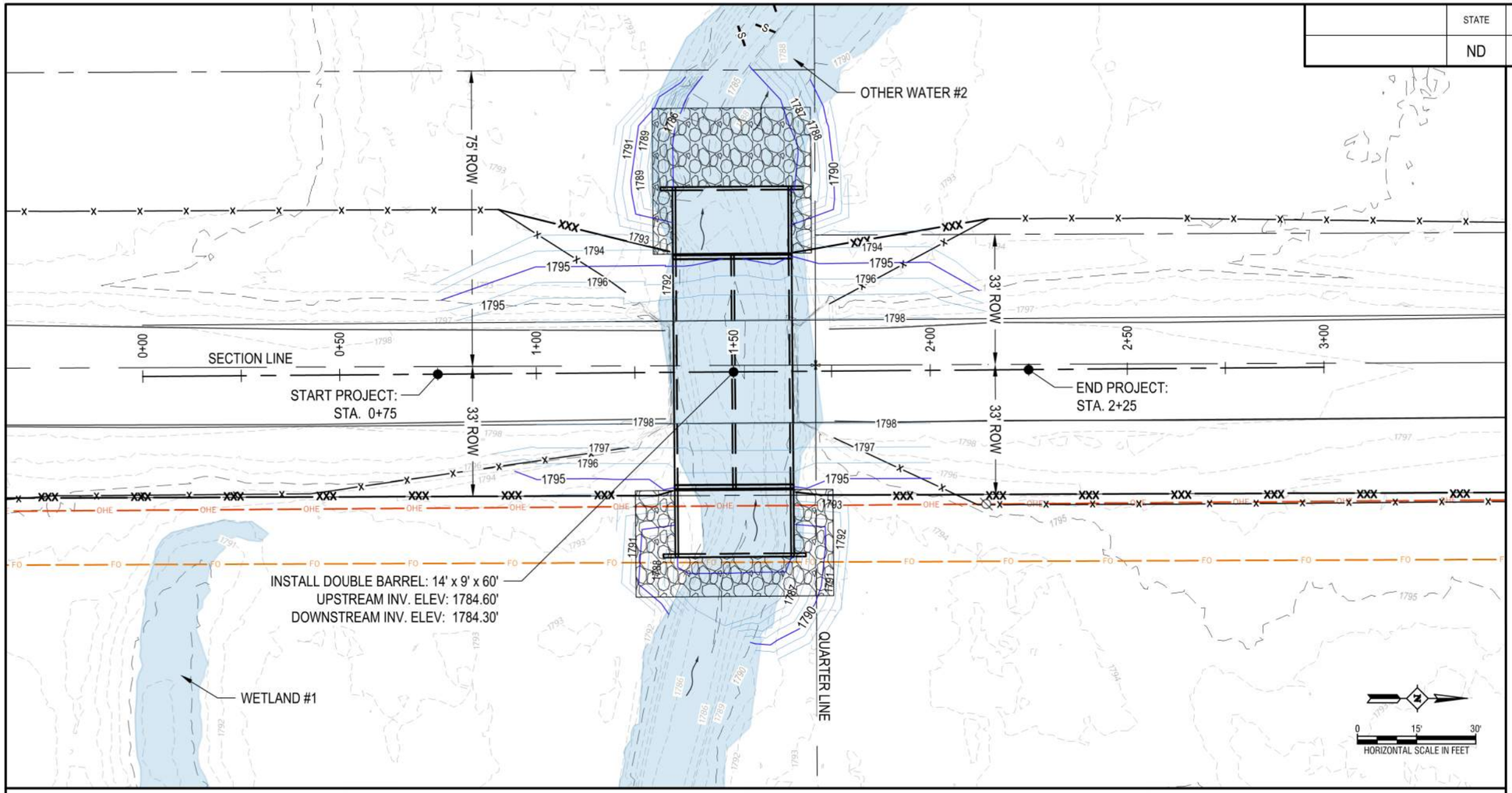
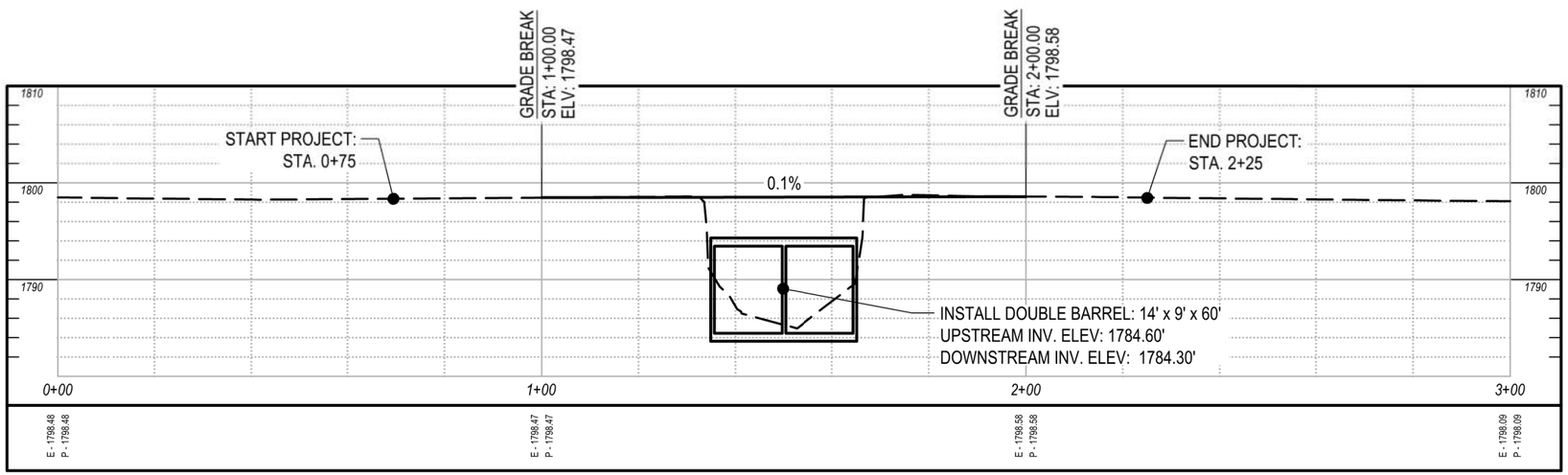


LEGEND

- FINISH GRADE MAJOR CONTOUR
- FINISH GRADE MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING BARBED WIRE FENCE
- NEW BARBED WIRE FENCE
- FIBER OPTIC LINE
- OVERHEAD POWER
- RURAL WATER LINE
- WETLAND / OTHER WATER



REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:06:05 -06'00'
NORTH DAKOTA

PLAN & PROFILE
MAINLINE

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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INTERSTATE ENGINEERING
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OTHER WATER #2
QUARTER LINE
75' ROW
33' ROW
SECTION LINE
BP: 10+00.00
Mid: 11+07.08
PT: 12+14.16
PC: 12+29.19
Mid: 12+97.84
WETLAND #1
PT: 13+66.49
PC: 14+16.49
PT: 14+81.39
PC: 15+75.22
PT: 15+46.28
Mid: 16+67.31
EP: 17+82.88
TEMPORARY INSTALL: 2 - 60" CMP
UPSTREAM INV. ELEV: 1786.00'
DOWNSTREAM INV. ELEV: 1785.70'

PVI STA:11+37.34
PVI ELEV:1799.70
K:9.82
LVC:58.06
BVCS: 11+08.31
BVCE: 1799.78
EVCS: 11+66.37
EVCE: 1797.90

PVI STA:12+32.77
PVI ELEV:1793.80
K:19.55
LVC:119.61

PVI STA:15+39.80
PVI ELEV:1793.60
K:52.55
LVC:163.14

PVI STA:16+91.13
PVI ELEV:1798.20
K:15.00
LVC:47.64

GRADE BREAK
STA: 10+27.00
ELV: 1800.00

BVCS: 11+72.96
BVCE: 1797.50
EVCS: 12+92.57
EVCE: 1793.76
BVCS: 14+58.23
BVCE: 1793.65
EVCS: 16+21.37
EVCE: 1796.08
BVCS: 16+67.31
BVCE: 1797.48
EVCS: 17+14.95
EVCE: 1798.17

GRADE BREAK
STA: 17+66.00
ELV: 1798.10

-0.27%
-6.18%
-0.07%
3.04%
-0.14%

START BYPASS:
STA 10+27

TEMPORARY INSTALL: 2 - 60" CMP
UPSTREAM INV. ELEV: 1786.00'
DOWNSTREAM INV. ELEV: 1785.70'

END BYPASS:
STA. 17+66

1810 1805 1800 1795 1790 1785

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 17+82.88

E - 1800.01 P - 1800.01
E - 1799.66 P - 1799.66
E - 1793.96 P - 1793.96
E - 1793.70 P - 1793.70
E - 1789.31 P - 1789.31
E - 1793.84 P - 1793.84
E - 1795.45 P - 1795.45
E - 1797.78 P - 1797.78
E - 1798.20 P - 1798.20

LEGEND

- FINISH GRADE MAJOR CONTOUR
- FINISH GRADE MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING BARBED WIRE FENCE
- NEW BARBED WIRE FENCE
- FIBER OPTIC LINE
- OVERHEAD POWER
- RURAL WATER LINE
- WETLAND / OTHER WATER

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:06:14 -06'00'
NORTH DAKOTA

PLAN & PROFILE
BYPASS

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	75	1

Wetland Impact Table

Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impact: Wetland Impacts Acre(s) Temp.	Perm. (Fill/Drain)	Perm. (Cut)	USFWS Easement Impacts Acre(s) Temp.	Perm.	Wetland Mitigation: Mitigation Proposed EO 11990	USACE	USFWS	USACE/11990 Bank Location	Acre(s)	11990 Bank Location	Acre(s)	USFWS Bank Location	Acre(s)	Onsite Mitigation Method: Mitigation Location; Ratio	Ditch Shift Acre(s)	Onsite Acre(s)	Onsite Constructed Location: Onsite Constructed Site #	Onsite Constructed Size Acre(s)
1	Sec. 27. T139N, R83W	Linear	Natural	Y	0.020	0.000	0	0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Sec.28, T139N, R83W	Linear	Natural	Y	0.000	0.000	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Sec.27, T139N, R83W	Linear	Natural	Y	0.000	0.000	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Sec.27, T139N, R83W	Linear	Natural	Y	0.000	0.000	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Totals	**0.020**	**0.000**										**0**				**0.000**	**0.000**		**0.000**

Other Waters and Streams Impact Table

Number	Location	Type	Feature	USACE Jurisdictional[1]	Impacts to Other Waters: Acres Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Linear Feet Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Other Water Mitigation: Mitigation Proposed EO 11990	USACE	USFWS	USACE Mitigation Bank Location	Acre(s)	Onsite Mitigaiton Method Mitigation Location; ratio	Acre(s)	Onsite Constructed Location: Onsite Constructed Site #	Onsite Constructed Size Acre(s)
2	Secs.27 & 28, T139N, R83W	Stream	Natural	Y	0.042	0.010	0.062	61.000	14.000	90.000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				Totals	**0.042**	**0.010**	**0.062**	**61.0**	**14.0**	**90.0**					**0.000**		**0.000**		**0.000**

[1] It is assumed that all waters are jurisdictional.

Impact Summary Table

Permanent Impact Summary: Wetland Type	Total Acre(s)	Temporary Impacts and additional information: WaterType	Total Acre(s)
Natural/JD (Fill/Drain)	0.000	Temporary Wetland JD	0.020
Natural/Non-JD (Fill/Drain)	0.000	Non-JD Wetland Temporary	0.000
Artificial/JD (Fill/Drain)	0.000		
Artificial /Non-JD (Fill/Drain))	0.000	Permanent OW	0.072
Total	**0.000**	Temporary OW	0.042
JD Natural (Cut)	0.000	Permanent OW-d	0.000
JD Artificial (Cut)	0.000	Temporary OW-d	0.000
Non-JD Natural (Cut)	0.000		
Non-JD Artificial (Cut)	0.000		
Total	**0.000**		

Mitigation Summary Table

	Location	Ditch Shift Acre(s)	Onsite Acre(s)	11990 Bank Acre(s)	USACE/11990 Bank Acre(s)	USFWS Bank Acre(s)
USACE Only	Onsite	0.000	0.000			
EO 11990 Only	Mitigation Bank X	0.000	0.000	0.000		
USACE/ 11990	Onsite		0.000			
USFWS						
	Total	**0**	**0**	**0**	**0**	**0**

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE 2026.01.30 08:06:21-06'00'
NORTH DAKOTA

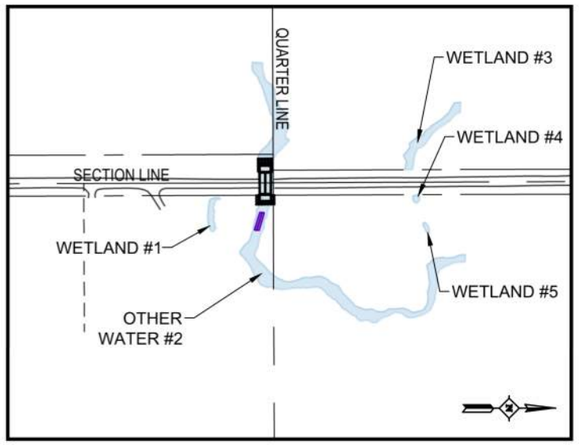
WETLAND IMPACTS

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

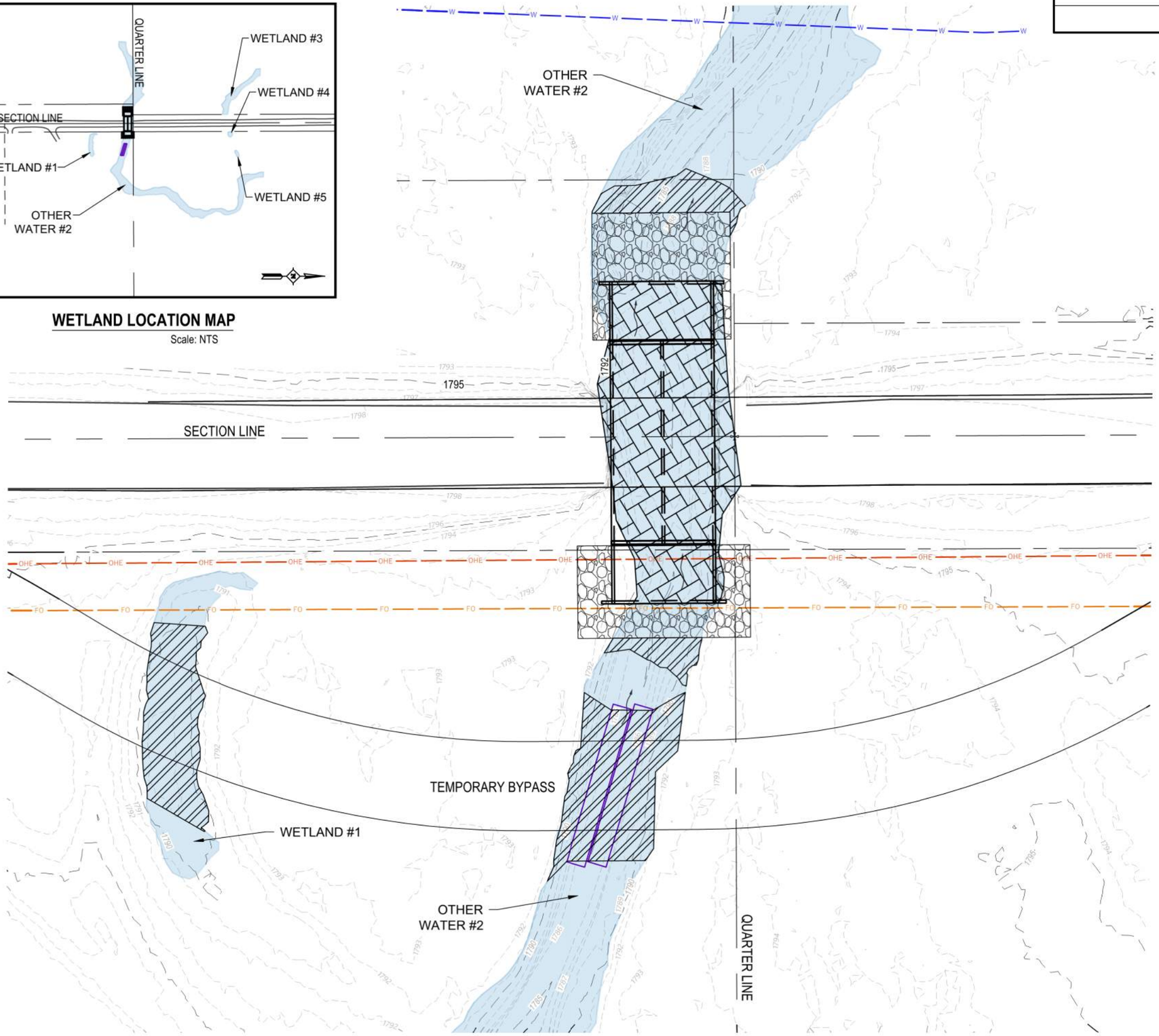
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	75	2

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.



WETLAND LOCATION MAP
Scale: NTS

NOTES:
Wetland delineation by Meadowlark Environmental collected in NAD83 UTM, Zone 14N, meters.
Converted to NAD83 ND State Plane South, feet.
Correction applied from Grid coordinates to Ground.



LEGEND

- WETLAND / OTHER WATER
- PERMANENT IMPACTS (0.072 acres)
- TEMPORARY IMPACTS (0.062 acres)
- RIPRAP (0.042 acres)

0 15' 30'
HORIZONTAL SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE: 2026.01.30 08:06:29-06'00'
NORTH DAKOTA

WETLAND IMPACTS

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	76	1

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

FLOTATION SILT CURTAIN

BP: 10+00.00
Mid: 11+07.08
PT: 12+14.16
PC: 12+29.19
Mid: 12+97.84
PT: 13+66.49
PC: 14+16.49
Mid: 14+81.39
PT: 15+46.28
PC: 15+75.22
Mid: 16+90.05
EP: 17+82.88

LEGEND

- 12" FIBER ROLL
- SF — SILT FENCE UNSUPPORTED
- S — FLOTATION SILT CURTAIN
- TEMPORARY SEEDING AREA

0 30' 60'
HORIZONTAL SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:06:38-06'00'
NORTH DAKOTA

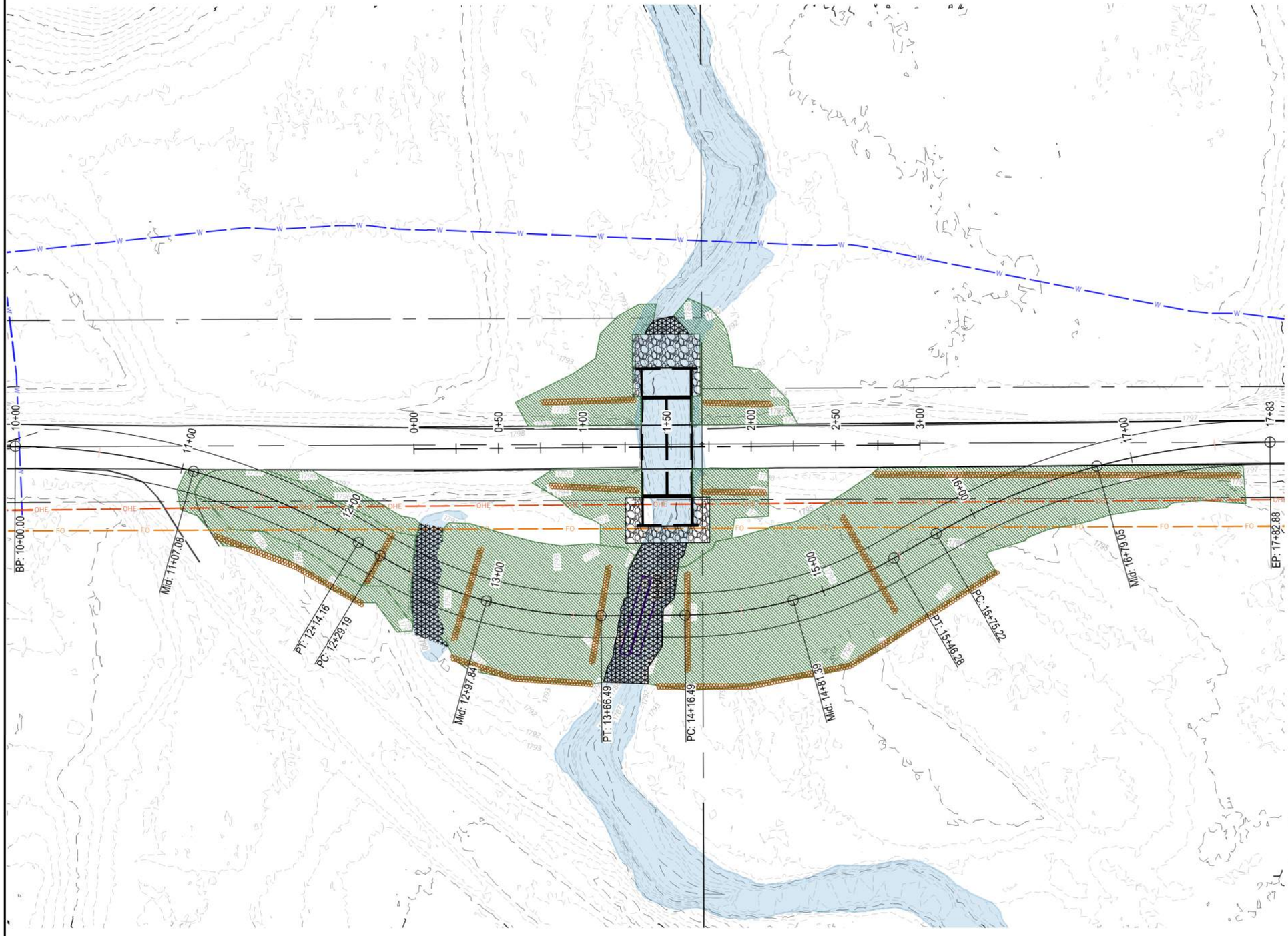
TEMPORARY EROSION CONTROL

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	77	1

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.



LEGEND

- 12" FIBER ROLL
- RIP RAP
- SEEDING CLASS II
- WETLAND SEEDING

0 15' 30'
HORIZONTAL SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:06:47-06'00'
NORTH DAKOTA

PERMANENT EROSION CONTROL

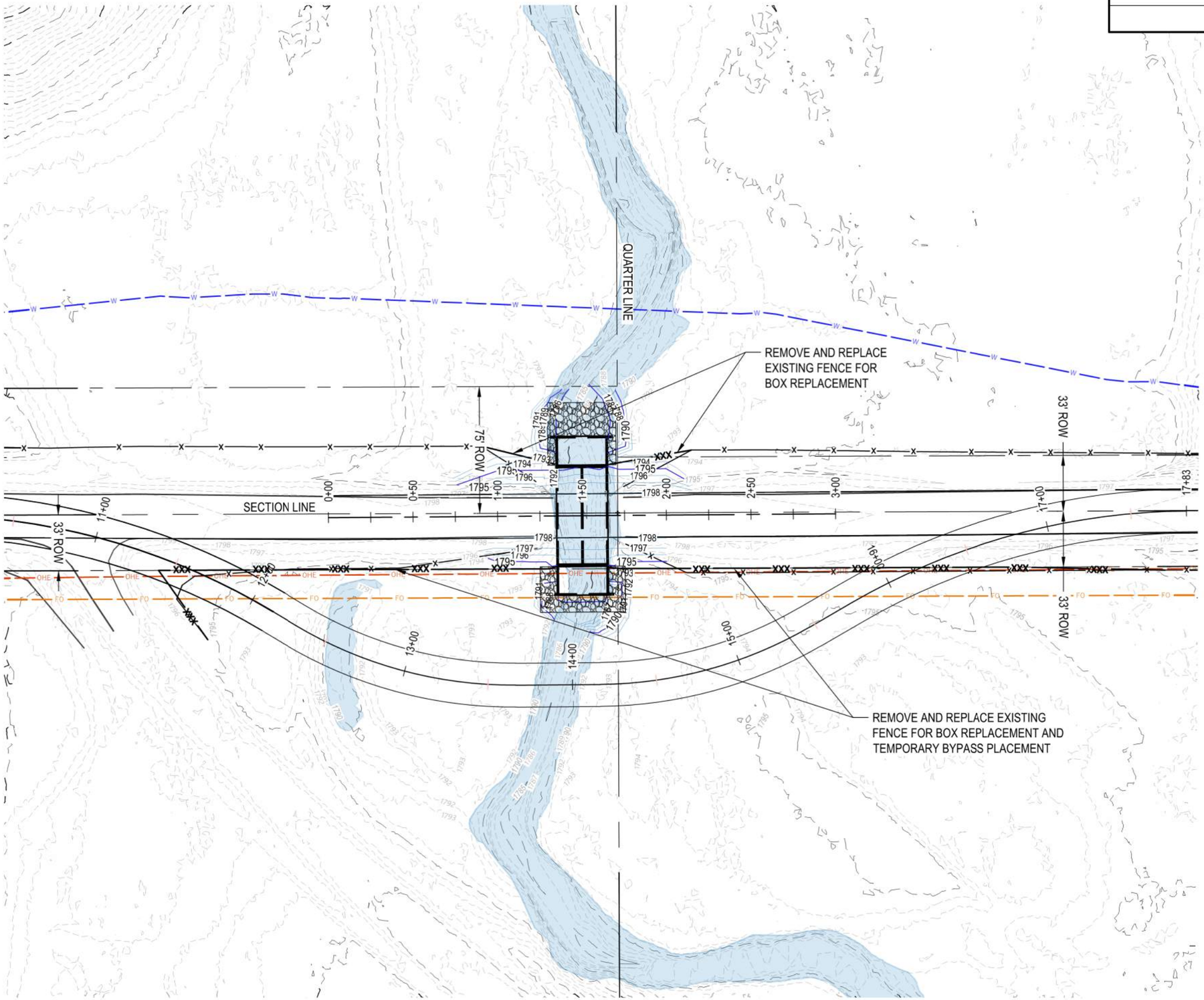
BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

X:\2025\CR\00\CR25-00-067_Sweet_Briar_School_Box Culvert\20_CADD_CR2500067\060_Design\CR2500067_DESIGN.dwg 1/29/2026

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	80	1

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.



LEGEND

- EXISTING BARBED FENCE
- NEW 3 STRAND BARBED FENCE

0 30' 60'
HORIZONTAL SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:06:58-06'00'
NORTH DAKOTA

FENCING LAYOUT

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	81	1

INTERSTATE ENGINEERING
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HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
		MAINLINE	
BOP	0+00	423555.6927	1804827.3479
EOP	3+00	423855.6835	1804825.0029
		BYPASS	
BOP	10+00.00	423319.0665	1804825.8024
PT	12+14.16	423522.8061	1804882.9968
PC	12+29.19	423535.6861	1804890.7417
PT	13+66.49	423666.4710	1804926.4850
PC	14+16.49	423716.4695	1804926.0942
PT	15+46.28	423840.2430	1804892.1864
PC	15+75.22	423865.2565	1804877.6324
EP	17+83	423840.2430	1804892.1864

CURVE DATA

ARC DEFINITION
DELTA = 30°40'36" (RT)
LENGTH = 214.16'
RADIUS = 400.00'
DELTA = 31°28'01" (LT)
LENGTH = 137.30'
RADIUS = 250.00'
DELTA = 29°44'42"
LENGTH = 129.79
RADIUS = 250.00'
DELTA = 29°44'42"
LENGTH = 207.66'
RADIUS = 400.00'

US PUBLIC LAND SURVEY DATA

DESC.	SEC-TWP-RGE	NORTHING	EASTING
NW COR	27-139-83	426368.2220	1804814.5040
W QTR COR	27-139-83	423726.6430	1804824.4665
SW COR	27-139-83	421085.0640	1804834.4290

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV
CP #1	424375.3220	1804793.9780	1797.91
CP #2	423353.9160	1804855.1330	1799.79
CP #3	422341.0370	1804868.9570	2478.92

☐ ASSUMED COORDINATES

☒ ALL COORDINATES ON THIS SHEET ARE MORTON COUNTY GROUND COORDINATES. THEY ARE DERIVED FROM THE NAD83 (2011) REFERENCE FRAME; NORTH DAKOTA SOUTH ZONE (GRID), MULTIPLIED BY A COMBINATION FACTOR (cf) = 0.9998485 TO CONVERT TO GROUND (International Foot)

DATE OF SURVEY: 07-15-25

☒ NAVD - 88
☐ NGVD - 29

☐ GEOID 09
☒ GEOID 18

REGISTERED PROFESSIONAL LAND SURVEYOR
REID HASTINGS
LS-4161
DATE
2026.01.29 15:24:56-06'00'
NORTH DAKOTA

SURVEY COORDINATES

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.01

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	100	1

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES		28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)		18	
G20-2-48	**48"x24"**	**END ROAD WORK**	**2**	**26**	**52**
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR		18	
G20-50a-72	72"x36"	ROAD WORK NEXT __ MILES RT & LT ARROWS		43	
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW		36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE $80 WHEN WORKERS PRESENT		59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)		7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP		32	
R1-2-60	60"x60"	YIELD		29	
R2-1-36	36"x48"	SPEED LIMIT __ (Portable only)		30	
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**2**	**39**	**78**
R2-1aP-24	24"x18"	MINIMUM FEE $80 (Mounted on Speed Limit post)		10	
R3-2-48	48"x48"	NO LEFT TURN		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)		14	
R7-1-12	12"x18"	NO PARKING ANY TIME		11	
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	**48"x30"**	**ROAD CLOSED (Mounted on barricade)**	**2**	**12**	**24**
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)		12	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)		15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT		35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT		35	
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT		35	
W1-6-48	**48"x24"**	**ONE DIRECTION LARGE ARROW**	**2**	**26**	**52**
W3-1-48	48"x48"	STOP AHEAD		35	
W3-3-48	48"x48"	SIGNAL AHEAD		35	
W3-4-48	48"x48"	BE PREPARED TO STOP		35	
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**2**	**35**	**70**
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER LINE		35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT or _ MILE		35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT or _ MILE		35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W13-1P-30	30"x30"	__ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)		14	
W14-3-64	64"x48"	NO PASSING ZONE		28	
W16-2P-30	30"x24"	__ FEET PLAQUE (Mounted on warning sign post)		10	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**4**	**35**	**140**
W20-2-48	48"x48"	DETOUR AHEAD or __ FT or _ MILE		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT or _ MILE		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or __ FT or _ MILE		35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or _ MILE		35	
W20-7-48	48"x48"	FLAGGER		35	
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back		5	
W20-52P-54	54"x12"	NEXT __ MILES (Mounted on warning sign post)		12	
W21-1-48	48"x48"	WORKERS		35	
W21-2-48	48"x48"	FRESH OIL		35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT or _ MILE		35	
W21-5-48	48"x48"	SHOULDER WORK		35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED		35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or _ MILE		35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-6-48	48"x48"	SURVEY CREW		35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT		35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY		35	
W21-52-48	48"x48"	PAVEMENT BREAKS		35	
W21-53-48	48"x48"	RUMBLE STRIPS AHEAD		35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK		35	
W24-1-48	48"x48"	DOUBLE REVERSE CURVE		35	

SPECIAL SIGNS

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**416**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	FLAGGING	MHR	
704-1048	PORTABLE RUMBLE STRIPS	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1052	**TYPE III BARRICADES**	**EACH**	**2**
704-1060	DELINEATOR DRUMS	EACH	
704-1065	TRAFFIC CONES	EACH	
704-1067	TUBULAR MARKERS	EACH	
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1080	STACKABLE VERTICAL PANELS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1500	OBLITERATION OF PVMT MK	SF	
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:07:03 -06'00'
NORTH DAKOTA

WORK ZONE TRAFFIC CONTROL

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.01

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	100	2

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

1. W20-1-48 "Road Work 1000 Feet"
   Post Mounted
2. W3-5-48 "Speed Reduction Ahead"
   Post Mounted
3. R2-1-48 "Speed Limit 25 MPH"
   Post Mounted
4. R11-2-48 "Road Closed"
   Barricade Mounted
5. W1-6-48 "Large Arrow"
   Barricade Mounted
6. G20-2-48 "End Road Work"
   Post Mounted
7. W20-1-48 "Road Work 1.5 miles"
   Post Mounted

NOTES:

1. The construction signing layout is for informational purposes only. Traffic control signing shall be installed as per MUTCD manual and/or standard drawings.
2. If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual. http://www.dot.nd.gov/
3. Coordinate with Morton County Highway Department to issue a public notice if required by the County Engineer.

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:07:10-06'00'
NORTH DAKOTA

N

WORK ZONE TRAFFIC CONTROL

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.01

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	105	1

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

Utility Conflict & Resolution - Table

CR 25-00-067

UE ID# UR ID# PR ID#	Beginning Point				Ending Point			Type: Linear (RT/LT), Crossing, or Point Location	Roadway (Alignment/Chain)	Approx. Qty	Unit	Max Excavation Cut (-) / Fill (+) Feet	Encounter Level	Utility Encounter Comments	Utility Company	Type of Facility	UE Type	
	Sta.	Offset (FT)	RT or LT		Sta.	Offset (FT)	RT or LT										Protect in Place	Conflict
MIWEWS-01	10+00		-	to			-	Crossing	County Rd 83 (Bypass)	30'	FT	0'	Level 1		Missouri West Water System	Underground Water	X	
MIWEWS-02	10+10	118.0	Lt	to	17+45	80'	Lt	LT	County Rd 83 (Bypass)	735'	FT	0'	Level 1		Missouri West Water System	Underground Water	X	
MOELCO-03	11+03	24'	Rt	to	17+50	33'	Rt	Crossing	County Rd 83 (Bypass)	647'	FT	-0.5'	Level 4		Mor-Gran-Sou	Overhead Power Line		X
MOELCO-04	11+40	12'	Rt	to	-	-	-	Point	County Rd 83 (Bypass)	1.0	EA	+1.7'	Level 4	Power Pole	Mor-Gran-Sou	Power Pole		X
MOELCO-05	14+88	60'	Lt	to	-	-	-	Point	County Rd 83 (Bypass)	1.0	EA	0'	Level 4	Power Pole	Mor-Gran-Sou	Power Pole		X
MOELCO-06	17+50	33'	Rt	to				Point	County Rd 83 (Bypass)	1.0	EA	0'	Level 4	Power Pole	Mor-Gran-Sou	Power Pole		X
BECOCO-07	11+25	31'	Rt	to	16+80	38'	Rt	Crossing	County Rd 83 (Bypass)	555'	FT	+4.0'/-4.0'	Level 4		BEK Communications	Fiber Optic Line		X

Utility Encounter Level Designations	
UE Level	**Description**
Level 1	Utility not affected by proposed improvements, no impacts.
Level 2	Construction activities will occur above and/or below the utility line. No relocation needed for the utility but may need precautions to protect the utility in place during construction activities.
Level 3	Utility permanently impacted by proposed improvements and requires vertical adjustment only. Horizontal location of utility will not change.
Level 4	Utility permanently impacted by proposed improvements and requires complete relocation. Vertical and horizontal location of utility will change.

Utility Company Information			
Utility Company	**Contact Name**	**Phone Number**	**Email**
Missouri West Water System	Dustan Hadley	(701) 202-2466	dhadley@missouriwest.com
Mor Gran Sou Electric Cooperative	Jason Helgeson	(701) 220-0596	jhelgeson@morgransou.com
BEK Communications		(701) 475-2361	

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:07:18-06'00'
NORTH DAKOTA

UTILITY CONFLICT

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	105	2

INTERSTATE ENGINEERING
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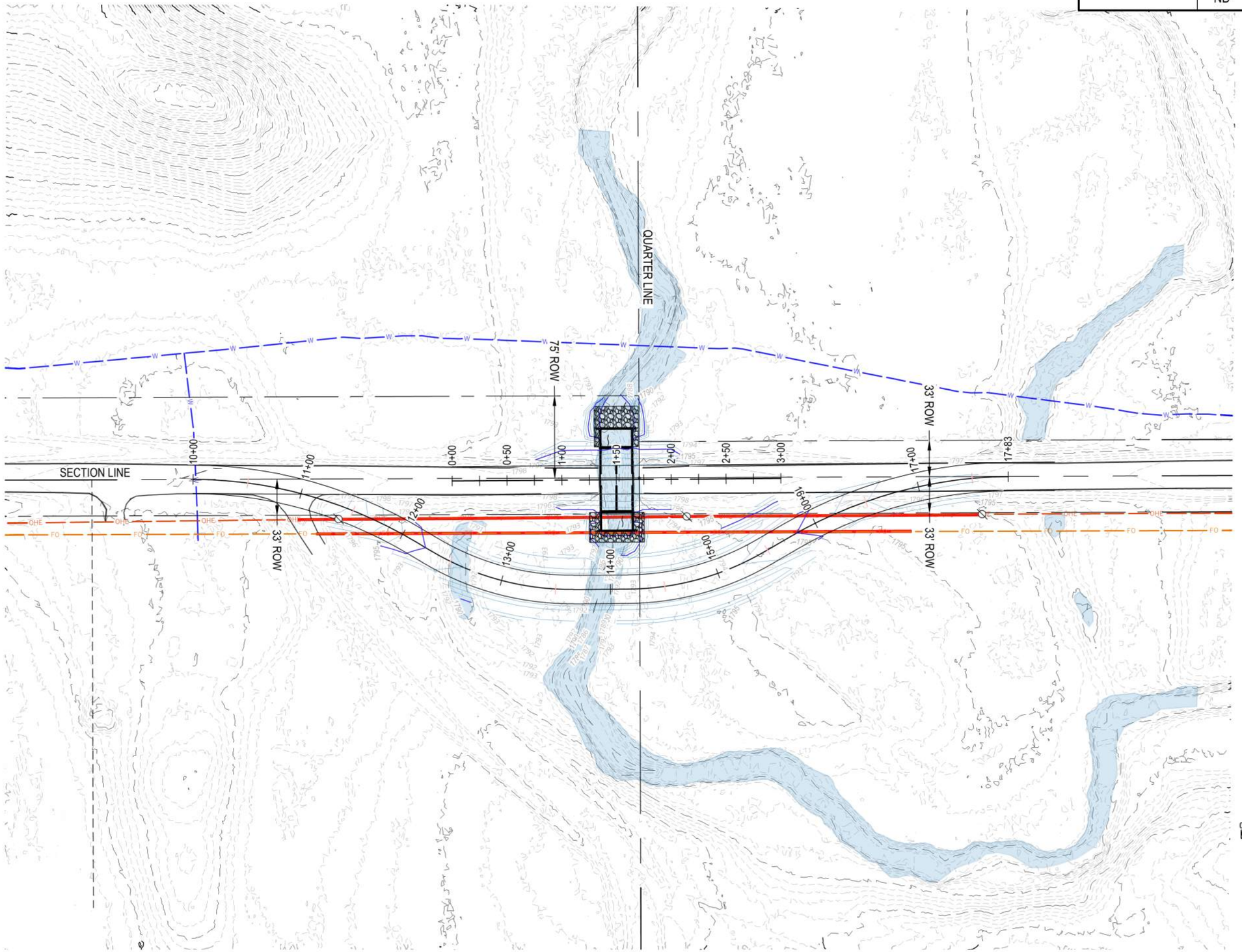

SHEET NOTES

1. Utility locations shown on the plans are approximate. It will be the contractor's responsibility to contact all utilities for verification of locations prior to construction in any area. The contractor will be liable for any costs resulting from damage to utilities or pipelines.

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4

FO — BEK FIBER OPTIC
OHE — MOR-GRAN-SOU OVERHEAD LINE
W — MISSOURRI WEST WATER SYSTEM

N

0 30' 60'
HORIZONTAL SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
NORTH DAKOTA
DATE
2026.01.30 08:07:26-06'00'

UTILITY CONFLICT

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

X:\2025\CR\00\CR25-00-067_Sweet_Briar_School_Box Culvert\20_CADD_CR2500067\060_Design\CR2500067_DESIGN.dwg 1/29/2026

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	170	1

INTERSTATE ENGINEERING
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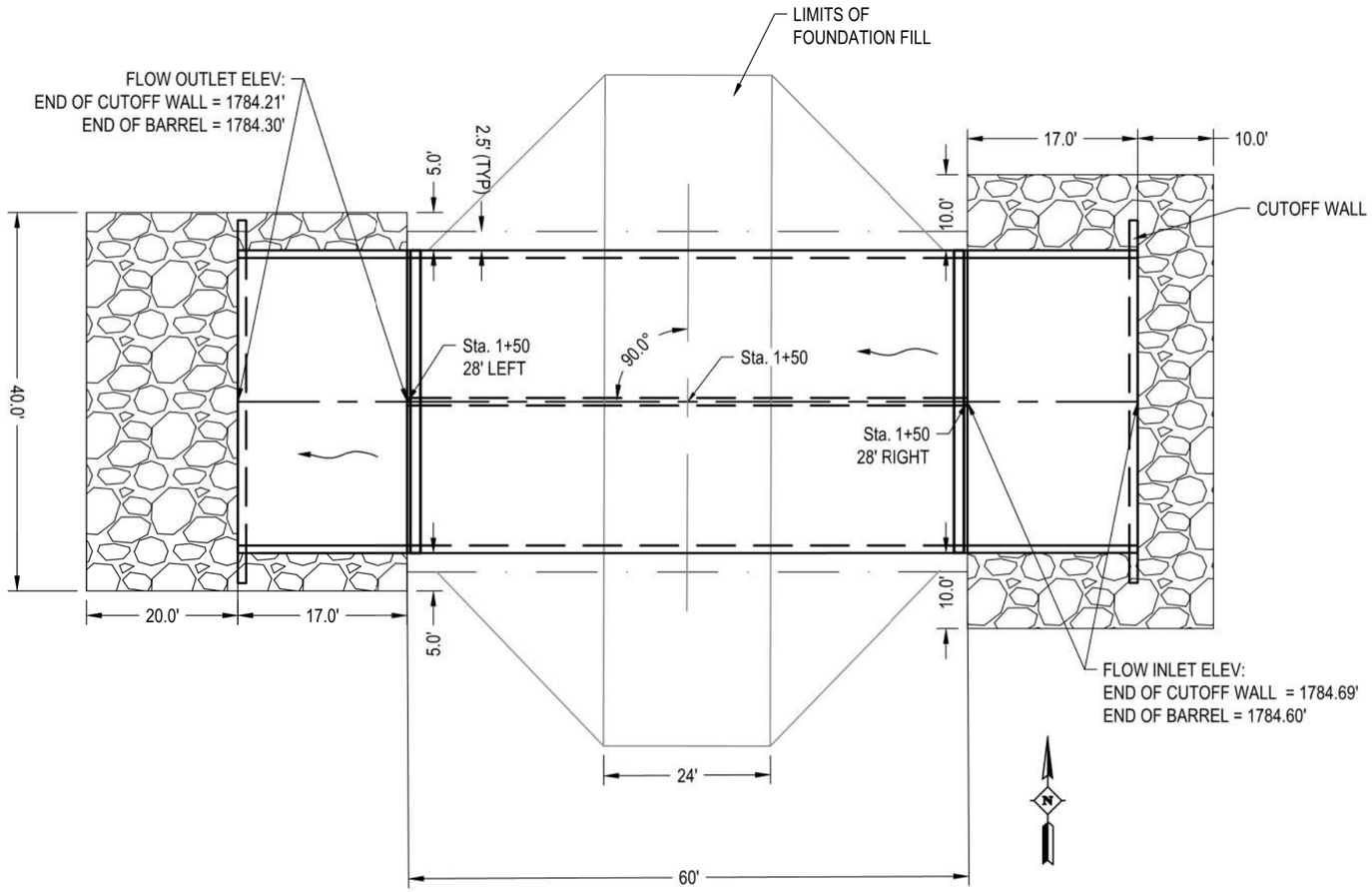

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (CONTRIBUTING)	47.6 SQ MILES
DESIGN FREQUENCY	15 YEARS
DESIGN DISCHARGE	1543 CFS
DESIGN STAGE	1794.26
STREAM GRADIENT	0.002 FT/FT
WATERWAY PROVIDED BELOW DESIGN STAGE	224 SQ FT
AVG. VELOCITY OF FLOW IN NATURAL CHANNEL	9.06 FPS
DEPTH OF FLOW	9.23 FT
VELOCITY OF FLOW THRU CULVERT	6.89 FPS
FREEBOARD PROVIDED	3.74 FT (MIN.)
100 YEAR FREQUENCY DISCHARGE	2890 CFS
100 YEAR FREQUENCY STAGE	1795.55
MAXIMUM OBSERVED STAGE	NOT RECORDED
MAXIMUM RECORDED DISCHARGE	NOT RECORDED
FREQUENCY OF MAXIMUM FLOOD	NOT RECORDED

SPEC.	CODE	ITEM DESCRIPTION	UNIT	QUAN.
210	0050	BOX CULVERT EXCAVATION	EA	1
210	0127	CHANNEL EXCAVATION	L SUM	1
210	0210	FOUNDATION FILL	TON	1023
210	0225	FOUNDATION FILL - TYPE I	TON	571
210	0405	FOUNDATION PREPARATION BOX CULVERT	L SUM	1
256	0200	RIPRAP - GRADE II	CY	127
606	3409	DBL 14FT X 9FT PRECAST RCB CULVERT	LF	60
606	7409	DBL 14FT X 9FT PRECAST RCB END SECTION	EA	2

NOTE:

1. CHANNEL EXCAVATION INCLUDES FILLING OF THE OLD CHANNEL TO FACILITATE RIPRAP PLACEMENT WHERE REQUIRED TO PRODUCE SATISFACTORY TRANSITION TO/FROM CHANNEL TO END SECTIONS.
2. EXISTING STREAM BED ELEVATION = 1785.50±
3. THIS BOX CULVERT IS DESIGNED TO BE COUNTERSUNK 12 INCHES.
4. RIPRAP QUANTITY INCLUDES RIPRAP AT OUTLET OF BOX CULVERT AND ALONG SLOPES AS SHOWN IN SECTION 77.

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:07:34 -06'00'
NORTH DAKOTA

BOX CULVERT LAYOUT

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	170	2

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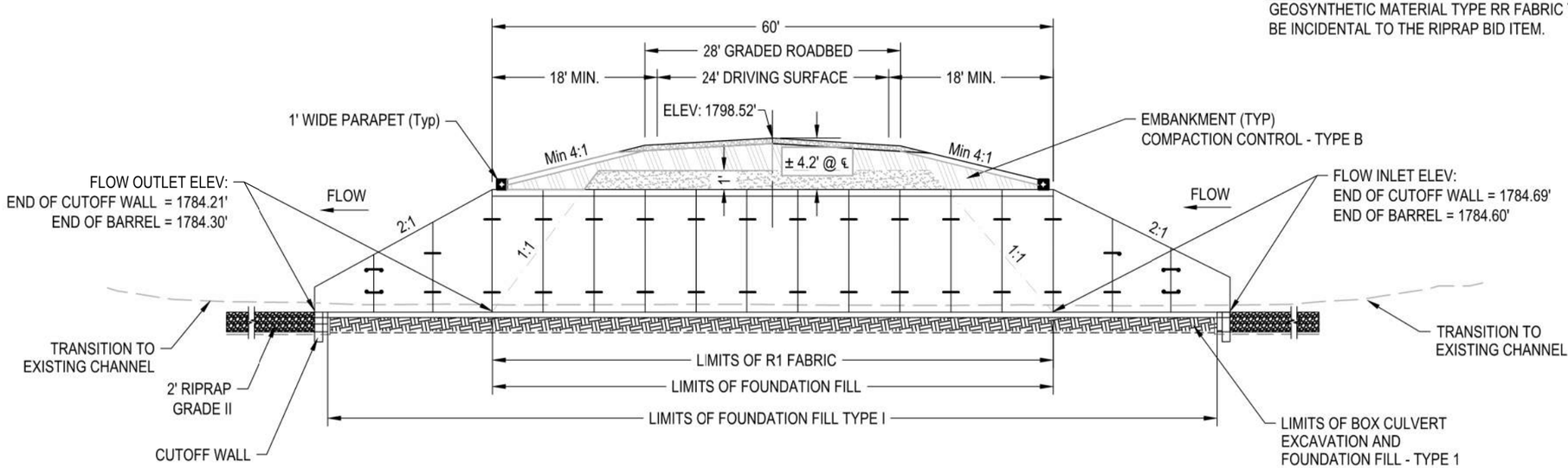
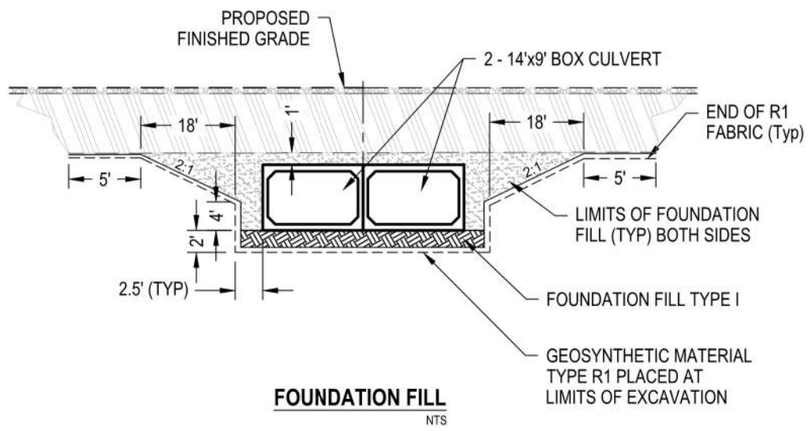
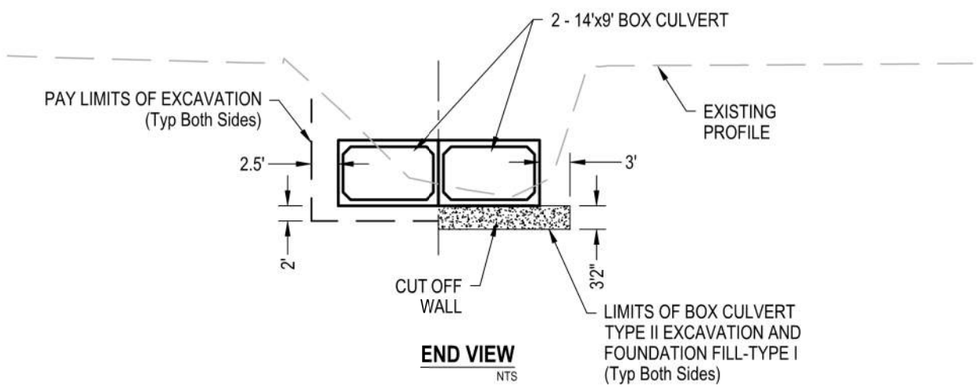
NOTE:
GEOSYNTHETIC MATERIAL TYPE RR FABRIC TO BE INCIDENTAL TO THE RIPRAP BID ITEM.



SIDE VIEW BOX
NTS



FOUNDATION FILL
NTS



END VIEW
NTS

REGISTERED PROFESSIONAL ENGINEER
MARIA TOMAC
PE-5939
DATE
2026.01.30 08:07:41-06'00'
NORTH DAKOTA

BOX CULVERT BACKFILL DETAILS

BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	170	3

INTERSTATE ENGINEERING
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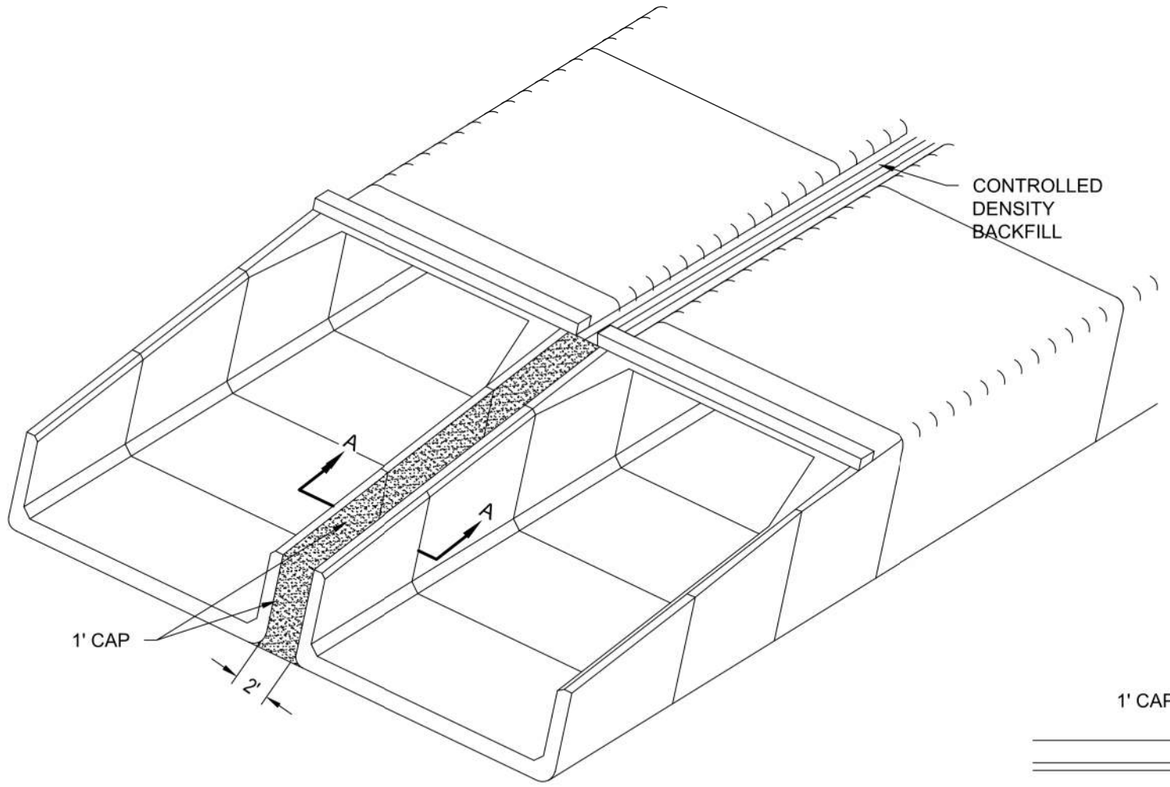
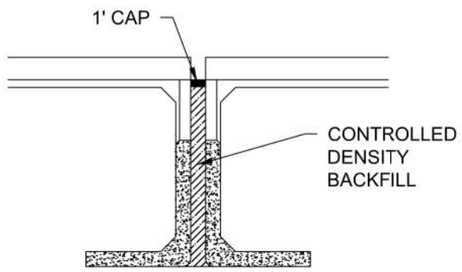


MULTIPLE CELL INSTALL
NTS



SECTION A-A
NTS

CONTROLLED DENSITY BACKFILL:

1. The controlled density backfill shall be a blend of cement, water, pozzolanic materials and fillers. The material shall be fluid on placement to flow around and fill voids in the backfill area. The material shall be able to support normal loads after 6 hours and shall have a compressive strength in the range of 75 psi to 125 psi at 28 days. The contractor shall provide mix designs and compression strength test results of the material to the engineer for approval 5 days prior to placement. A typical mix design is shown below. This mix design yields approx. 1 cubic yard of controlled density backfill

Sand	3000 lbs
Water	450 lbs
Flyash	250 lbs
Cement	30 lbs

2. The 1 foot cap shall consist of a weatherproof freeze/thaw resistant material such as Sika grout 212, Eva-pox Epoxy paste No. 22 Speed Crete red lime, or an approved equal.

3. Class AE-3 concrete may be substituted for the 1' cap with the approval of the engineer. The thickness shall be 2 feet in the area.

MULTIPLE CELL INSTALLATION:

1. The intent of this drawing is to show only the placement of the special backfill between adjacent barrels if, and only if, the multiple cell condition is built. The representation of the number of barrels and the wing geometry shown is arbitrary.

REGISTERED PROFESSIONAL ENGINEER
MARIA
TOMAC
PE-5939
DATE
2026.01.30 08:07:49-06'00'
NORTH DAKOTA

MULTIPLE CELL INSTALLATION

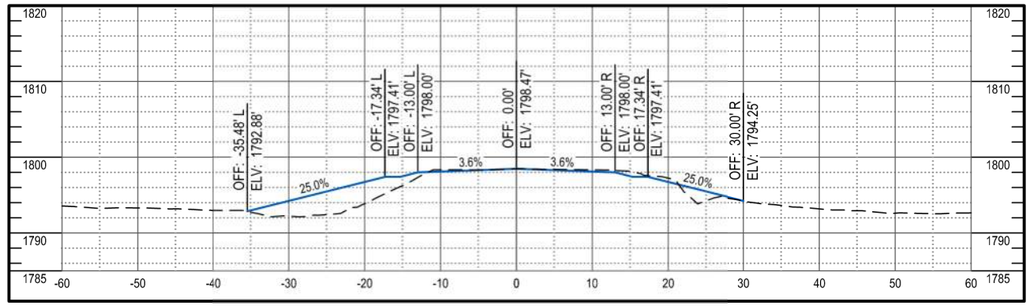
BRIDGE REPLACEMENT
NEW BRIDGE #30-145-11.1

MORTON COUNTY

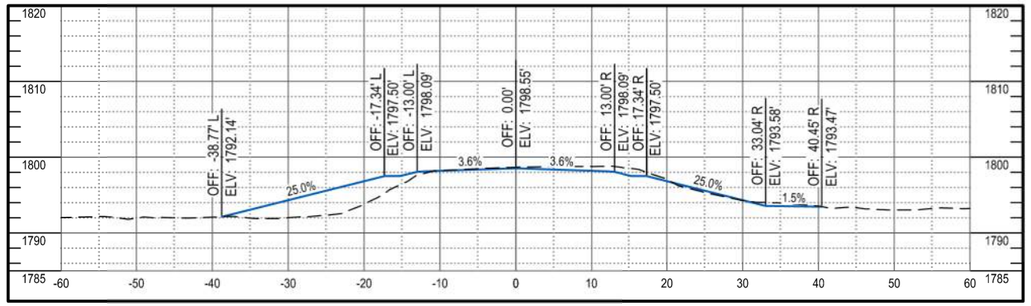
CROSS SECTIONS
1+00 to 2+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CR25-00-067	200	1

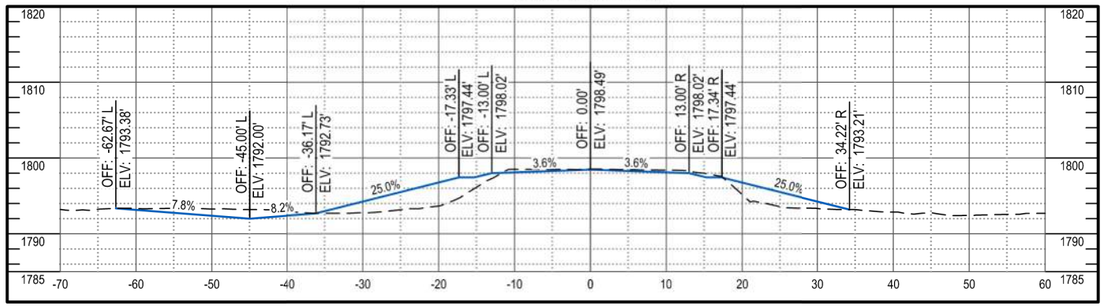
STATION: 1+00



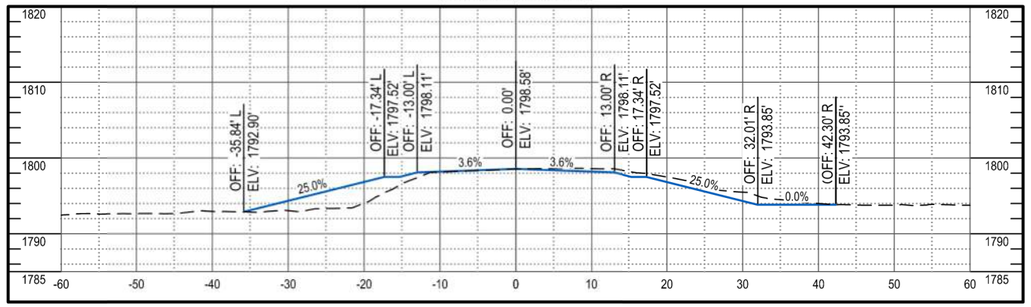
STATION: 1+80



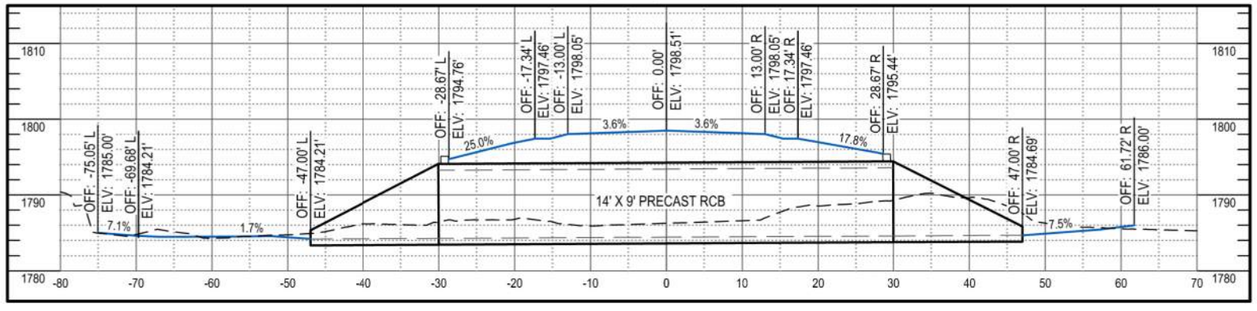
STATION: 1+20



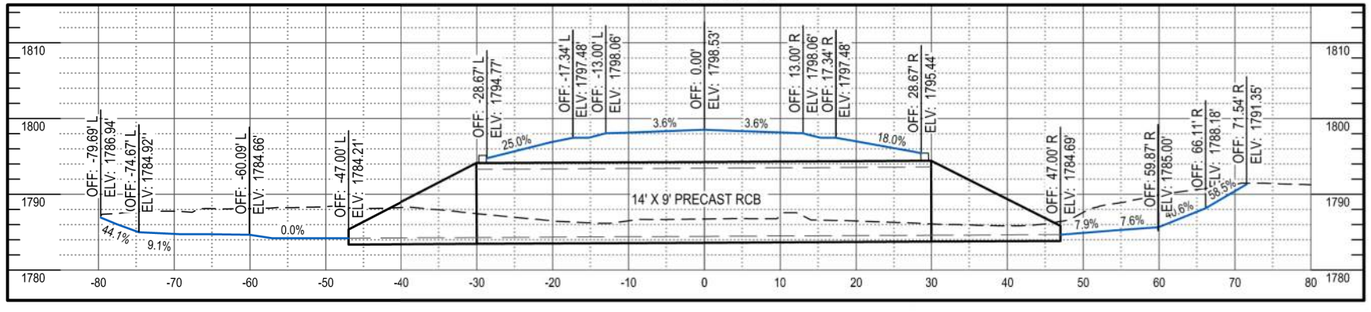
STATION: 2+00



STATION: 1+43



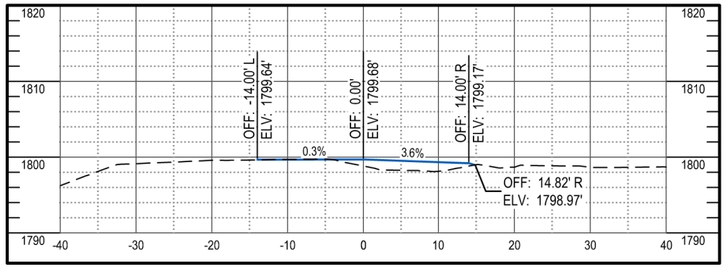
STATION: 1+57



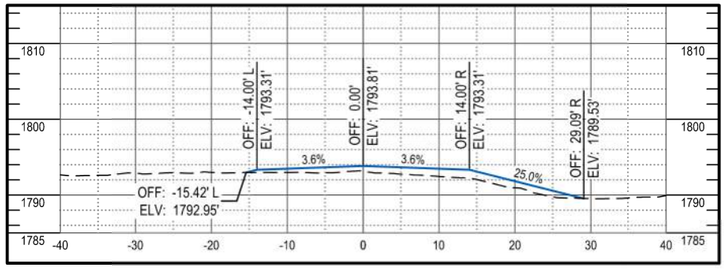
CROSS SECTIONS - BYPASS
11+20 to 15+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	200	2

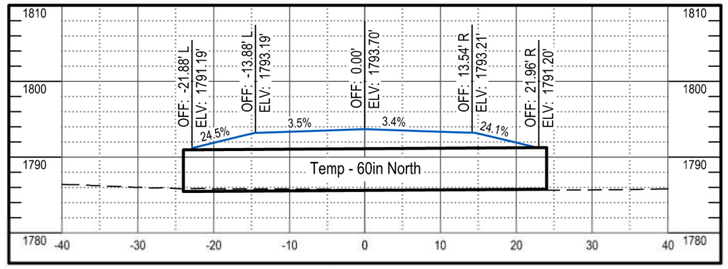
STATION: 11+20



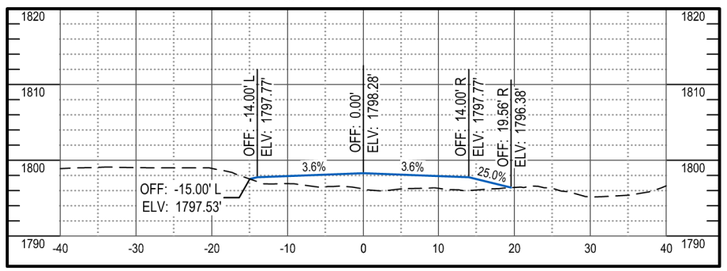
STATION: 12+80



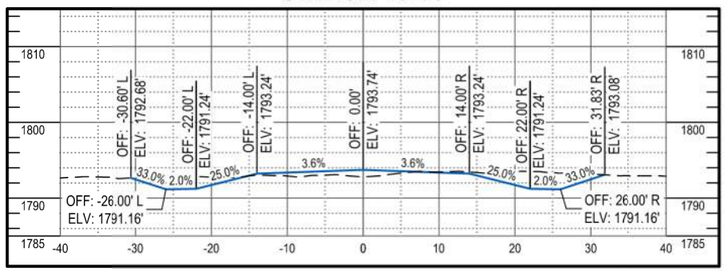
STATION: 13+93



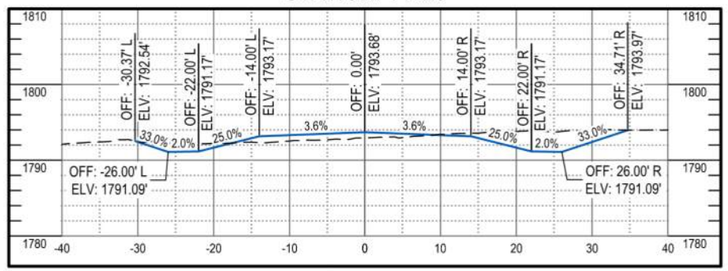
STATION: 11+60



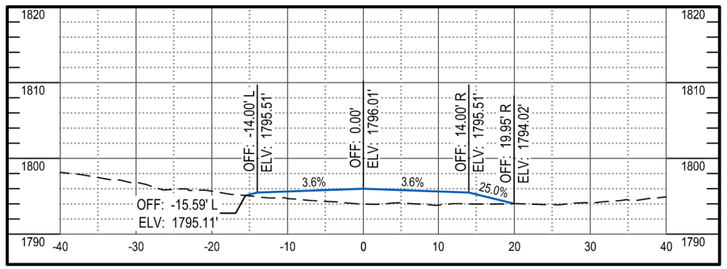
STATION: 13+20



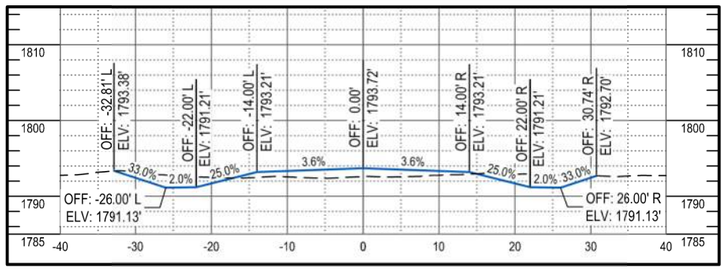
STATION: 14+20



STATION: 12+00



STATION: 13+60



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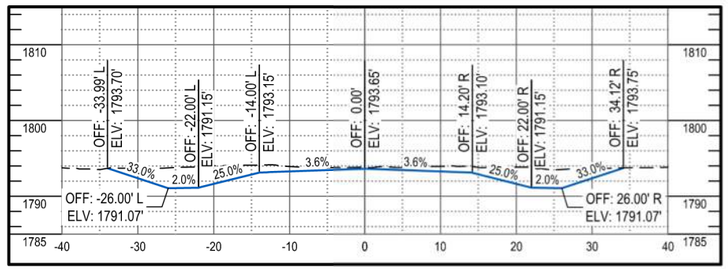
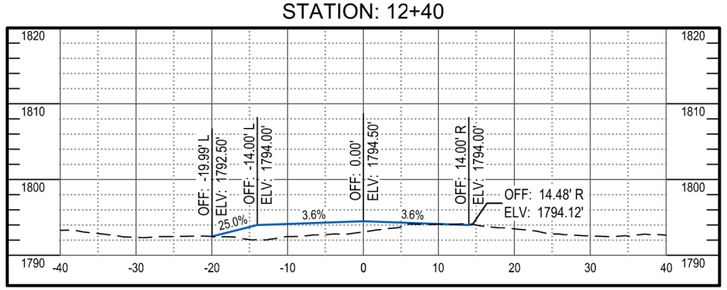
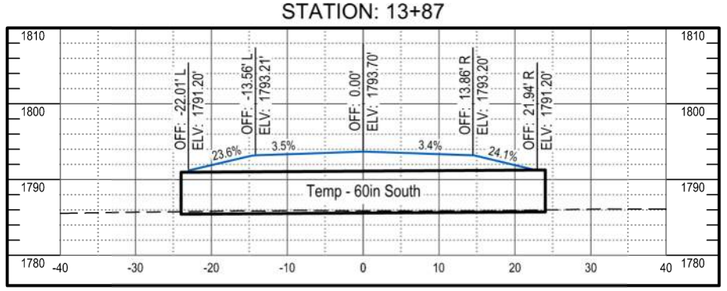


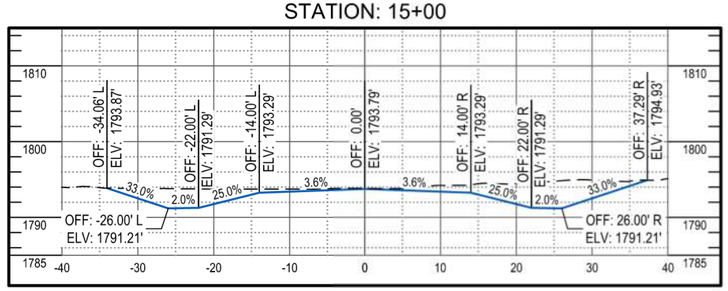
STATION: 12+40



STATION: 13+87



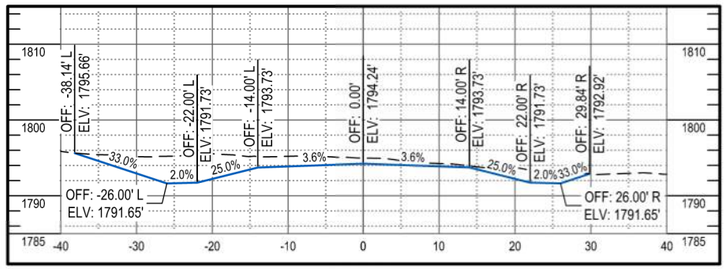
STATION: 15+00



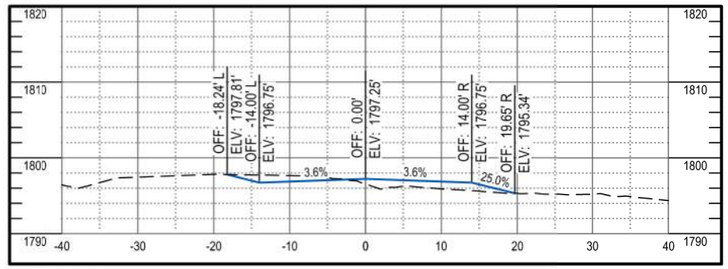
CROSS SECTIONS - BYPASS
15+40 to 17+40

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CR25-00-067	200	3

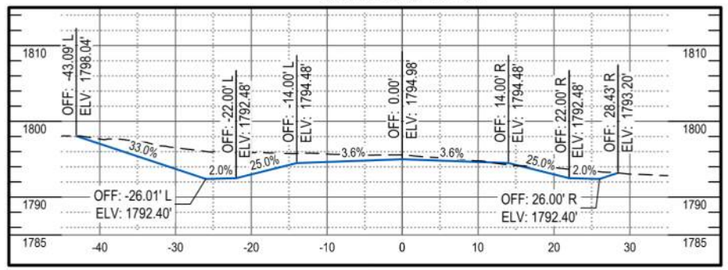
STATION: 15+40



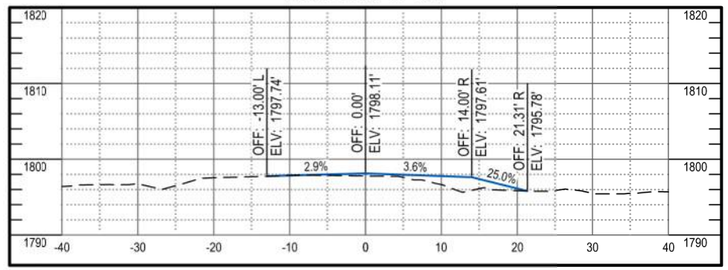
STATION: 16+60



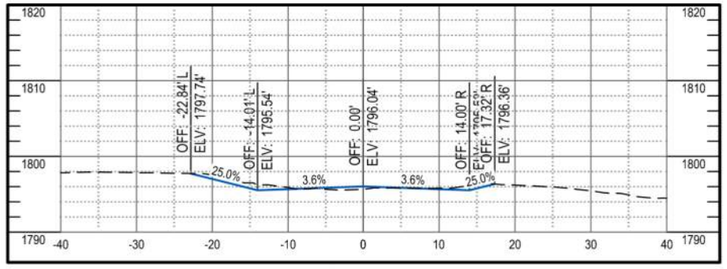
STATION: 15+80



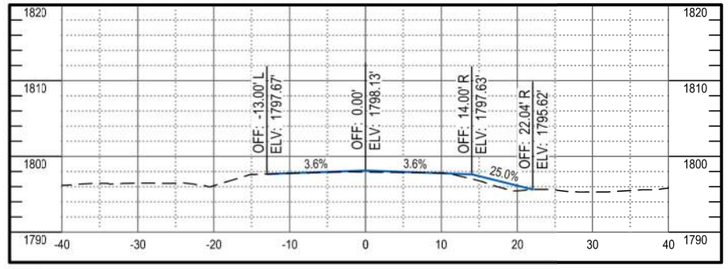
STATION: 17+00



STATION: 16+20



STATION: 17+40



NDDOT ABBREVIATIONS

?	This is a special text character used in the labeling of existing features. It indicates a feature that has an unknown characteristic, potentially based on: lack of description, location accuracy or purpose.
Abn	abandoned
Abut	abutment
Adj	adjusted
Aggr	aggregate
Ahd	ahead
ARV	air release valve
Align	alignment
Al	alley
Alt	alternate
Alum	aluminum
ADA	Americans with Disabilities Act
&	and
Appr	approach
Approx	approximate
ACP	asbestos cement pipe
Asph	asphalt
AC	asphalt cement
Assmd	assumed
@	at
Atten	attenuation
ATR	automatic traffic recorder
Ave	Avenue
Avg	average
ADT	average daily traffic
Bk	back
BF	back face
Balc	balcony
B Wire	barbed wire
Barr	barricade
Btry	battery
BI	beehive inlet
Beg	begin
BG	below grade
BM	bench mark
Bkwy	bikeway
Bit	bituminous
Blk	block
BH	bore hole
Bot	bottom
Blvd	Boulevard
Bndry	boundary
Brkwy	breakaway
Br	bridge
Bldg	building
Bus.	business
BV	butterfly valve
Byp	bypass
C Gdrl	cable guardrail
Calc	calculate
CIP	cast iron pipe
CB	catch basin
CRS	cationic rapid setting
C Gd	cattle guard
C To C	center to center
CL or ℄	centerline
Ch	chain
Chnlk	chain-link
Ch Blk	channel block
Ch Ch	channel change
Chk	check
Chsld	chiseled
Cir	circle
Cl	class
Clnt	clean-out
Clr	clear
Cl&gr	clearing & grubbing
Comb.	combination
Coml	commercial
Compr	compression
CADD	computer aided drafting & design
Conc	concrete
CECB	concrete erosion control blanket
Cond	conductor
Const	construction
Cont	continuous
CSB	continuous split barrel sample
Contr	contraction
Contr	contractor
CP	control point
Coord	coordinate
Cor	corner
Corr	corrected
CAES	corrugated aluminum end section
CAP	corrugated aluminum pipe
CMES	corrugated metal end section
CMP	corrugated metal pipe
CPVCP	corrugated poly-vinyl chloride pipe
CSES	corrugated steel end section
CSFES	corrugated steel flared end section
CSP	corrugated steel pipe
CSTES	corrugated steel traversable end section
Co	County
Crse	course
Ct	Court
Xarm	cross arm
Xbuck	cross buck
Xsec	cross sections
Xing	crossing
Xrd	crossroad
Crn	crown
Culv	culvert
C&G	curb & gutter
CI	curb inlet
CR	curb ramp
C	cut
Dd Ld	dead load
Defl	deflection
Defm	deformed
Dlnt	delineate
Dlntr	delineator
Depr	depression
Desc	description
Det	detail
DWP	detectable warning panel
Dtr	detour
Dia or ø	diameter
Dir	direction
Dist	distance
DM	disturbed material
DB	ditch block
DG	ditch grade
Dbl	double
Dn	down
Dwg	drawing
Dr	drive
Drwy	driveway
DI	drop inlet
D	dry density
Ea	each
Esmt	easement
E	East
EB	Eastbound
Elast	elastomeric
EL	electric locker
E Mtr	electric meter
EVSE	electric vehicle supply equipment
Elec	electric/al
EDM	electronic distance meter
Elev or El	elevation
Ellipt	elliptical
Emb	embankment
Emuls	emulsion/emulsified
ES	end section
Engr	engineer
ESS	environmental sensor station
Eq	equal
Evgr	evergreen
Exc	excavation
Exst	existing
Exp	expansion
Expy	Expressway
E	external of curve
Extru	extruded
FOS	factor of safety
Fed	Federal
FP	feed point
Fn	fence
Fn P	fence post
FO	fiber optic
FD	field drive
F	fill
FAA	fine aggregate angularity
FH	fire hydrant
Fl	flange
Flrd	flared
FES	flared end section
F Bcn	flashing beacon
FA	flight auger sample
FL	flow line
Ftg	footing
FM	force main
Fnd	found
Fdn	foundation
Frac	fractional
Frwy	freeway
Frt	front
FF	front face
F Disp	fuel dispenser
FFP	fuel filler pipes
FLS	fuel leak sensor
Furn	furnish/ed

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NDDOT ABBREVIATIONS

Galv	galvanized
Gar	garage
Gs L	gas line
G Reg	gas line regulator
GMV	gas main valve
G Mtr	gas meter
GSV	gas service valve
GVP	gas vent pipe
GV	gate valve
Ga	gauge
Gov	government
Grd	graded/grade
Grnd	ground
GWM	ground water monitor
Gdrl	guardrail
Gtr	gutter
H Plg	H piling
Hdwl	headwall
Ht	height
Hel	helical
HDPE	high density polyethylene
HM	high mast
HP	high pressure
HPS	high pressure sodium
HTCG	high tension cable guardrail
Hwy	highway
Hor	horizontal
HBP	hot bituminous pavement
HMA	hot mix asphalt
Hyd	hydrant
Ph	hydrogen ion content
Id	identification
Incl	inclinometer tube
IMH	inlet manhole
ID	inside diameter
Inst	instrument
Intchg	interchange
Intmdt	intermediate
Intscn	intersection
Inv	invert
IP	iron pipe
Jt	joint
Jct	junction

Ln	lane
Lg	large
Lat	latitude
Lt	left
Lens	lenses
Lvl	level
Lvlng	leveling
Lht	light
LP	light pole
Ltg	lighting
Liq	liquid
LL	liquid limit
Loc	location
Long.	longitude
Lp	loop
LD	loop detector
Lum	luminaire
Mb	mailbox
ML	main line
MH	manhole
Mkd	marked
Mkr	marker
Mkg	marking
MA	mast arm
Matl	material
Max	maximum
Meas	measure
Mdn	median
MD	median drain
MC	medium curing
MGS	Midwest Guardrail System
MM	mile marker
MP	mile post
Min	minimum
Misc	miscellaneous
Mon	monument
Mnd	mound
Mtbl	mountable
Mtd	mounted
Mtg	mounting
Mk	muck
Neop	neoprene
Ntwk	network
N	North
NE	Northeast
NW	Northwest
NB	Northbound
No. or #	number

Obsc	obscure(d)
Ocpd	occupied
Ocpy	occupy
O/s	offset
OC	on center
C	one dimensional consolidation
OC	organic content
Orig	original
O To O	out to out
OD	outside diameter
OH	overhead
PMT	pad mounted transformer
Pg	pages
Pntd	painted
Pr	pair
Pnl	panel
Pk	park
PSD	passing sight distance
Pvmt	pavement
Ped	pedestal
Ped	pedestrian
PPP	pedestrian pushbutton post
Pen.	penetration
Perf	perforated
Per.	perimeter
Perm	permanent
PL	pipeline
Pl	place
P&P	plan & profile
PL	plastic limit
Pl or ℄	plate
Pt	point
PE	polyethylene
PVC	polyvinyl chloride
PCC	Portland Cement concrete
PP	power pole
Preempt	preemption
Prefab	prefabricated
Prfmd or Pref	preformed
Prep	preperation
Press.	pressure
PRV	pressure relief valve
Prestr	prestressed
Pvt	private
PD	private drive
Prod.	production/produce
Prog	programmed
Prop.	property
Ppsd	proposed
PB	pull box

Qty	quantity
Qtr	quarter
Rad or R	radius
RR	railroad
Rlwy	railway
Rsd	raised
RC	rapid curing
Rec	record
Rcy	recycle
RAP	recycled asphalt pavement
RPCC	recycled portland cement concrete
Ref	reference
R Mkr	reference marker
RM	reference monument
RP	reference point
Refl	reflectorized
RCB	reinforced concrete box
RCES	reinforced concrete end section
RCFES	reinforced concrete flared end section
RCP	reinforced concrete pipe
RCPS	reinforced concrete pipe sewer
RCTES	reinforced concrete traversable end section
Reinf	reinforcement
Res	reservation
Res	residence
Ret	retaining
Rev	reverse
Rt	right
R/W	right of way
Riv	river
Rd	road
Rdbd	road bed
Rdwy	roadway
RWIS	roadway weather information system
Rk	rock
Rt	route

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NDDOT ABBREVIATIONS

Salv	salvage(d)
San	sanitary sewer line
Sec	section
SL	section line
Sep	separation
Seq	sequence
Serv	service
Sht	sheet
Shtng	sheeting
Shldr	shoulder
Sw or Sdwk	sidewalk
SD	sight distance
SN	sign number
Sig	signal
Sgl	single
SRCP	slotted reinforced concrete pipe
SC	slow curing
SS	slow setting
Sm	small
S	South
SE	Southeast
SW	Southwest
SB	Southbound
Sp	spaces
Spcl	special
SA	special assembly
SP	special provisions
G	specific gravity
Spk	spike
SB	split barrel sample
SH	sprinkler head
SV	sprinkler valve
Sq	square
Stk	stake
Std	standard
N	standard penetration test
Std Specs	standard specifications
Stm L	steam line
SEC	steel encased concrete
SMA	stone matrix asphalt
SSD	stopping sight distance
SD	storm drain
St	street
SPP	structural plate pipe
SPPA	structural plate pipe arch
Str	structure
Subd	subdivision
Sub	subgrade
Sub Prep	subgrade preperation
Ss	subsoil
SS	supplement specification
Supp	supplemental
Surf	surfacing
Surv	survey
Sym	symmetrical

Tel	telephone
Tel B	Telephone Booth
Tel P	telephone pole
Tv	television
Temp	temperature
Temp	temporary
TBM	temporary bench mark
T	thinwall tube sample
Ts	topsoil
Traf	traffic
TSCB	traffic signal control box
Tr	trail
Transf	transformer
Trans	transition
TT	transmission tower
TES	traversable end section
Trans	transverse
Trtd	treated
Trmt	treatment
Qc	triaxial compression
TERO	tribal employment rights ordinance
Tpl	triple
Typ	typical
Qu	unconfined compressive strength
Ugrnd	underground
Util	utility
VG	valley gutter
Vap	vapor
Vert	vertical
VCP	vitrified clay pipe
Vol	volume
VSFS	vehicle speed feedback sign
Wkwy	walkway
W	water content
WGV	water gate valve
WL	water line
WM	water main
WMV	water main valve
W Mtr	water meter
WSV	water service valve
WW	water well
Wrng	wearing
WIM	weigh in motion
W	west
WB	westbound
Wrng	wiring
W/	with
W/o	without

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NDDOT ABBREVIATIONS

MEASUREMENTS

ac	acres
A	ampere
Bd Ft	board feet
Cd	candela
cm	centimeter
C	coulomb
CF	cubic feet
m3	cubic meter
m3/s	cubic meters per second
CY	cubic yard
CY/mi	cubic yards per mile
D or Deg	degree
F	Fahrenheit
F	farad
ft	feet/foot
Gal	gallon
G	giga
Ha	hectare
H	henry
Hz	hertz
hr	hour(s)
in.	inch
J	joule
K	kelvin
kN	kilo newton
kPa	kilo pascal
kg	kilogram
kg/m3	kilogram per cubic meter
km	kilometer
K	Kip(s)
LF	linear foot
L	litre
Lm	lumen
L sum	lump sum
Lx	lux
M Hr	man hour
M	mega
m	meter
m/s	meters per second
mi	mile
mL	milliliter
mm	millimeter
mm/hr	millimeters per hour
n	nano
N	newton
Pa	pascal
lb	pounds
sec	seconds
S	siemens
SF	square feet
km2	square kilometer
m2	square meter
SY	square yard
Sta Yd	station yards
SI	Systems International
T	tesla
T/mi	tons per mile
V	volt
W	watt
Wb	weber

SURVEY DESCRIPTIONS

Az	azimuth
Bs	backsight
Brg	bearing
BP Cap	blue plastic cap
BS	both sides
BC	brass cap
CC	closing corner
CS	curve to spiral
Eq	equation
E	external of curve
FS	far side
FB	field book
Fs	foresight
Geod	geodetic
GIS	Geographical Information System
GPS	Global Positioning System
HI	height of instrument
IM	iron monument
I Pn	iron pin
LS	Land Surveyor (licensed)
LSIT	Land Surveyor In Training
L	length of curve
LC	long chord
LB	level book
MC	meander corner
Mer	meridian
M	mid ordinate of curve
NGS	National Geodetic Survey
NS	near side
Obsn	observation
Off Loc	office location
OP Cap	orange plastic cap
PK	Parker-Kalon nail
P Cap	plastic cap
PP Cap	pink plastic cap
PCC	point of compound curve
PC	point of curve
PI	point of intersection
PRC	point of reverse curvature
PT	point of tangent
POC	point on curve
POT	point on tangent
RTP	random traverse point
Rge	range
RP Cap	red plastic cap
SC	spiral to curve
SC	standard corner
ST	spiral to tangent
Sta	station
SE	superelevation
Tan	tangent
T	tangent (semi)
TS	tangent to spiral
Twp	township
TB	transit book
TP	traverse point
TP	turning point
USC&G	US Coast & Geodetic Survey
USGS	US Geologic Survey
VC	vertical curve
WC	witness corner
WGS	World Geodetic System
YP Cap	yellow plastic cap
Z	zenith

SOIL TYPES

Cl	clay
Cl F	clay fill
Cl Hvy	clay heavy
Cl Lm	clay loam
Co S	coal slack
C Gr	coarse gravel
CS	coarse sand
FS	fine sand
Gr	gravel
Lig Co	lignite coal
Lig Sl	lignite slack
Lm	loam
Rk	rock
Sd	sand
Sdy Cl	sandy clay
Sdy Cl Lm	sandy clay loam
Sdy Fl	sandy fill
Sdy Lm	sandy loam
Sc	scoria
Sh	shale
Si Cl	silt clay
Si Cl Lm	silty clay loam
Si Lm	silty loam

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NDDOT UTILITY COMPANY AND ORGANIZATION ABBREVIATIONS

D-101-10

702COM	702 Communications
ACCENT	Accent Communications
AGASSIZ WU	Agassiz Water Users District
AGC	Associated General Contractors of America
ALL PL	Alliance Pipeline
ALL SEAS WU	All Seasons Water Users District
AMOCO PI	Amoco Pipeline Company
AMRDA HESS	Amerada Hess Corporation
AT&T	AT&T Corporation
B PAW	Bear Paw Energy Incorporated
BAKER ELEC	Baker Electric
BASIN ELEC	Basin Electric Cooperative Incorporated
BEK TEL	Bek Communications Cooperative
BELLE PL	Belle Fourche Pipeline Company
BLM	Bureau of Land Management
BNSF	Burlington Northern Santa Fe Railway
BOEING	Boeing
BRNS RWD	Barnes Rural Water District
BURK-DIV ELEC	Burke-Divide Electric Cooperative
BURL WRD	Burleigh County Water Resource District
CABLE ONE	Cable One
CABLE SERV	Cable Services
CAP ELEC	Capital Electric Cooperative Incorporated
CASS CO ELEC	Cass County Electric Cooperative
CASS RWU	Cass Rural Water Users District
CAV ELEC	Cavalier Rural Electric Cooperative
CBLCOM	Cablecom Of Fargo
CENEX PL	Cenex Pipeline
CENT PL WATER DIST	Central Pipe Line Water District
CENT PWR ELEC	Central Power Electric Cooperative
CENTURYLINK	CenturyLink
COE	Corps of Engineers
CONS COMM	Consolidated Communications
CONS TELCOM	Consolidated Telcom
CONT RES	Continental Resource Inc
CPR	Canadian Pacific Railway
D O E	Department Of Energy
DAK CARR	Dakota Carrier Network
DAK CENT TEL	Dakota Central Telephone
DAK RWD	Dakota Rural Water District
DGC	Dakota Gasification Company
DICKEY R NET	Dickey Rural Networks
DICKEY WRD	Dickey County Water Resource District
DICKEY TEL	Dickey Telephone
DNRR	Dakota Northern Railroad
DOME PL	Dome Pipeline Company
DVELEC	Dakota Valley Electric Cooperative
DVMW	Dakota, Missouri Valley & Western
E CENT REG WD	East Central Water District
ENBRDG	Enbridge Pipelines Incorporated
ENVENTIS	Enventis Telephone
EQUINOR	Equinor Pipeline
FALK MNG	Falkirk Mining Company
FHWA	Federal Highway Administration
G FKS-TRL WD	Grand Forks-traill Water District
GETTY TRD & TRAN	Getty Trading & Transportation
GLDN W ELEC	Golden West Electric Cooperative
GTR RAMSEY WD	Greater Ramsey Water District
GT PLNS NAT GAS	Great Plains Natural Gas Company
HALS TEL	Halstad Telephone Company
IDEA1	Idea1
INT-COMM TEL	Inter-Community Telephone Company
KANEB PL	Kaneb Pipeline Company
KEM ELEC	Kem Electric Cooperative Incorporated
KOCH GATH SYS	Koch Gathering Systems Incorporated
LKHD PL	Lakehead Pipeline Company
LWR YELL R ELEC	Lower Yellowstone Rural Electric
LUMEN	Lumen Technologies Incorporated
MCKNZ CON	McKenzie Consolidated Telcom
MCKNZ ELEC	McKenzie Electric Cooperative
MCKNZ WRD	McKenzie County Water Resource District
MCLEOD	McLeod USA
MCLN ELEC	McLean Electric Cooperative
MCLN-SHRDN R WAT	McLean-Sheridan Rural Water District
MDU	Montana-dakota Utilities
MIDCO	MidContinent Communications
MIDSTATE TEL	Midstate Telephone Company
MINOT CABLE	Minot Cable Television
MINOT TEL	Minot Telephone Company
MISS VALL COMM	Missouri Valley Communications Incorporated
MISS W W S	Missouri West Water System
MNKOTA PWR	Minnkota Power
MOR-GRAN-SOU ELEC	Mor-gran-sou Electric Cooperative
MOUNT-WILLI ELEC	Mountrail-williams Electric Cooperative
MLGC	Moore & Liberty - Griggs County
MUNICIPAL	City Water And Sewer
MUNICIPAL	City Of '.....'
N CENT ELEC	North Central Electric Cooperative
N PRAIR REG WD	North Prairie Regional Water District
ND PKS & REC	North Dakota Parks And Recreation
ND TEL	North Dakota Telephone Company
NDDOT	North Dakota Department of Transportation
NE REG WD	Northeast Regional Water District
NDSU SOIL SCI DEPT	NDSU Soil Science Department
NEMONT TEL	Nemont Telephone
NODAK R ELEC	Nodak Rural Electric Cooperative
NOON FRMS TEL	Noonan Farmers Telephone Company
NPR	Northern Plains Railroad
NSP	Northern States Power
NTHN BRDR PL	Northern Border Pipeline
NTHN PLNS ELEC	Northern Plains Electric Cooperative Incorporated
NTHWSTRN REF	Northwestern Refinery Company
NW COMM	Northwest Communication Cooperation
NWRWD	Northwest Rural Water District
ONEOK	Oneok gas
OSHA	Occupational Safety and Health Administration
OTTR TL PWR	Otter Tail Power Company
PAAP	Plains All American Pipeline
P L E M	Prairielands Energy Marketing
POLAR COM	Polar Communications
PVT ELEC	Private Electric
QWEST	Qwest Communications
R&T REG WD	R & T Water District
RED RIV COMM	Red River Communications
RESVTN TEL	Reservation Telephone
ROBRTS TEL	Roberts Company Telephone
R-RIDER ELEC	Roughrider Electric Cooperative
RRVW	Red River Valley & Western Railroad
S CENT REG WD	South Central Regional Water District
SE W U	Southeast Water Users Incorporated
SCOTT CABLE	Scott Cable Television Dickinson
SHERDN ELEC	Sheridan Electric Cooperative
SHEYN VLY ELEC	Sheyenne Valley Electric Cooperative
SKYTECH	Skyland Technologies Incorporated
SLOPE ELEC	Slope Electric Cooperative Incorporated
SOURIS RIV TELCOM	Souris River Telecommunications
ST WAT COMM	State Water Commission
STATE LN WATER	State Line Water Cooperative
STER ENG	Sterling Energy
STUT RWD	Stutsman Rural Water District
SW PL PRJ	Southwest Pipeline Project
SWWA	Southwest Water Authority
SUNOCO	Sunoco LP
T M C	Turtle Mountain Communications
TCI	TCI of North Dakota
TESORO HGH PLNS PL	Tesoro High Plains Pipeline
TRI-CNTY WU	Tri-County Water Users Incorporated
TRL CO WRD	Traill County Water Resource District
UNTD TEL	United Telephone
UPPR SOUR WD	Upper Souris Water District
US SPRINT	U.S. Sprint
USAF MSL CABLE	U.S.A.F. Missile Cable
USFWS	US Fish and Wildlife Service
USW COMM	U.S. West Communications
VRNDRY ELEC	Verendrye Electric Cooperative
W RIV TEL	West River Telephone Incorporated
WAPA	Western Area Power Administration
WAWSA	Western Area Water Supply Authority
WEB	W. E. B. Water Development Association
WILLI WRD	Williams County Water Resource District
WILSTN BAS PL	Williston Basin Interstate Pipeline Company
WLSH RWD	Walsh Water Rural Water District
WOLVRTN TEL	Wolverton Telephone
XLENER	Xcel Energy
YSVR	Yellowstone Valley Railroad

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LINE STYLES

D-101-20

Existing Topography

- Existing Ground Void
- Existing Cemetary Boundary
- Existing Box Culvert Bridge
- Existing Concrete Surface
- Existing Drainage Structure
- Existing Gravel Surface
- Existing Riprap
- Existing Dirt Surface
- Existing Asphalt Surface
- Existing Tie Point Line
- Existing Railroad Centerline
- Existing Guardrail Cable
- Existing Guardrail Metal
- Existing Edge of Water
- Existing Fence
- Existing Railroad
- Existing Field Line
- Exst Flow
- Existing Curb
- Existing Valley Gutter
- Existing Driveway Gutter
- Existing Curb and Gutter
- Existing Mountable Curb and Gutter

- Existing 3-Cable w Posts
- Site Boundary
- Existing Berm, Dike, Pit, or Earth Dam
- Existing Ditch Block
- Existing Tree Boundary
- Existing Brush or Shrub Boundary
- Existing Retaining Wall
- Existing Planter or Wall
- Existing W-Beam Guardrail with Posts
- Existing Railroad Switch
- Gravel Pit - Borrow Area
- Existing Wet Area-Vegetation Break
- Existing High Tension Cable Guardrail
- Existing High Tension Cable Guardrail with Posts

Proposed Topography

- 3-Cable w Posts
- Flow
- Fence
- Remove Line
- Wall
- Retaining Wall (Plan View)
- W-Beam w Posts
- High Tension Cable Guardrail with Posts

Existing Utilities

- Existing Electrical
- Existing Fiber Optic Line
- Existing TV Fiber Optic
- Existing Gas Pipe
- Existing Overhead Utility Line
- Existing Power
- Existing Fuel Pipeline
- Existing Undefined Above Ground Pipe Line
- Existing Sanitary Sewer
- Existing Sanitary Force Main
- Existing Storm Drain
- Existing Storm Drain Force Main
- Existing Culvert
- Existing Telephone Line
- Existing TV Line
- Existing Water or Steam Line
- Existing Under Drain
- Existing Slotted Drain
- Existing Conduit
- Existing Conductor
- Existing Down Guy Wire Down Guy
- Existing Underground Vault or Lift Station

Proposed Utilities

- 24 Inch Pipe
- Reinforced Concrete Pipe
- Under Drain
- Edge Drain

Traffic Utilities

- Conductor
- Fiber Optic
- Existing Loop Detector
- Existing Double Micro Loop Detector
- Micro Loop Detector Double
- Existing Micro Loop Detector
- Micro Loop Detector
- Signal Head with Mast Arm
- Existing Signal Head with Mast Arm

Sign Structures

- Existing Overhead Sign Structure
- Existing Overhead Sign Structure Cantilever
- Overhead Sign Structure Cantilever

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LINE STYLES

D-101-21

Right Of Way

- Easement
- Existing Easement
- Right of Way
- Existing Right of Way
- Existing Right of Way Railroad
- Existing Right of Way Not State Owned
- Existing Government Lot Line
- Existing Adjacent Block Lines
- Existing Adjacent Lot Lines
- Existing Adjacent Property Line
- Existing Adjacent Subdivision Lines
- Sight Distance Triangle Line
- Dimension Leader

Boundary Control

- Existing City Corporate Limits or Reservation Boundary
- Existing State or International Line
- Existing Township
- Existing County
- Existing Section Line
- Existing Quarter Section Line
- Existing Sixteenth Section Line
- Existing Centerline
- Tangent Line

Cross Sections and Typicals

- Existing Ground
- Existing Topsoil (Cross Section View)
- Existing Ground Void (Not Surveyed) (void — void — void — v)
- Existing Concrete
- Existing Aggregate (Cross Section View)
- Existing Curb and Gutter (Cross Section View)
- Existing Asphalt (Cross Section View)
- Existing Reinforcement Rebar

Geotechnical

- Geotextile Fabric Type D (D — D)
- Geogrid (Geo — Geo)
- Geotextile Fabric Type R (R — R)
- Geotextile Fabric Type R1 (R — R)
- Geotextile Fabric Type RR (RR — RR)
- Geotextile Fabric Type S (S — S)
- Subgrade Reinforcement

Countours

- Failure Line
- Depression Contours
- Supplemental Contour

Profile

- Subgrade, Subcut or Ditch Grade
- Topsoil Profile

Striping

- Centerline Pavement Marking
- Barrier with Centerline Pavement Marking
- Barrier Pavement Marking
- Stripe 4 IN Dotted Extension White
- Stripe 8 IN Dotted Extension White
- Stripe 8 IN Lane Drop

Pavement Joints

- Doweled Joint
- Tie Bar 30 Inch 4 Foot Center to Center
- Tie Bar 18 Inch 3 Foot Center to Center
- Tie Bar at Random Spacing

Bridge Details

- Small Hidden Object
- Large Hidden Object
- Phantom Object
- Existing Conditions Object
- Centerline Main
- Centerline Secondary
- Excavation Limits
- Proposed Ground
- Sheet Piling

Erosion Control

- Limits of Const Transition Line
- Bale Check
- Rock Check
- Floating Silt Curtain (S — S)
- Silt Fence (SF — SF)
- Excavation Limits
- Fiber Rolls

Environmental

- Wetland Mitigation
- Existing Wetland Easement USFWS
- Existing Wetland Jurisdictional
- Existing Wetland
- Tree Row

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12 18 2020

SYMBOLS

D-101-30

North Arrow (Half Scale)

Alignment Data Point

Alignment Monument

Spot Elevation

Existing Miscellaneous Spot

Existing Access Control Arrow

Existing Benchmark

Reset USGS Marker

Iron Monument Found

Iron Pin R/W Monument

Property Corner

Iron Pin Reference Monument

Right of Way Marker (Exst, Ppsd, Reset)

Existing Federal Reference Corner

Existing Section Corner (Full, Quarter, Sixteenth, Meander)

Existing Witness Corner

Existing Control Point (CP, GPS-RTK, TRI)

Existing Traverse PI Aerial Panel

Existing Reference Marker Point NGS

Existing EFB Misc

Existing Bush or Shrub

Existing Large Evergreen Tree

Existing Small Evergreen Tree

Existing Large Tree

Existing Small Tree

Existing Tree Trunk

Cairn or Stone Circle

Existing Artifact

Existing Satellite Dish

Existing Weather Station

Existing Windmill or Tower

Reinforced Pavement

CSB Continuous Split Barrel Sample

FA Flight Auger Sample

SB Split Barrel Sample

T Thinwall Tube Sample

N Standard Penetration Test

Incl Inclinometer Tube

Excavation Unit

Existing Ground Water Well Bore Hole

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SYMBOLS

D-101-31

- Flexible Delineator
- Flexible Delineator Type A (Exst, Ppsd)
- Flexible Delineator Type B (Exst, Ppsd)
- Flexible Delineator Type C (Exst, Ppsd)
- Flexible Delineator Type D (Exst, Ppsd)
- Flexible Delineator Type E (Exst, Ppsd)
- Delineator Type A (Exst, Ppsd, Diamond Grade-Reset)
- Delineator Type B (Exst, Ppsd, Diamond Grade-Reset)
- Delineator Type C (Exst, Ppsd, Diamond Grade)
- Delineator Type D (Exst, Ppsd, Diamond Grade)
- Delineator Type E (Exst, Ppsd, Diamond Grade)
- Barricade (Type I, Type II, Type III}
- Arrow Panel (Caution Mode, Double Direction, Left Directional, Right Directional, Sequencing, Truck Mounted)
- Attenuation Device
- Truck Mounted Attenuator
- Delineator Drums
- Flagger
- Tubular Marker
- Traffic Cone
- Back to Back Vertical Panel Sign

- Highway Sign (Exst, Ppsd)
- Mile Post Type A (Exst-Ppsd-Reset)
- Mile Post Type B (Exst, Ppsd)
- Mile Post Type C (Exst, Ppsd)
- Object Marker Type I (Exst, Ppsd)
- Object Marker Type II (Exst, Ppsd)
- Object Marker Type III (Exst, Ppsd)
- Existing Reference Marker
- Road Closure Gate 18 Ft (Exst, Ppsd)
- Road Closure Gate 28 Ft (Exst, Ppsd)
- Road Closure Gate 40 Ft (Exst, Ppsd)
- Existing Railroad Battery Box
- Existing RR Profile Spot
- Existing Railroad Crossbuck
- Existing Railroad Frog
- Existing Mailbox (Private, Federal)

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions

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Kirk J Hoff

12 18 2020

SYMBOLS

D-101-32

- Existing Luminaire
- Luminaire LED
- Existing Light Standard Luminaire
- Relocate Light Standard
- Light Standard Light LED Luminaire
- Light Standard 35 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 50 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 70 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 100 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 150 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 200 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 250 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 310 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 400 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 700 Watt High Pressure Sodium Vapor Luminaire
- Light Standard 1000 Watt High Pressure Sodium Vapor Luminaire
- Emergency Vehicle Detector
- Video Detection Camera

- High Mast Light Standard 3 Luminaire (Exst, Ppsd)
- High Mast Light Standard 4 Luminaire (Exst, Ppsd)
- High Mast Light Standard 5 Luminaire (Exst, Ppsd)
- High Mast Light Standard 6 Luminaire (Exst, Ppsd)
- High Mast Light Standard 7 Luminaire (Exst, Ppsd)
- High Mast Light Standard 8 Luminaire (Exst, Ppsd)
- High Mast Light Standard 9 Luminaire (Exst, Ppsd)
- High Mast Light Standard 10 Luminaire (Exst, Ppsd)
- Overhead Sign Structure Load Center (Exst, Ppsd)
- Traffic Signal Controller (Exst, Ppsd)
- Pad Mounted Traffic Signal Controller (Exst, Ppsd)
- Flashing Beacon (Exst, Ppsd)
- Concrete Foundation (Exst, Ppsd)
- Pipe Mounted Flasher (Exst, Ppsd)
- Pad Mounted Feed Point (Exst, Ppsd)
- Pipe Mounted Feed Point with Pad (Exst, Ppsd)
- Pole Mounted Feed Point (Exst, Ppsd)
- Junction Box (Exst, Ppsd)
- Existing Pedestrian Head with Number
- Existing Signal Head
- Pole Mounted Head
- Existing Lighting Standard Pole

- Existing Traffic Signal Standard
- Pull Box (Exst-Ppsd-Undefined)
- Intelligent Transportation Pull Box (Exst, Ppsd)
- Transformer (Exst, Ppsd)
- Power Pole (Exst-Ppsd-with Transformer)
- Wood Pole (Exst, Ppsd)
- Pedestrian Push Button Post (Exst, Ppsd)
- Existing Pole
- Existing Telephone Pole
- Existing Post
- Connection Conductor (Ground, Neutral, Phase 1, Phase 2)

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions

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SYMBOLS

D-101-33

Existing Manhole (Electrical, Gas, Telephone)

Water Manhole (Exst, Exst with Valve)

Sanitary Sewer Manhole (Exst, Ppsd, Exst with Valve)

Sanitary Force Main Manhole (Exst, Ppsd, Exst with Valve)

Storm Drain Manhole (Exst, Ppsd, Exst with Inlet, Ppsd with Inlet)

Force Main Storm Drain Manhole (Exst, Exst with Valve)

Manhole (Ppsd, Ppsd 48 Inch, Exst Undefined)

Existing Water Appurtenance

Sprinkler Head (Exst, Ppsd)

Fire Hydrant (Exst, Ppsd)

Cleanout (Exst Sanitary, Underdrain)

Existing Catch Basin Inlet (Round, Square)

Existing Curb Inlet (Round, Square)

Existing Slotted Reinforced Concrete Pipe

Catch Basin (Riser 30 Inch, Beehive, Type A)

Inlet Mountable Curb (Type A, Type B)

Inlet Saddle Base (Type 1, Type 2)

Inlet Special (Catch Basin, Type 1, Type A)

Inlet (Tee, Type 1, Type 2, Type 2 Double)

Median Drain

Headwall (Exst, Ppsd, Ppsd Single with Vegitation Barrier,
Ppsd Double with Vegitation Barrier)

Cap or Stub
Exst Gas, Exst Sanitary, Exst Storm Drain, Ppsd Storm Drain, Exst Water

Existing Pedestal
Electrical, Telephone, Fiber Optic Telephone, TV, Fiber Optic TV, Undefined

Existing Pipe Vent
Gas, Fuel, Sanitary, Storm Drain, Water, Undefined

Valve
Exst Gas, Exst Water, Ppsd Water, Exst Undefined

Pump
Sanitary, Storm Drain, Exst Water

Corrugated Metal End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)

Reinforced Concrete End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)

Existing Utility Marker

Existing Meter

Existing Fuel Dispensers

Existing Fuel Filler Pipes

Existing Fuel Leak Sensors

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions Sheet added - Continued from D-101-32

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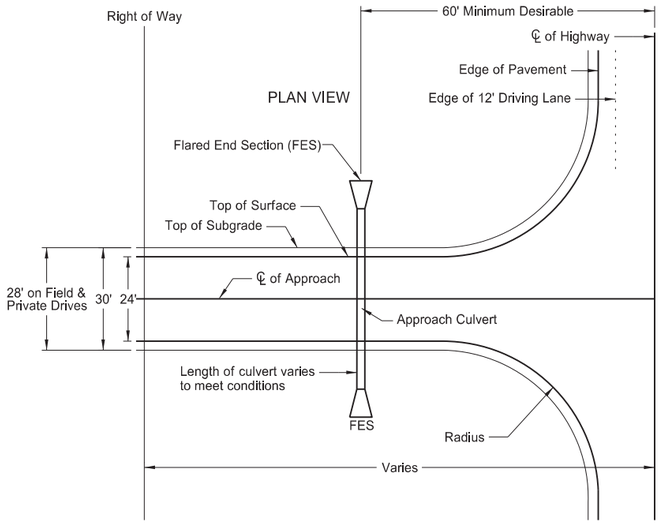
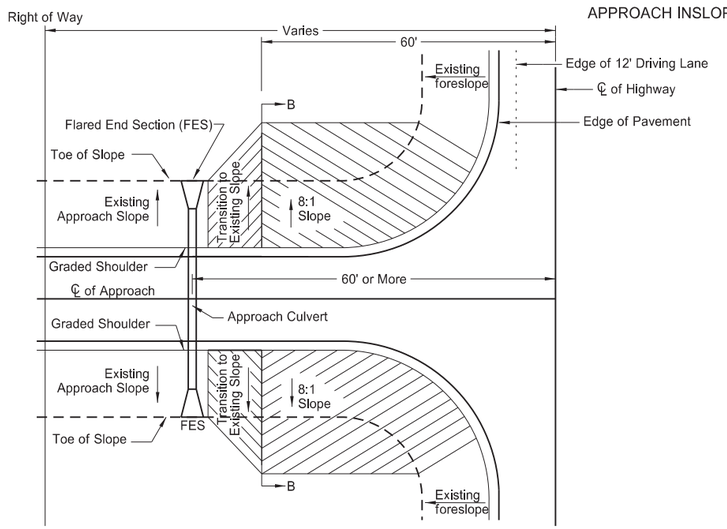
12 18 2020

STANDARD RURAL APPROACHES

D-203-8

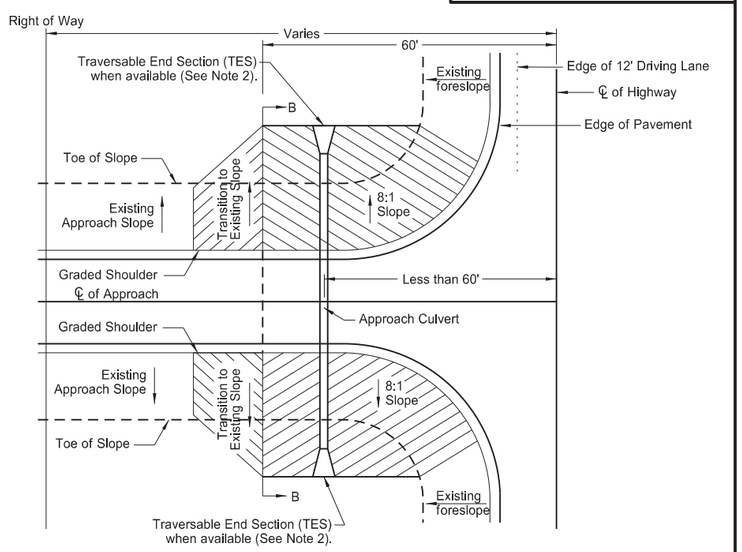


APPROACH INSLOPES



CASE 1

APPROACH PIPE LOCATED
60' OR MORE FROM ℄



CASE 2

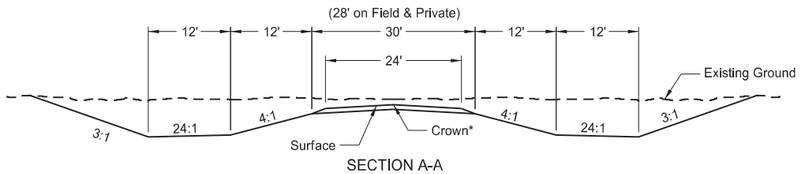
APPROACH PIPE LOCATED
LESS THAN 60' FROM ℄

Approach Pipe Traversable End Sections (TES)

RCP	CSP	CSP Arch
15"	15"	
18"	18"	21"x15"
		24"x18"
24"	24"	28"x20"

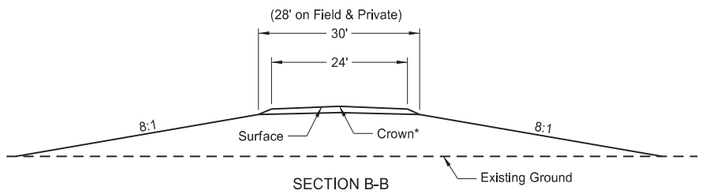
CRITERIA FOR RURAL APPROACH TYPES

	Field Drives	Private Drives	Low Volume Public Roads
Radius	R=40 ft	R=40 ft	R=50 ft
Maximum Grade	10%	7%	7%
Storage Platform	24 ft	24 ft	50 ft
Vertical Curve Length	10 ft	10 ft	Varies (Min. 20 mph)

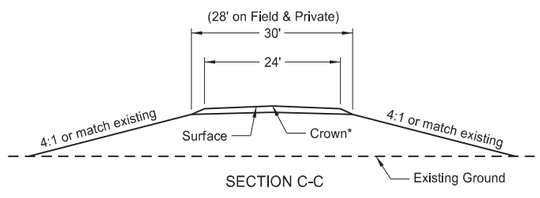


SECTION A-A

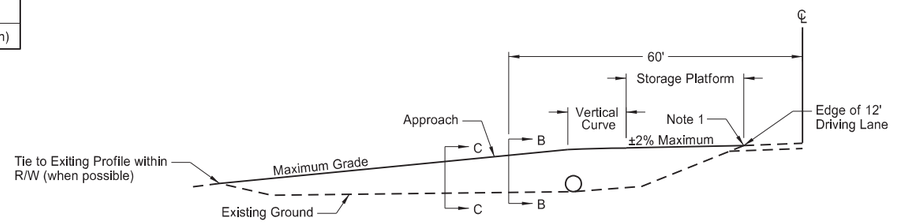
*2.1% crown for paved surface
*3.0% crown for gravel surface



SECTION B-B



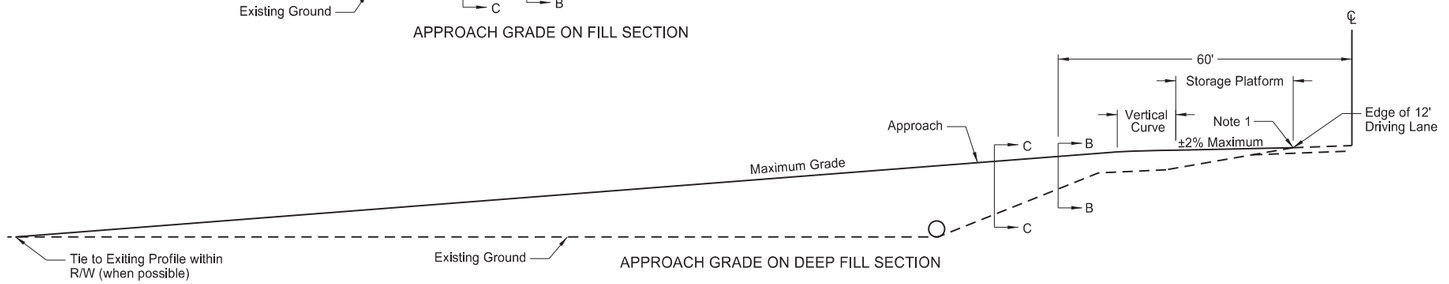
SECTION C-C



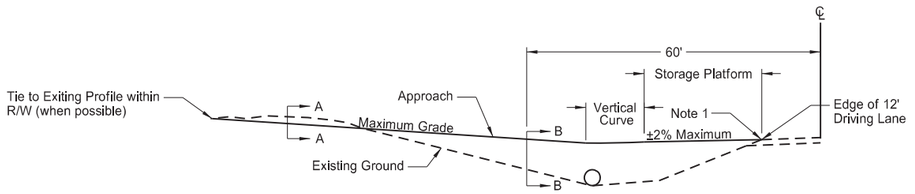
APPROACH GRADE ON FILL SECTION

NOTES:

1. 5% Max Rollover between approach storage platform and highway.
2. Approach pipes up to 24" diameter are acceptable (with traversable end sections) for Case 2. Install approach pipes larger than 24" diameter in accordance with Case 1.



APPROACH GRADE ON DEEP FILL SECTION



APPROACH GRADE ON CUT SECTION

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-25-14	
REVISIONS	
DATE	CHANGE
06-30-17	Revised Radius, Storage Platform, Inslope dimensions, and Note 1
10-25-19 06-29-22	Changed "Inslope" to "Foreslope" Added "TES", Table, and Note 2

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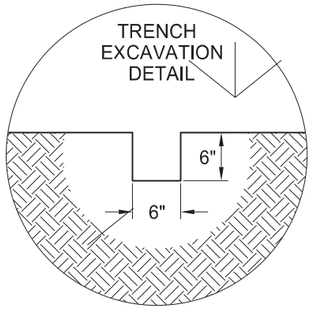
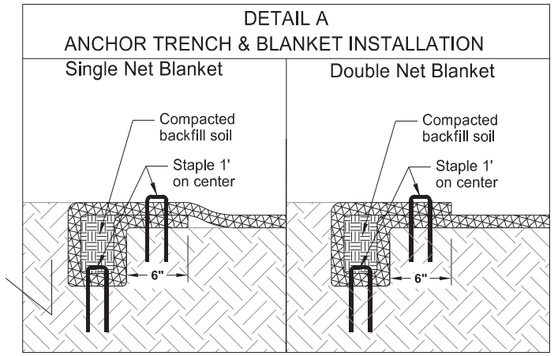
06/29/22

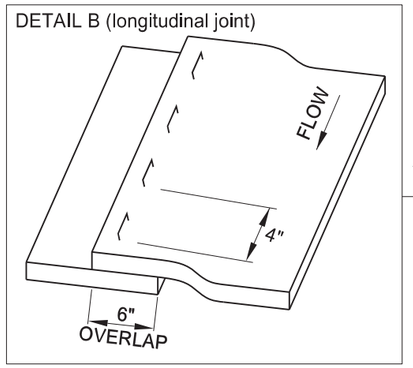
D-255-2

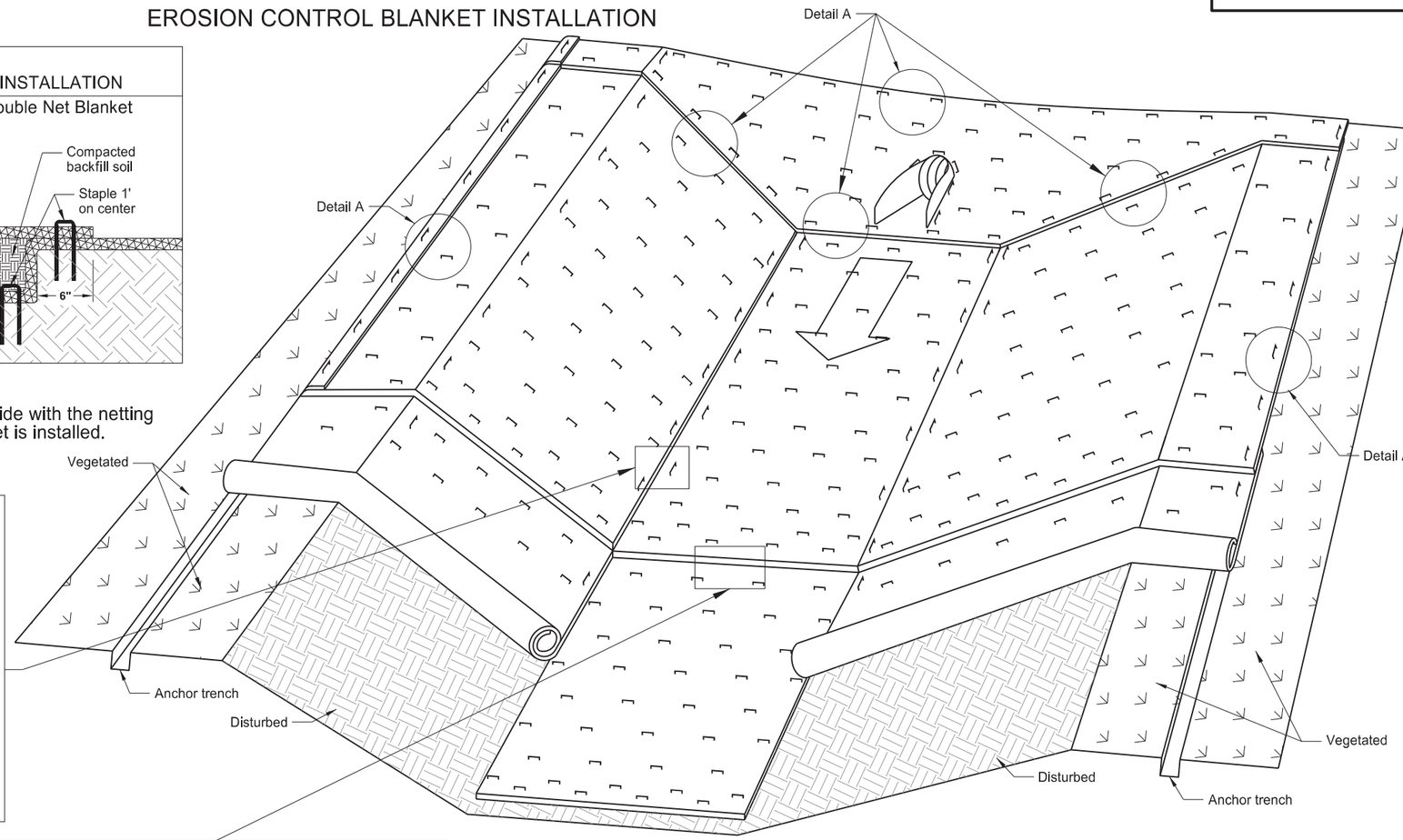
EROSION AND SILTATION CONTROL
EROSION CONTROL BLANKET INSTALLATION



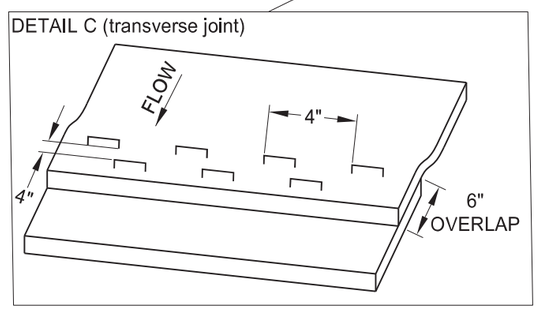


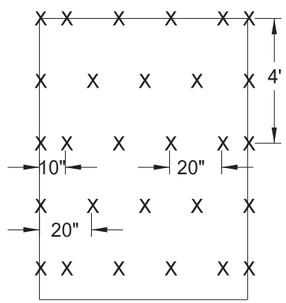
NOTE:
If a Single Net Blanket is used, the side with the netting should be on the top once the blanket is installed.



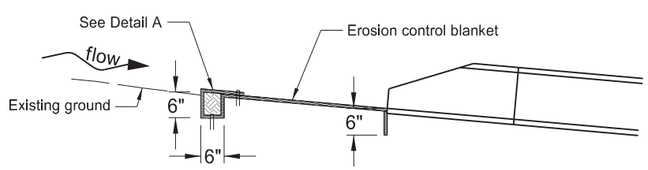


BLANKET LAYOUT
CHANNEL INSTALLATION

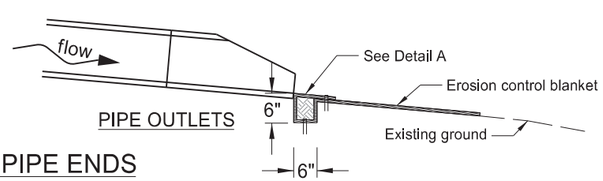




STAPLE PATTERN
(3.8 staples per square yard)



PIPE INLETS



PIPE OUTLETS

INSTALLATION AT PIPE ENDS

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-03-13	
REVISIONS	
DATE	CHANGE
06-26-14	Changed standard drawing number from D-708-6 to D-255-2
07-27-15	Changed Installation details such as trench depth and overlap dimensions
08-27-19	New Design Engineer PE Stamp
08-27-25	Revised minor details for clarity

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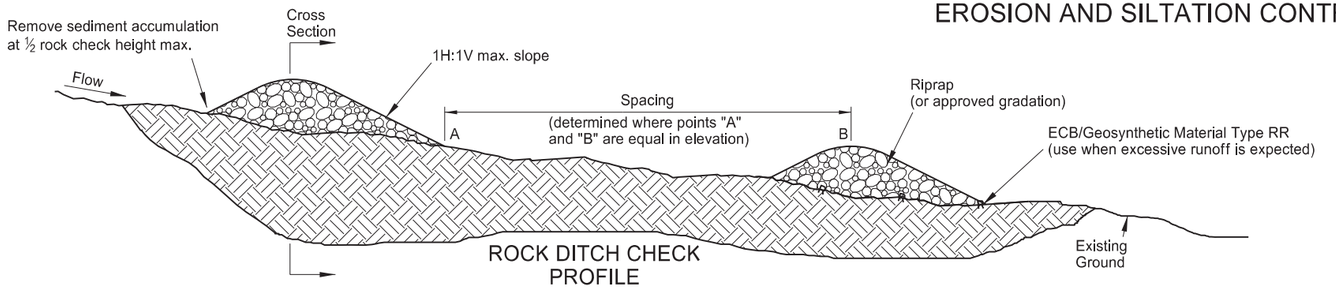
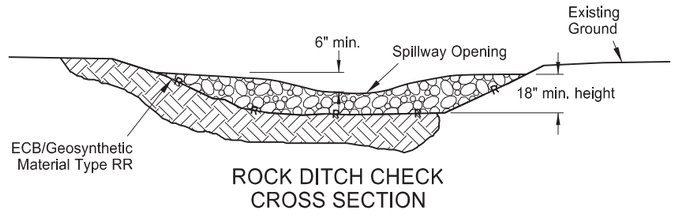
08/27/25

EROSION AND SILTATION CONTROLS

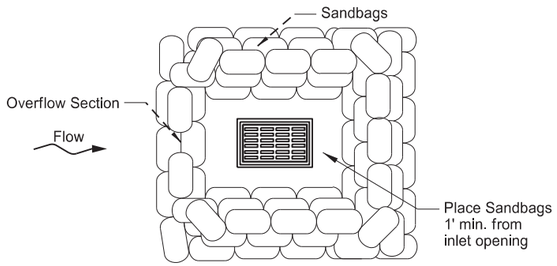
D-256-1



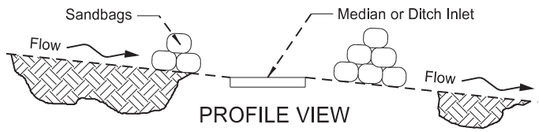
ROCK DITCH CHECK
PROFILE



ROCK DITCH CHECK
CROSS SECTION

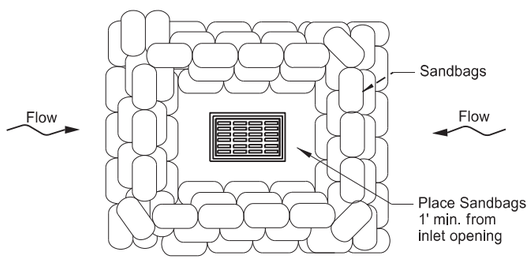


PLAN VIEW

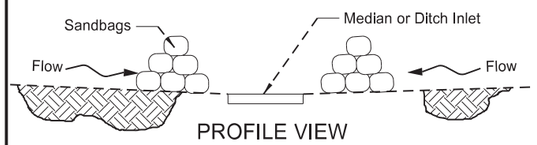


PROFILE VIEW

SANDBAG PROTECTION
(ON SLOPE)

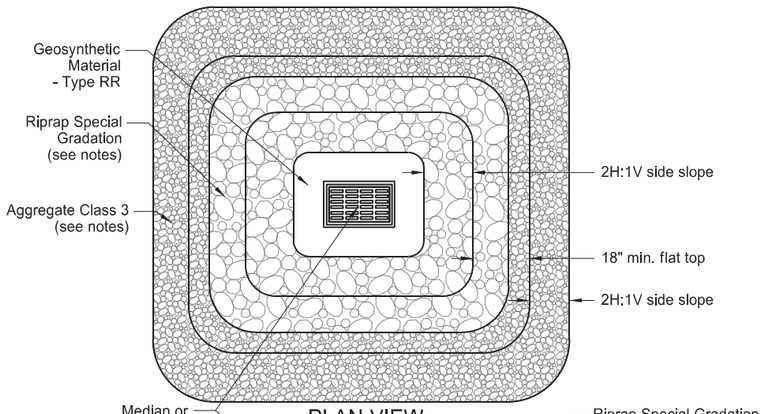


PLAN VIEW

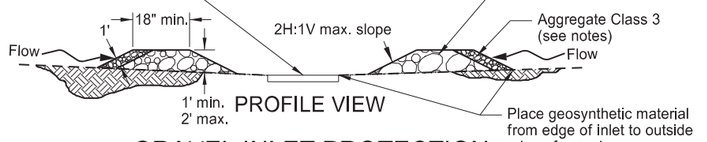


PROFILE VIEW

SANDBAG PROTECTION
(LOW POINT)



PLAN VIEW

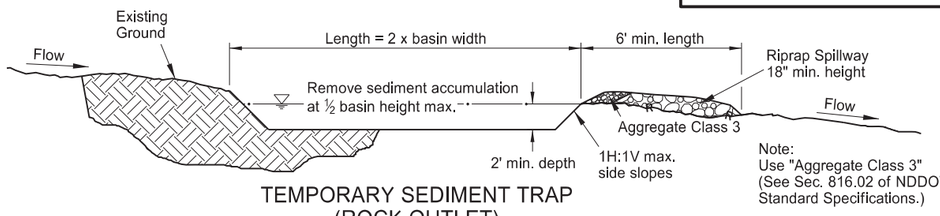


PROFILE VIEW

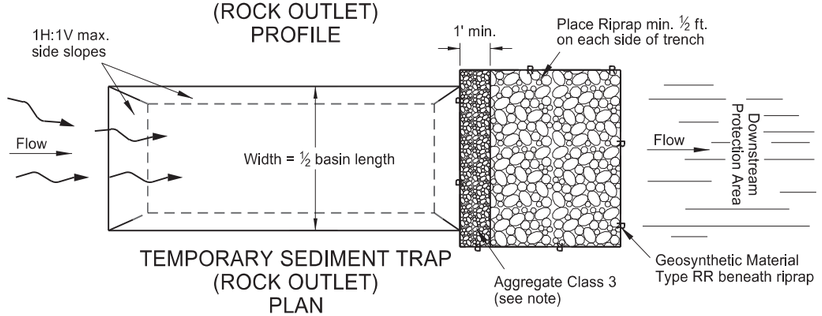
GRAVEL INLET PROTECTION
(MEDIAN OR DITCH INLET)

Notes:
Use 2 in. to 15 in. diameter rock with 20% by weight exceeding 4 in. diameter for "Riprap Special Gradation."

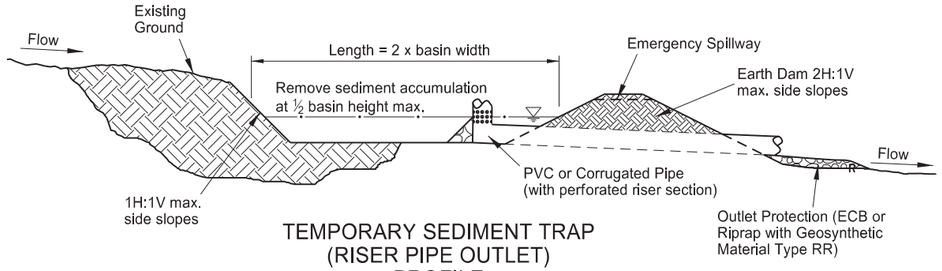
"Aggregate Class 3" (See Sec. 816.02 of NDDOT Standard Specifications.)



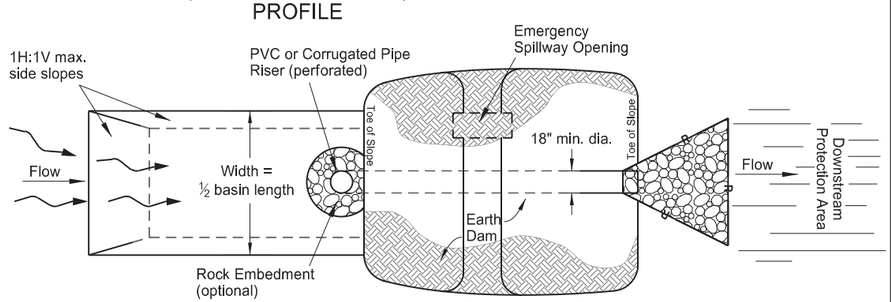
TEMPORARY SEDIMENT TRAP
(ROCK OUTLET)
PROFILE



TEMPORARY SEDIMENT TRAP
(ROCK OUTLET)
PLAN



TEMPORARY SEDIMENT TRAP
(RISER PIPE OUTLET)
PROFILE



TEMPORARY SEDIMENT TRAP
(RISER PIPE OUTLET)
PLAN

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-03-13	
REVISIONS	
DATE	CHANGE
06-26-14	Changed standard drawing number from D-708-2 to D-256-1 Deleted silt fence details
10-17-17	Updated to active voice
08-27-19	New Design Engineer PE Stamp
09-02-25	Added Median Drain Protection

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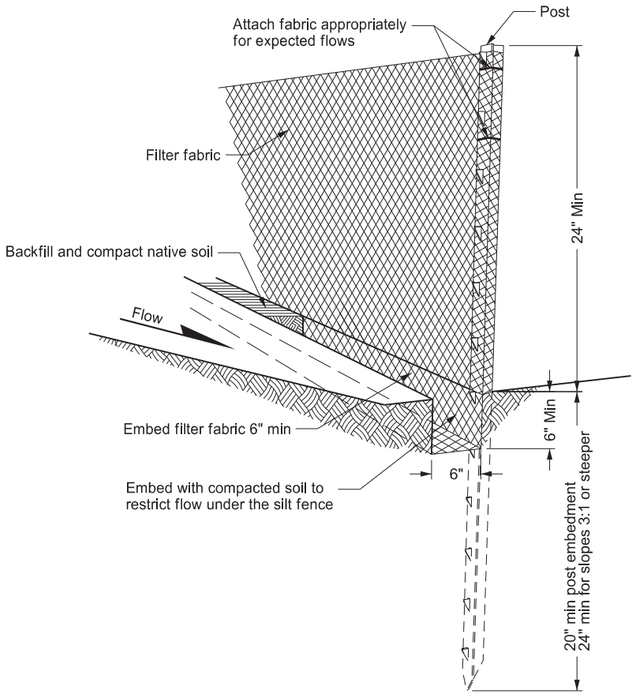
09/02/25

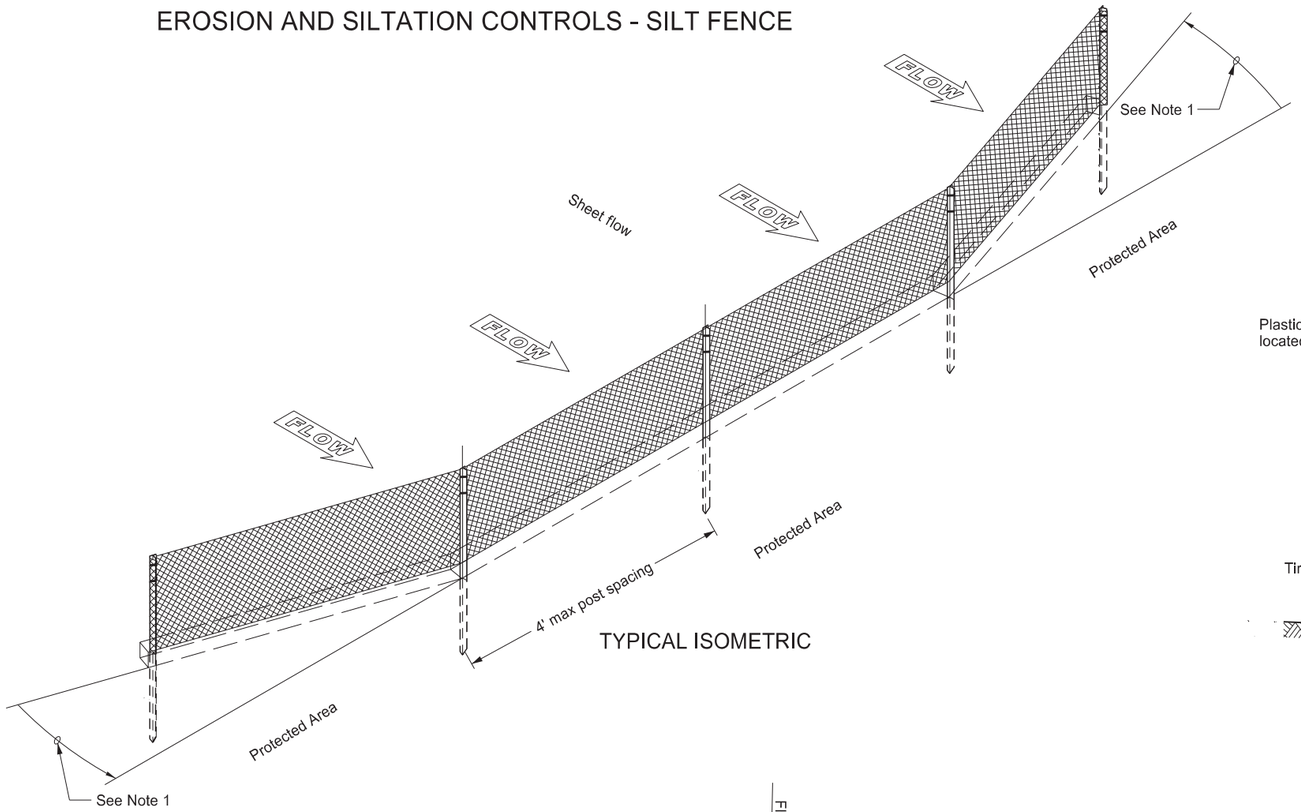
EROSION AND SILTATION CONTROLS - SILT FENCE

D-260-1

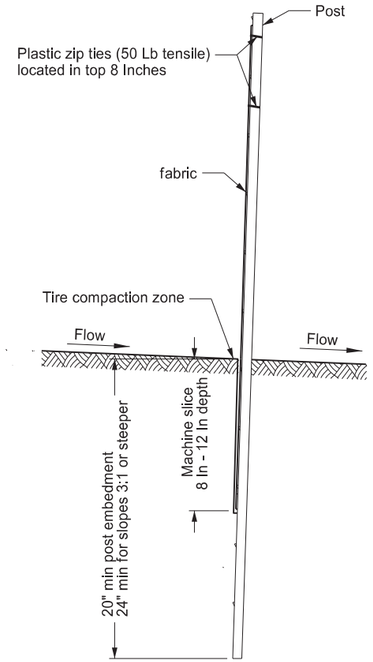


HAND PLACED INSTALLATION DETAIL

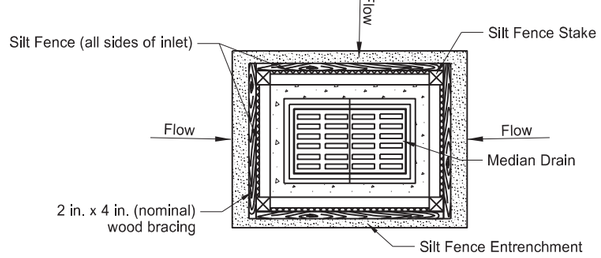
Minimize disturbance of ground around trench and smooth surface after excavation to avoid concentrating flows. Compact to prevent undercutting flows.



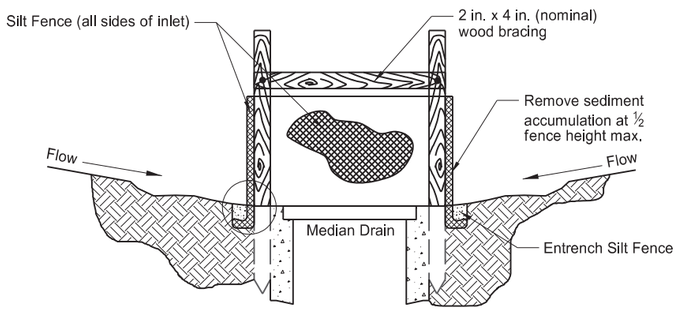
TYPICAL ISOMETRIC



MACHINE SLICED INSTALLATION DETAIL

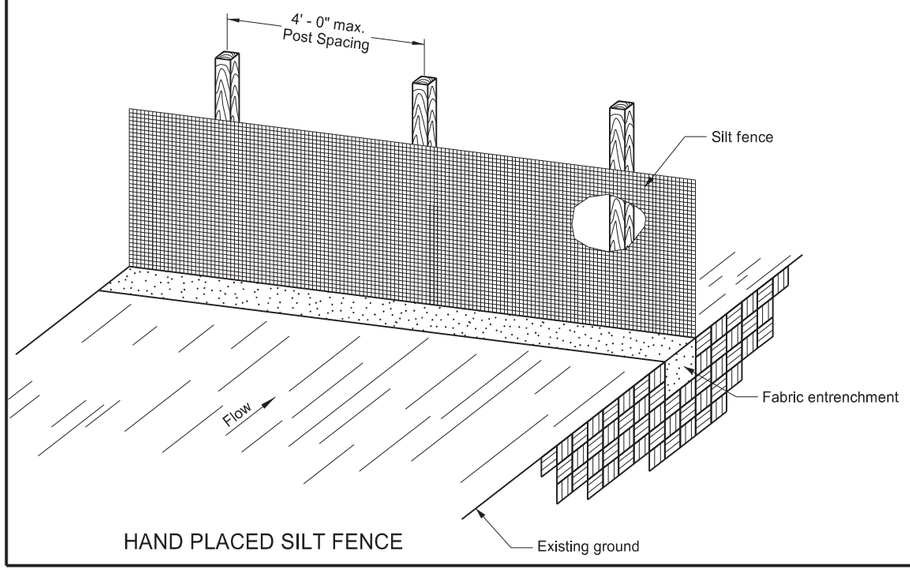


PLAN VIEW



PROFILE VIEW

SILT FENCE PROTECTION (MEDIAN OR DITCH INLET)



HAND PLACED SILT FENCE

NOTES:
1. Install the ends of the silt fence to point slightly upslope to prevent sediment from flowing around the ends of the fence.
2. Place splices outside low spots.
3. Do not embed silt fence placed in standing water.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-03-13	
REVISIONS	
DATE	CHANGE
06-26-14	Standard drawing resulted from splitting standard D-708-2
06-27-16	Revised details & added new ones
08-27-19	New Design Engineer PE Stamp
07-22-25	Matched revised silt fence specs
09-04-25	Added median-ditch inlet protection

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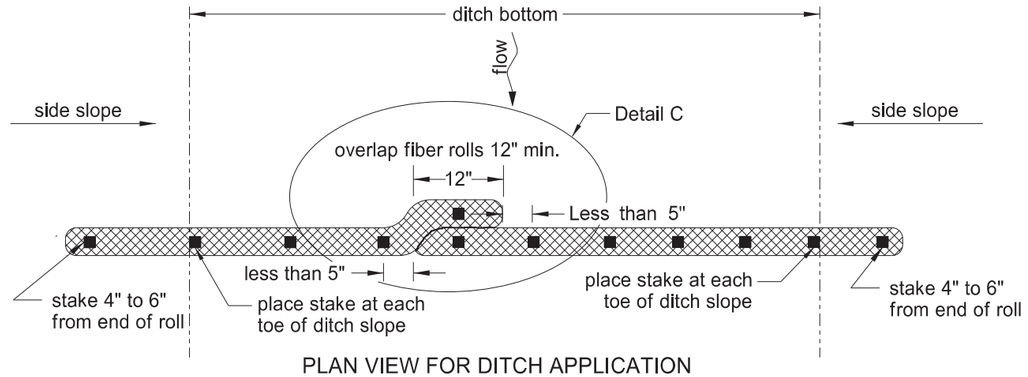
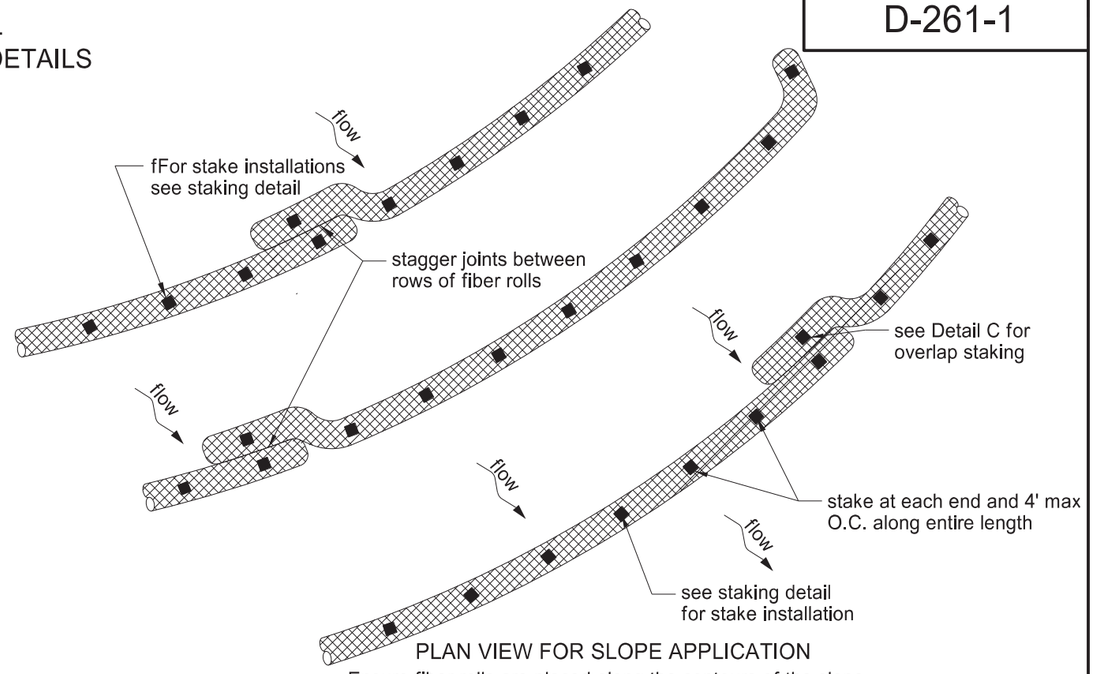
09/04/25

EROSION CONTROL
FIBER ROLL PLACEMENT DETAILS

D-261-1

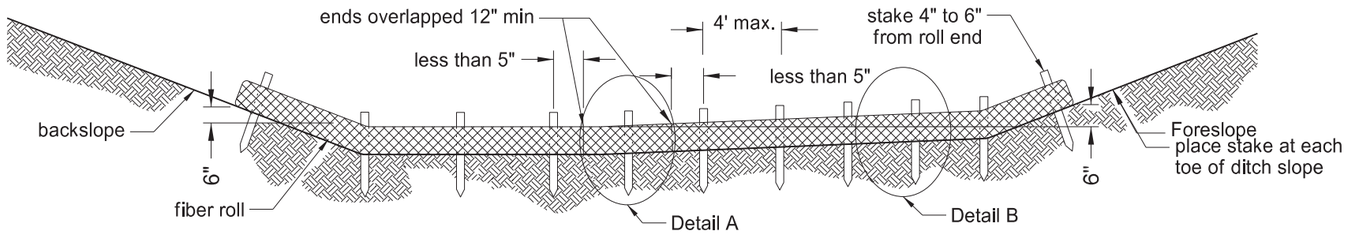


PLAN VIEW FOR DITCH APPLICATION

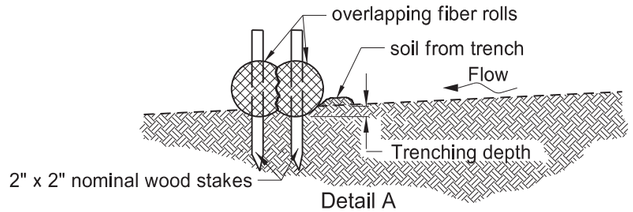


PLAN VIEW FOR SLOPE APPLICATION

Ensure fiber rolls are placed along the contours of the slope.

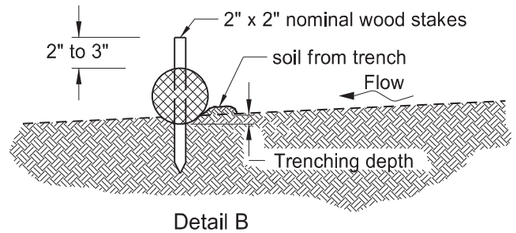


12 OR 20 INCH FIBER ROLL - DITCH BOTTOM



Detail A

FIBER ROLL OVERLAPPING STAKING DETAIL

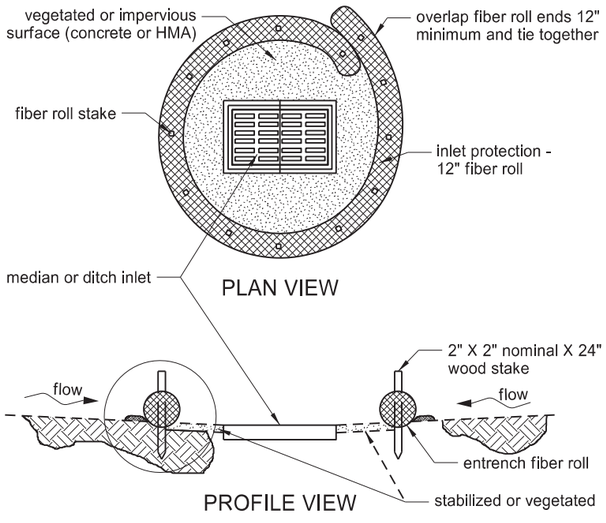


Detail B

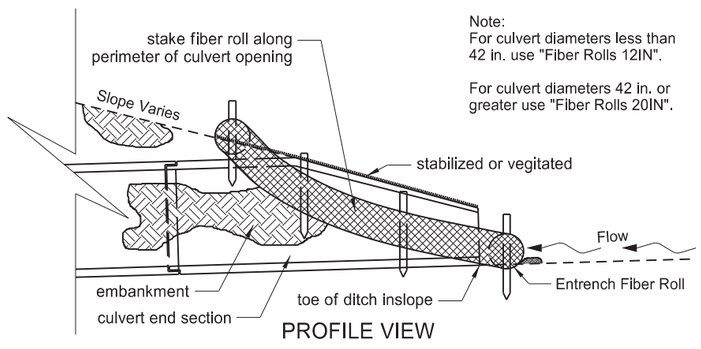
FIBER ROLL STAKING DETAIL

NOTE: Do not allow runoff to run under or around roll.

FIBER ROLL DIAMETER	NOMINAL STAKE SIZE	MINIMUM STAKE LENGTH	TRENCH DEPTH	
			MINIMUM	MAXIMUM
12"	2" x 2"	24"	2"	3"
20"	2" x 2"	36"	3"	5"

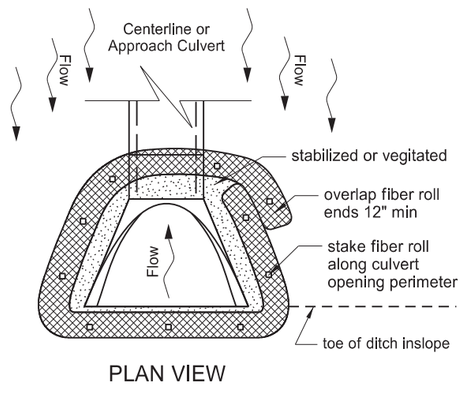


FIBER ROLL PROTECTION (MEDIAN OR DITCH INLET)



Note:
For culvert diameters less than 42 in. use "Fiber Rolls 12IN".

For culvert diameters 42 in. or greater use "Fiber Rolls 20IN".



FIBER ROLL PROTECTION (INLET OF CULVERT)

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-18-10	
REVISIONS	
DATE	CHANGE
06-10-13	Added plan view for ditch and slope application. Added table with values for stake and trench dimensions
10-04-13	Revised fiber roll overlap detail
06-26-14	Changed standard drawing number from D-708-7 to D-261-1
08-27-19	New Design Engineer PE Stamp
04-22-24	Slope Plan View-overlap change
03-13-25	Added D-708-6 Culvert Inlet detail
09-02-25	Added D-708-6 Inlet detail

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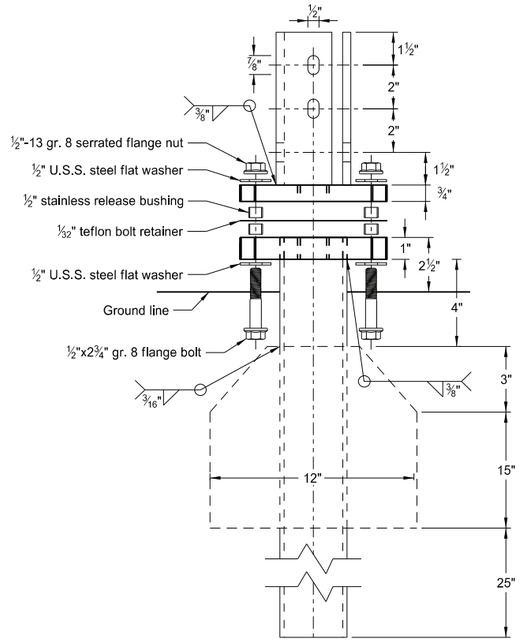
09/02/25

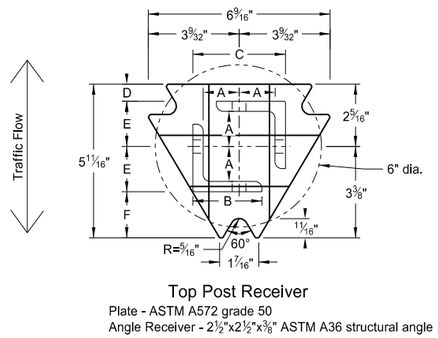
BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS

D-704-7

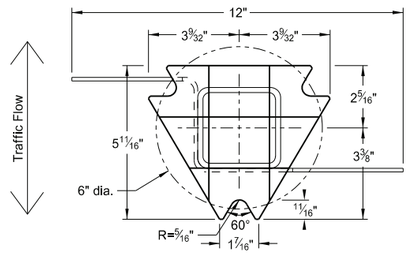


Multi-Directional
Slip Base Assembly

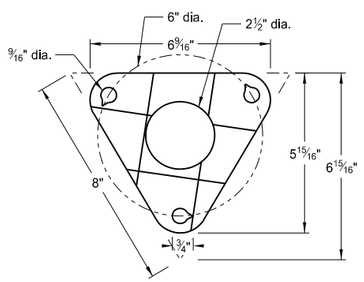
Perforated Tube



Top Post Receiver
Plate - ASTM A572 grade 50
Angle Receiver - 2½"x2½"x⅜" ASTM A36 structural angle



Bottom Soil Stub
Tube - 3"x3"x7 gauge ASTM A500 grade B tube
Stabilizing Wing - 7 gauge H.R.P.O. ASTM A1011
Plate - ASTM A572 grade 50



Bolt Retainer for Base Connection
Bolt Retainer- 1/32" Reprocessed Teflon

Notes:

1. Torque slip base bolts as specified by manufacturer.
2. Use anchor with 43.9 KSI yield strength and 59.3 KSI tensile strength.
3. Provide 4" vertical clearance for anchor or breakaway base. Measure the 4"x60" measurement above and below post location and back and ahead of post.
4. In concrete sidewalk, use same anchor without wings.
5. Provide more than 7' between the first and fourth posts of a four post sign.

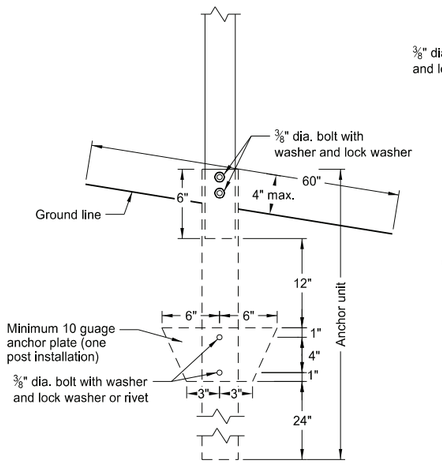
Telescoping Perforated Tube						
Number of Posts	Post Size in.	Wall Thick-ness Gauge	Sleeve Size in.	Wall Thick-ness Gauge	Slip Base	Anchor Size without Slip Base in.
1	2	12			No	2¼
1	2¼	12			No	2½
1	2½	12			(A)	3
1	2½	10			Yes	
1	2¼	12	2	12	Yes	
1	2½	12	2¼	12	Yes	
2	2	12			No	2¼
2	2¼	12			No	2½
2	2½	12			Yes	
2	2½	12			Yes	
2	2¼	10	2	12	Yes	
2	2½	12	2¼	12	Yes	
3 & 4	2½	12			Yes	
3 & 4	2½	10			Yes	
3 & 4	2½	12	2¼	12	Yes	
3 & 4	2¼	12	2	12	Yes	
3 & 4	2½	10	2 3/16	10	Yes	

Properties of Telescoping Perforated Tube						
Tube Size in.	Wall Thickness in.	U.S. Standard Gauge	Weight per Foot lbs.	Moment of Inertia in.⁴	Cross Sec. Area in.²	Section Modulus in.³
1½ x 1½	0.105	12	1.702	0.129	0.380	0.172
2 x 2	0.105	12	2.416	0.372	0.590	0.372
2¼ x 2¼	0.105	12	2.773	0.561	0.695	0.499
2 3/16 x 2 3/16	0.135	10	3.432	0.605	0.841	0.590
2½ x 2½	0.105	12	3.141	0.804	0.803	0.643
2½ x 2½	0.135	10	4.006	0.979	1.010	0.785

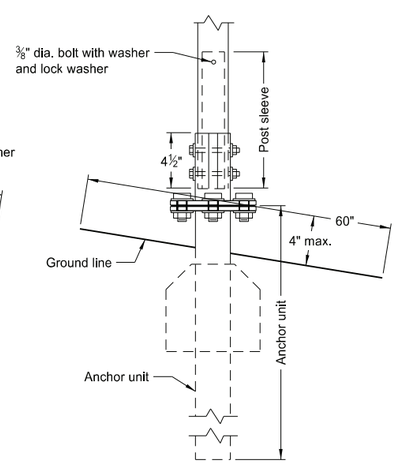
Top Post Receiver Data Table						
Square Post Sizes (B)	A	B	C	D	E	F
2 3/16"x10 ga.	1 9/64"	2½"	3 1/32"	25/32"	1 33/64"	1 7/8"
2½"x10 ga.	1 9/32"	2½"	3 5/16"	⅝"	1 21/32"	1¾"

(A) Use breakaway base when support is placed in weak soils. Engineer determines if soils are weak.

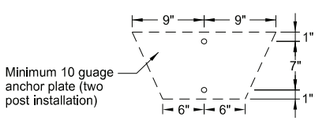
(B) For additional wind load, insert the 2 3/16"x10 ga. into 2½"x10 ga.



Anchor Unit and Post Assembly



Multi-Directional
Slip Base Anchor Unit
and Post Sleeve Assembly



NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE
9-27-17	Updated to active voice
10-03-19	New Design Engr PE Stamp
8-01-24	Electronic Stamp/Signature

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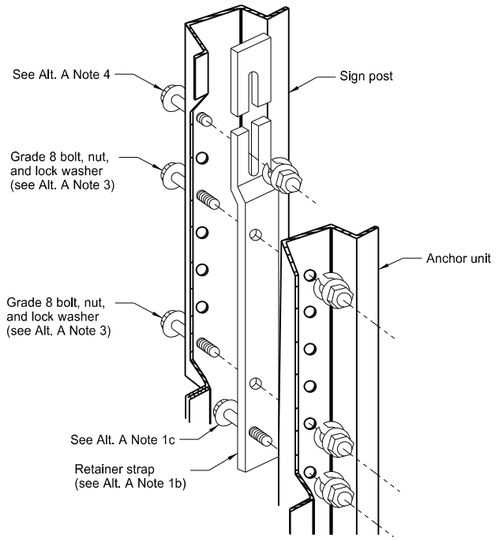
08/01/24

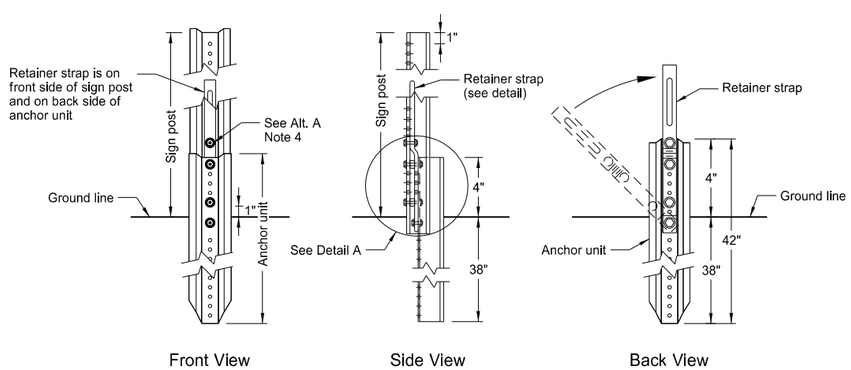
BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS

D-704-8

U-Channel Post



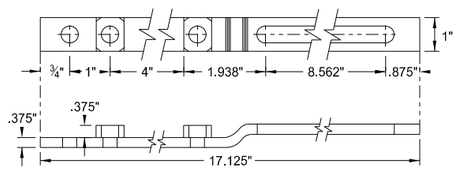
Detail A



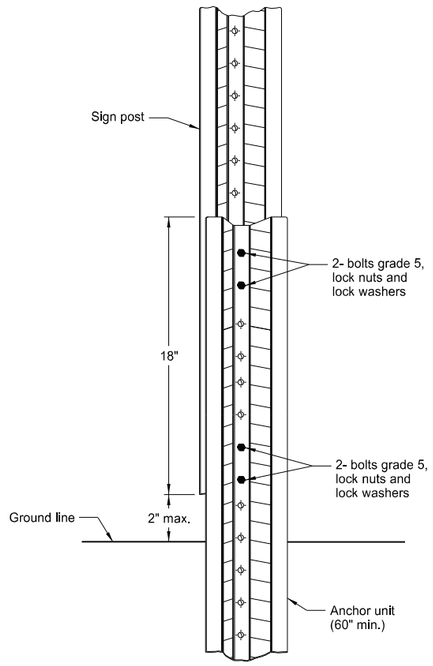
Front View | Side View | Back View

Breakaway U-Channel Detail Alternate A

Install a maximum of 2 posts within 7'.

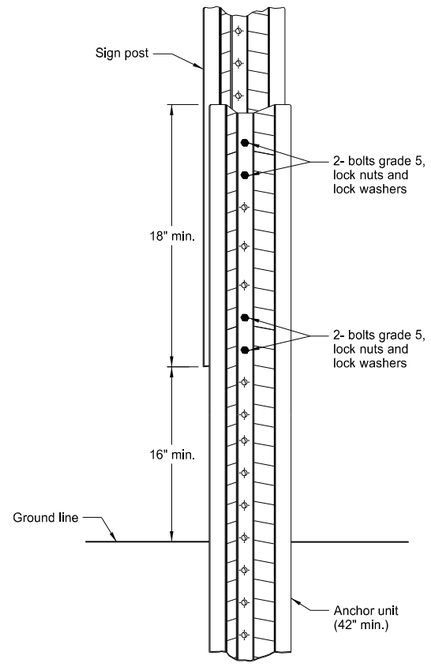


Retainer Strap Detail



Breakaway U-Channel Splice Detail Alternate B (2.5 and 3 lb/ft)

Install a maximum of 3 posts within 7'.



Breakaway U-Channel Splice Detail Alternate C (2.5 and 3 lb/ft)

Install a maximum of 3 posts within 7'.

Alternate A Steps of Installation:

1. a) Drive anchor unit to within 12" of ground level.
   b) Establish proper assembly by lining up bottom hole of retainer strap with 6th hole from the top of the anchor unit.
   c) Assemble strap to back of anchor unit using 5/16"x2" bolt, lock washer and nut.
   d) Rotate strap 90° to left.
2. a) Drive anchor unit to 4" above ground.
   b) Rotate strap to vertical position.
3. a) Place 5/16"x2" bolt, lock washer and nut in bottom of sign post to facilitate alignment of sign post with proper hole in anchor unit.
   b) Alternately tighten two connector bolts.
4. Complete assembly by tightening 5/16"x2" bolt (this fastens sign post to retainer strap).
5. Properly nest base post, strap, and sign post. Proper nesting occurs when all flat surfaces of the base post, strap, and sign post at the bolts have full contact across the entire width.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE
9-27-17	Updated to active voice
10-03-19	New Design Engr PE Stamp
8-01-24	Electronic Stamp/Signature

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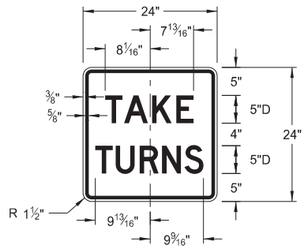
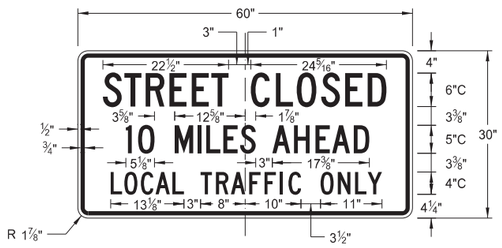
08/01/24

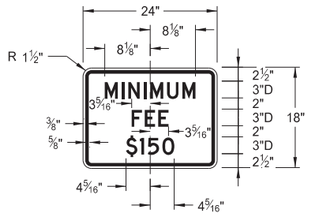
CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS



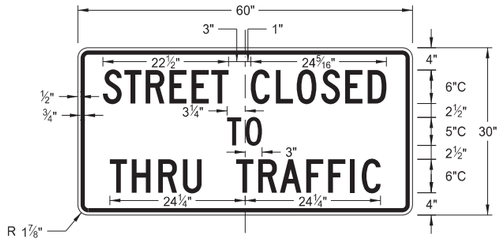
R1-50P-24
Legend: black (non-refl)
Background: white



R11-3c-60
Legend: black (non-refl)
Background: white



R2-1aP-24
Legend: black (non-refl)
Background: white



R11-4a-60
Legend: black (non-refl)
Background: white

R11-2a-48
Legend: black (non-refl)
Background: white

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
08-17-17	Revised sign number
10-03-19	New Design Engineer PE Stamp
08-01-24	Electronic Stamp/Signature
06-30-25	Legislative Changes

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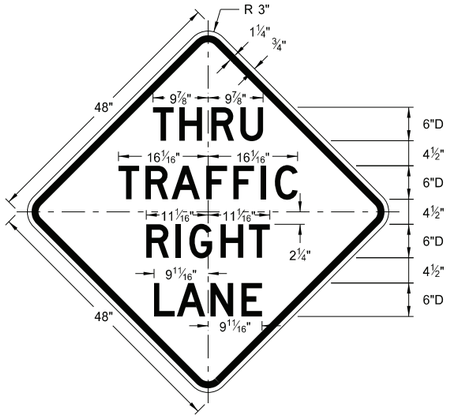
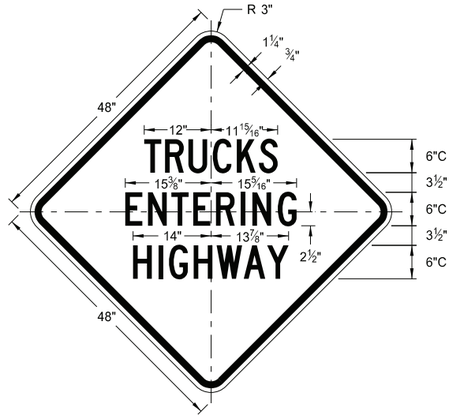
CONSTRUCTION SIGN DETAILS
WARNING SIGNS

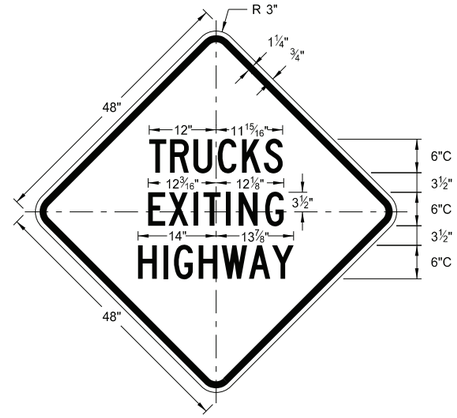
D-704-11



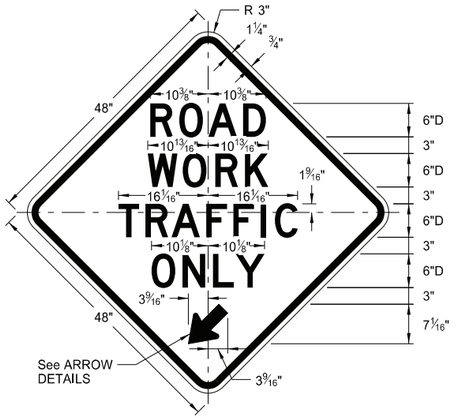
W5-8-48
Legend: black (non-refl)
Background: orange



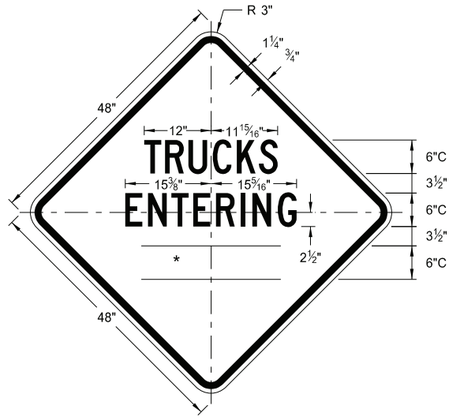
W8-53-48
Legend: black (non-refl)
Background: orange



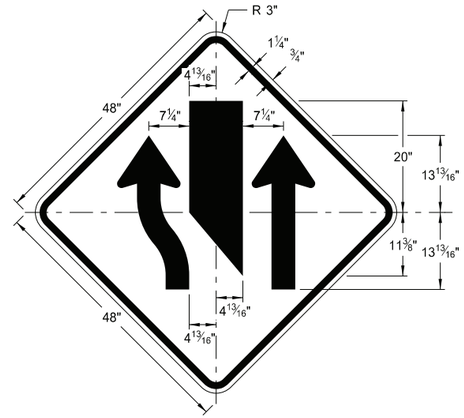
W8-56-48
Legend: black (non-refl)
Background: orange



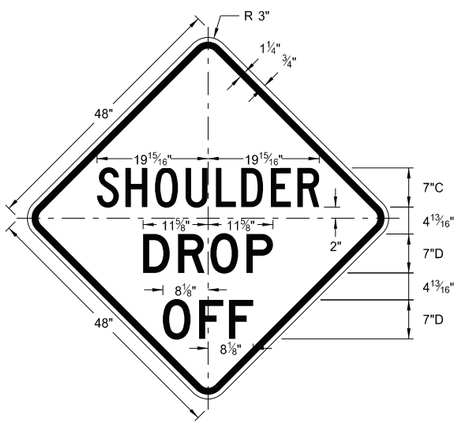
W5-9-48
Legend; black (non-refl)
Background: orange



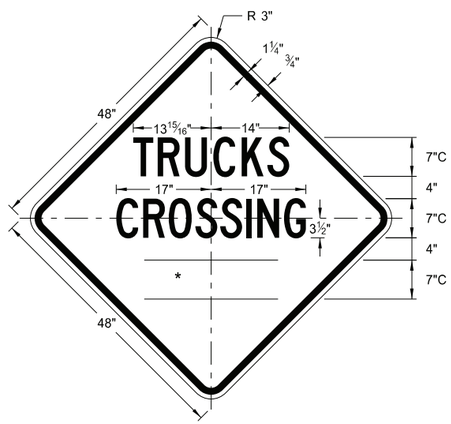
W8-54-48
Legend; black (non-refl)
Background: orange



W9-3a-48
Legend; black (non-refl)
Background: orange



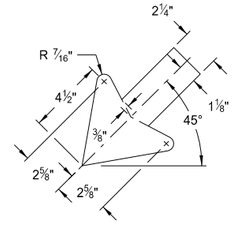
W8-9a-48
Legend: black (non-refl)
Background: orange



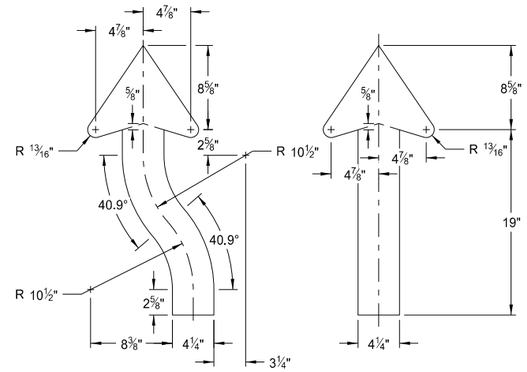
W8-55-48
Legend: black (non-refl)
Background: orange

WORD	LETTER SPACING
AHEAD	Standard
200 FT	Standard
350 FT	Standard
500 FT	Standard
1000 FT	Reduce 40%
1500 FT	Reduce 40%
½ MILE	Reduce 50%
1 MILE	Standard

* DISTANCE MESSAGES



W5-9-48



W9-3a-48

ARROW DETAILS

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17	Updated sign number
5-31-18	Revised sign and arrow details
10-03-19	New Design Engineer PE Stamp
8-01-24	Electronic Stamp/Signature

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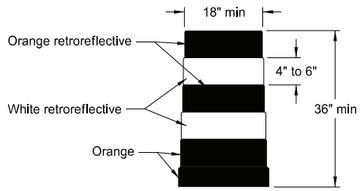
08/01/24

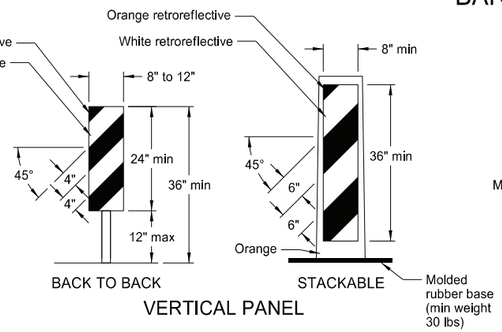
BARRICADE AND CHANNELIZING DEVICE DETAILS

D-704-13



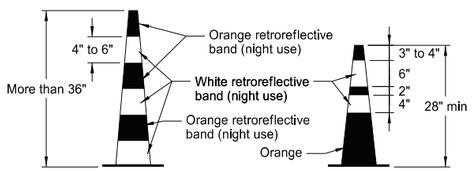
DELINEATOR DRUM

Provide horizontal, circumferential, alternating orange and white retroreflective stripes 4" to 6" wide for drum markings. Use a minimum of two orange and two white stripes with the top stripe being orange for each drum. Do not exceed 3" nonretroreflectorized spaces between the horizontal orange and white stripes. Avoid placement of stripes on drum ribs or indentations. Use closed top drums that will not allow collection of debris. Do not place ballast on the top of drum.



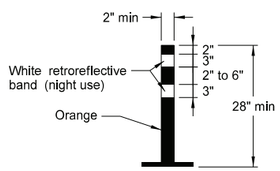
VERTICAL PANEL

Provide alternating orange and white retroreflective stripes, sloping downward in direction vehicular traffic is to pass. Place retroreflective sheeting on both sides of panel with a minimum of 270 square inches of retroreflective area facing vehicular traffic. Where the height of the retroreflective material on the vertical panel is 36 inches or more, use a stripe width of 6 inches.



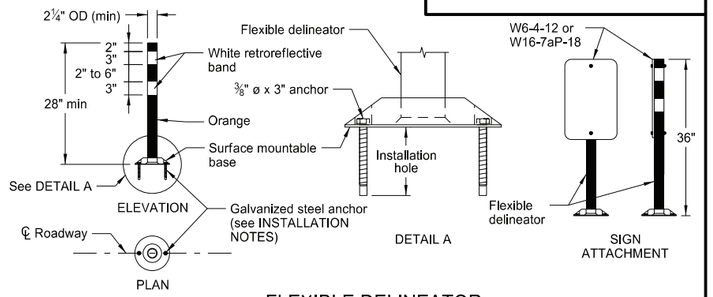
TRAFFIC CONE

Provide retroreflectorization of cones more than 36" in height by alternating orange and white retroreflective stripes. Use a minimum of two orange and two white stripes for each cone with the top stripe being orange. Use maximum 3" nonretroreflectorized space between the orange and white stripes.



TUBULAR MARKER

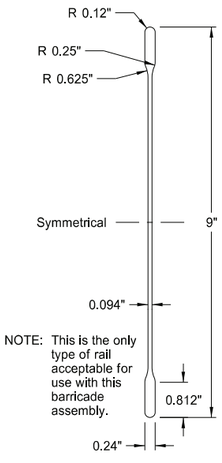
Provide retroreflectorization of tubular markers more than 42" in height by alternating four 4" to 6" wide orange and white stripes with the top stripe being orange.



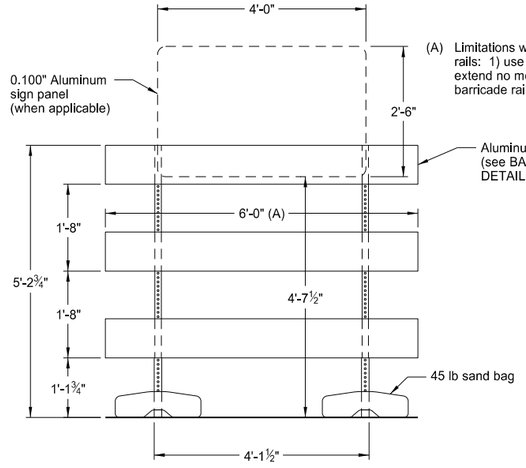
FLEXIBLE DELINEATOR

INSTALLATION NOTES:

1. Drill installation holes to diameter and depth required by manufacturer's specifications.
2. For removal, remove anchors and fill installation hole with an epoxy designed to bond to pavement surface.
3. In lieu of bolted down base, use an 8" x 8" butyl pad or hot melt butyl. Remove butyl as close as possible to pavement surface.

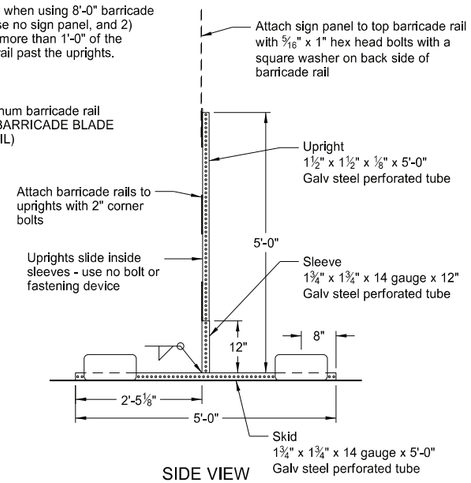


BARRICADE BLADE DETAIL



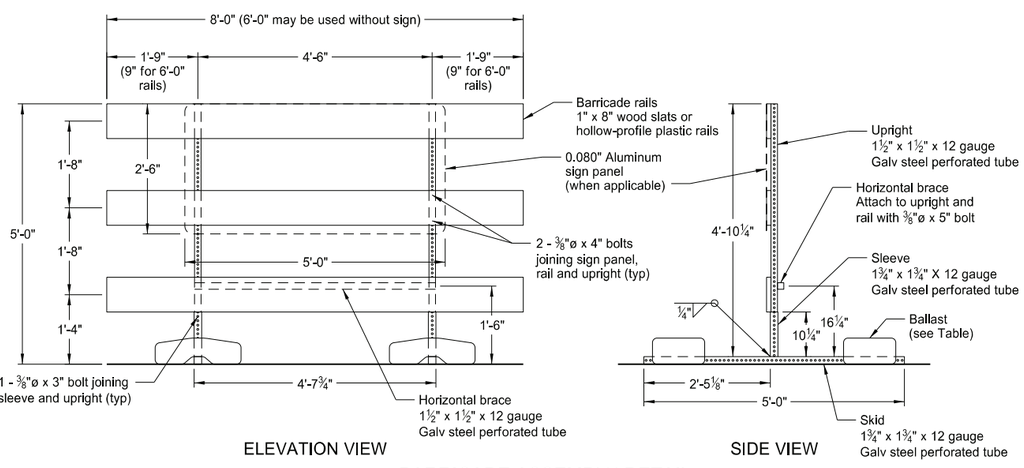
ELEVATION VIEW

(A) Limitations when using 8'-0" barricade rails: 1) use no sign panel, and 2) extend no more than 1'-0" of the barricade rail past the uprights.



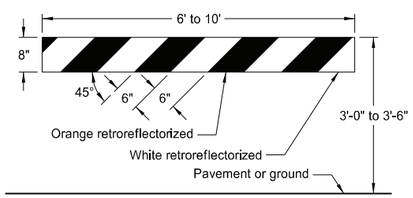
SIDE VIEW

BARRICADE ASSEMBLY DETAIL (Aluminum Barricade Rails)

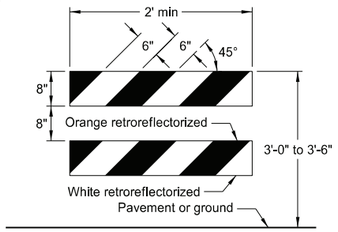


BARRICADE ASSEMBLY DETAIL (Wood or Plastic Rails)

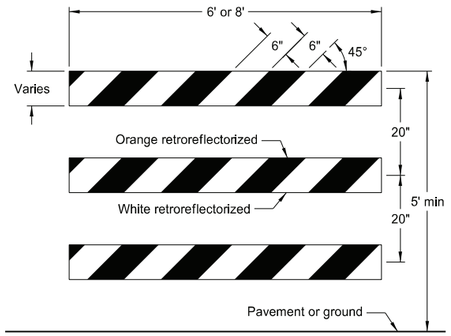
NOTE: For barricade markings use alternating orange and white retroreflective stripes, sloping downward in the direction traffic is to pass. Place retroreflective sheeting on both sides of the rails with a minimum of 270 square inches of visible retroreflective area facing vehicular traffic. When the barricade length is less than 36", use a rail stripe width of 4".



TYPE I BARRICADE

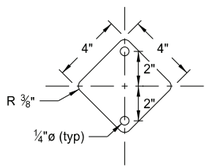


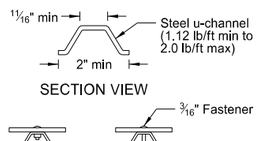
TYPE II BARRICADE

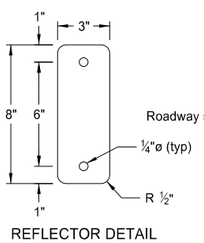


TYPE III BARRICADE

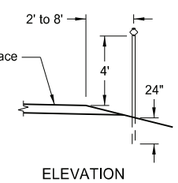
BARRICADE RAIL DETAILS







REFLECTOR DETAIL



ELEVATION

DELINEATORS

MINIMUM BALLAST
(For each side of barricade support)

Without Sign	4 - 25 lb sandbags
With Sign	6 - 25 lb sandbags

Note: Number of sandbags based on a wind speed of 55 MPH. Sandbags assumed to be placed at or near the ends of the skids.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
9-27-17	Updated to active voice
11-01-19	Revised details for Flexible Delineator
8-01-24	Electronic Stamp/Signature

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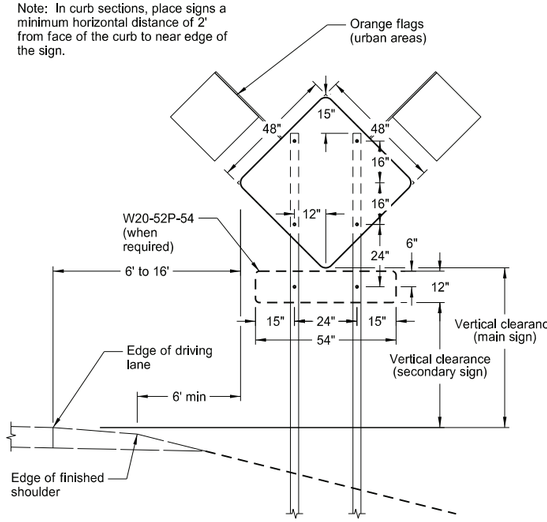
ENGINEER
NORTH DAKOTA

08/01/24

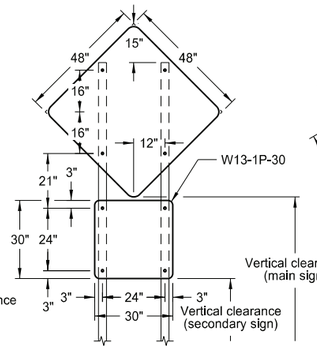
CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

D-704-14

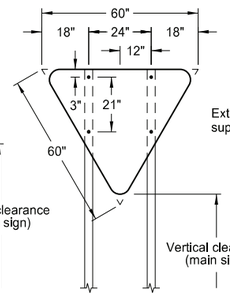
Note: In curb sections, place signs a minimum horizontal distance of 2' from face of the curb to near edge of the sign.



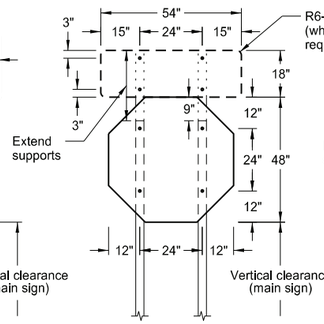
TYPICAL SECTION
(48" x 48" diamond warning sign shown)



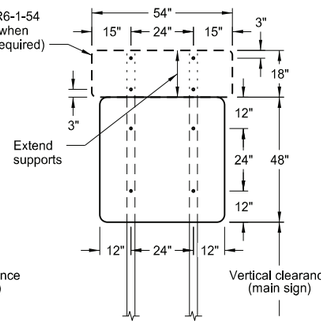
48" x 48" DIAMOND SIGN
(with 30" x 30" secondary sign)



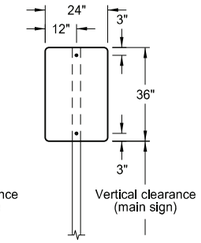
R1-2-60 - YIELD SIGN



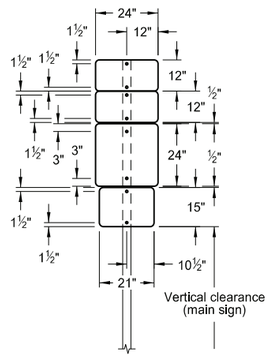
R1-1-48 - STOP SIGN
(with R6-1-54 sign as required)



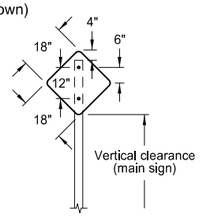
48" x 48" SIGN
(with R6-1-54 sign as required)



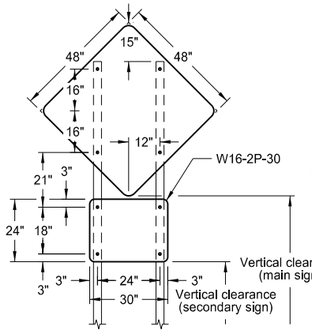
24" x 36" SIGN



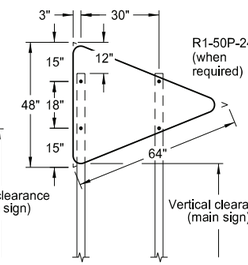
24" x 24"
ROUTE MARKER
ASSEMBLY



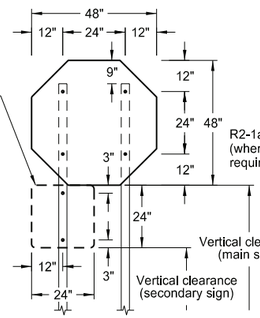
18" x 18"
DIAMOND SIGN



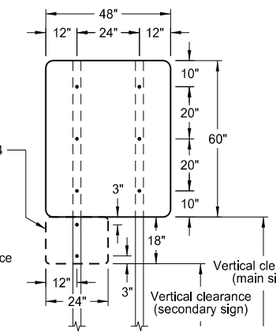
48" x 48" DIAMOND SIGN
(with 30" x 24" secondary sign)



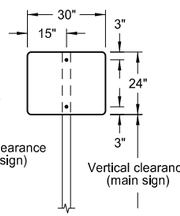
W14-3-64 - PENNANT SIGN



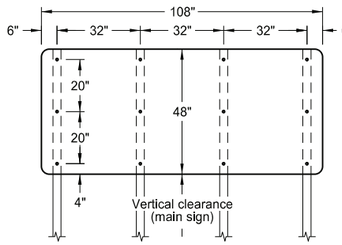
R1-1-48 - STOP SIGN
(with R1-50P-24 sign as required)



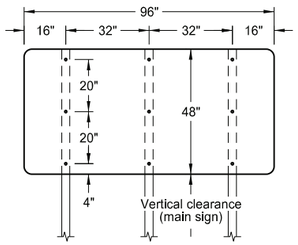
48" x 48" SIGN
(with R2-1aP-24 sign as required)



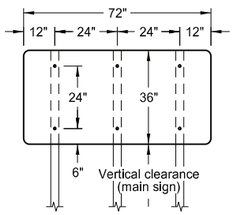
30" x 24" SIGN



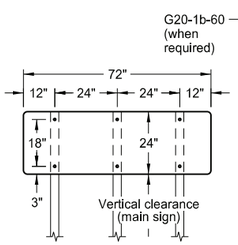
108" x 48" SIGN



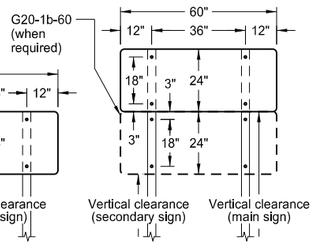
96" x 48" SIGN



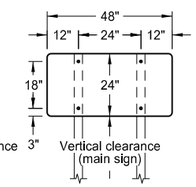
72" x 36" SIGN



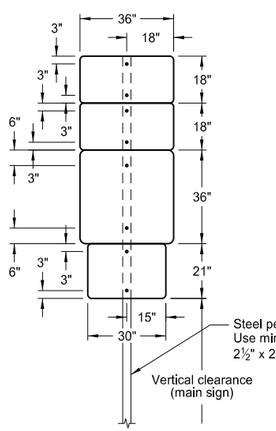
72" x 24" SIGN



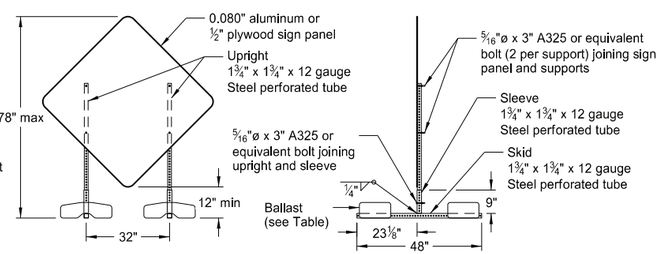
60" x 24" SIGN



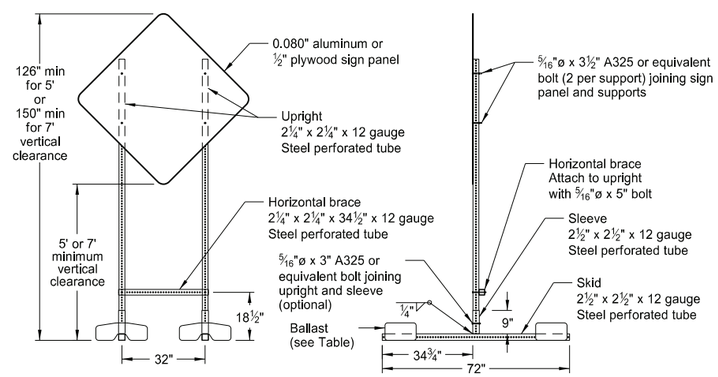
48" x 24" SIGN



36" x 36"
ROUTE MARKER
ASSEMBLY



PORTABLE SIGN SUPPORT
LOW-MOUNTING HEIGHT



PORTABLE SIGN SUPPORT
HIGH-MOUNTING HEIGHT

NOTES:

1. Sign Supports: Galvanize or paint supports. Minimum post sizes are 2.5 lb/ft u-channel or 2" x 2" x 12 gauge steel perforated tube, except where noted. When installing signs on u-channel, minimum post size for assemblies containing a secondary sign is 3.0 lb/ft. Post sizes based on a wind speed of 55 MPH.

   Place signs over 50 square feet on 2½" x 2½" perforated tube supports as a minimum.

   Do not attach guy wires to sign supports. Attach wind beams behind sign panels when used with u-posts.

2. Sign Panels: Provide sign panels made of 0.100" aluminum, ½" plywood, or other approved material, except where noted. Punch all holes round for ⅜" bolts.

3. Alternate Messages: Install and remove alternate message signs on reflectorized plate (without borders) as required. (i.e. "Left" and "Right" message on lane closure sign)

4. Route Marker Auxiliary Signs: Provide route marker auxiliary signs, such as the cardinal direction and directional arrows, with a background and legend that match the route marker they are used with:

   Interstate - white legend on blue background
   Interstate Business Loop - white legend on green background
   US and State - black legend on white background
   County - yellow legend on blue background

5. Vertical Clearance: Install signs with a vertical clearance of 5'-0" (see TYPICAL SECTION.) In areas where parking or pedestrian movements are likely or the view of the sign may be obstructed, install signs with a vertical clearance of 7'-0" from the top of the curb or from the near edge of the driving lane in absence of a curb.

   The vertical clearance to secondary signs is 1'-0" less than the vertical clearance stated above.

   Provide a minimum clearance of 7'-0" from the ground at the post for signs with an area exceeding 50 square feet.

6. Portable Signs: Provide portable signs that meet the vertical clearance stated above when it is necessary to place signs within the pavement surface.

   Use of low-mounting height (minimum 12" vertical clearance) portable signs for 5 days or less, is allowed as long as the view of the sign is not obstructed. Time delays caused by unforseen circumstances, such as equipment breakdown, rain, subgrade failures, etc., will not accrue towards the 5 day period. Use of R9-8 through R9-11a series, W1-6 through W1-8 series, M4-10, and E5-1 is allowed for longer than 5 days.

   Restrict signs mounted on portable sign supports shown in the LOW-MOUNTING HEIGHT and HIGH-MOUNTING HEIGHT details to a maximum surface area of 16 square feet.

MINIMUM BALLAST
(For each side of sign support base)

Sign Panel Mounting Height (ft)	Number of 25 lb sandbags for 4' x 4' sign panel
1'	6
5'	8
7'	10

Note: The number of sandbags are based on a wind speed of 55 MPH. Place sandbags at or near the ends of skids.

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

10-4-13

REVISIONS

DATE	CHANGE
11-14-13	Revised Note 6
9-27-17	Updated to active voice
11-01-19	Revised 60"x24" sign detail
8-01-24	Electronic Stamp/Signature

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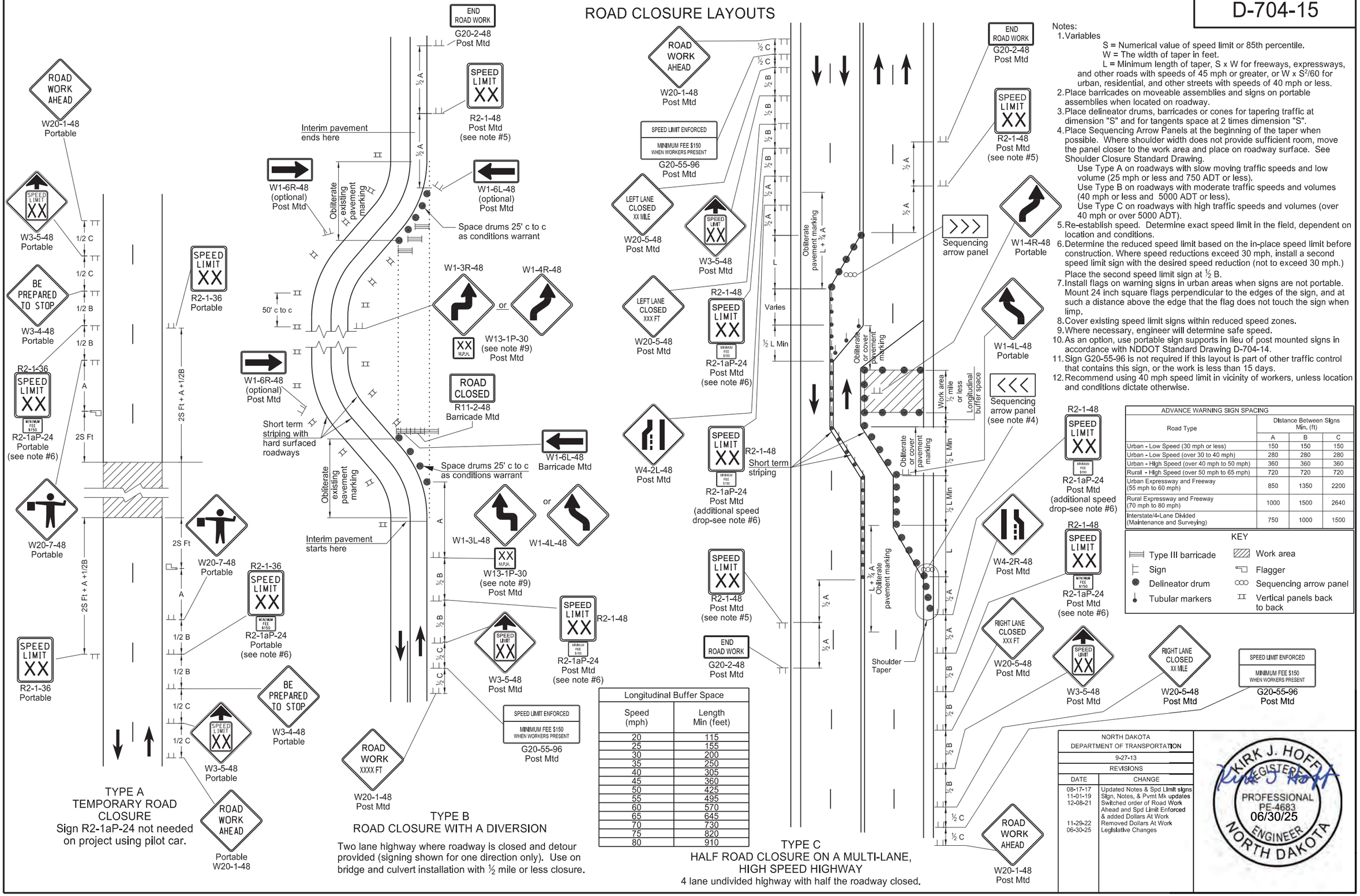
NORTH DAKOTA

08/01/24

ROAD CLOSURE LAYOUTS



Longitudinal Buffer Space	
Speed (mph)	Length Min (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

TYPE C
HALF ROAD CLOSURE ON A MULTI-LANE, HIGH SPEED HIGHWAY
4 lane undivided highway with half the roadway closed.

Notes:
1. Variables
   S = Numerical value of speed limit or 85th percentile.
   W = The width of taper in feet.
   L = Minimum length of taper, S x W for freeways, expressways, and other roads with speeds of 45 mph or greater, or W x $S^2/60$ for urban, residential, and other streets with speeds of 40 mph or less.
2. Place barricades on moveable assemblies and signs on portable assemblies when located on roadway.
3. Place delineator drums, barricades or cones for tapering traffic at dimension "S" and for tangents space at 2 times dimension "S".
4. Place Sequencing Arrow Panels at the beginning of the taper when possible. Where shoulder width does not provide sufficient room, move the panel closer to the work area and place on roadway surface. See Shoulder Closure Standard Drawing.
   Use Type A on roadways with slow moving traffic speeds and low volume (25 mph or less and 750 ADT or less).
   Use Type B on roadways with moderate traffic speeds and volumes (40 mph or less and 5000 ADT or less).
   Use Type C on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).
5. Re-establish speed. Determine exact speed limit in the field, dependent on location and conditions.
6. Determine the reduced speed limit based on the in-place speed limit before construction. Where speed reductions exceed 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at ½ B.
7. Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
8. Cover existing speed limit signs within reduced speed zones.
9. Where necessary, engineer will determine safe speed.
10. As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
11. Sign G20-55-96 is not required if this layout is part of other traffic control that contains this sign, or the work is less than 15 days.
12. Recommend using 40 mph speed limit in vicinity of workers, unless location and conditions dictate otherwise.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 80 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

KEY
- Type III barricade
- Sign
- Delineator drum
- Tubular markers
- Work area
- Flagger
- Sequencing arrow panel
- Vertical panels back to back

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

9-27-13

REVISIONS

DATE	CHANGE
08-17-17	Updated Notes & Spd Limit signs
11-01-19	Sign, Notes, & Pvmt Mk updates
12-08-21	Switched order of Road Work Ahead and Spd Limit Enforced & added Dollars At Work
11-29-22	Removed Dollars At Work
06-30-25	Legislative Changes

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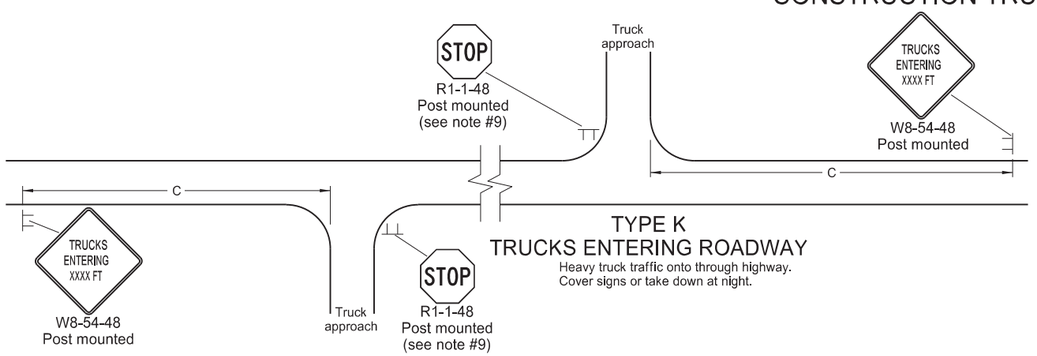
CONSTRUCTION TRUCK AND TEMPORARY DETOUR LAYOUTS

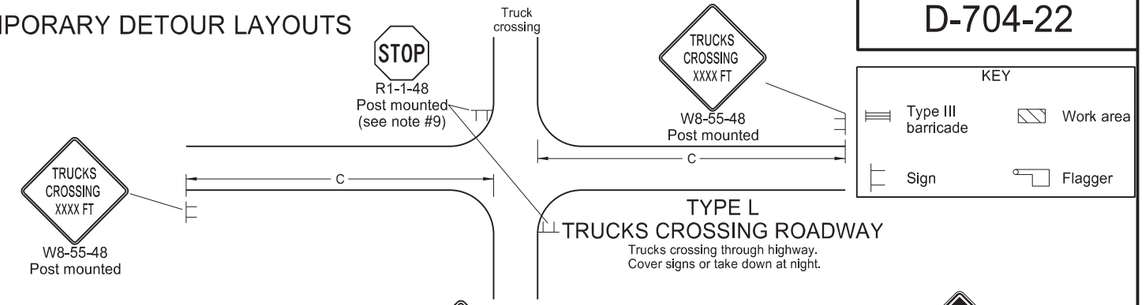
D-704-22

KEY: Type III barricade; Work area; Sign; Flagger



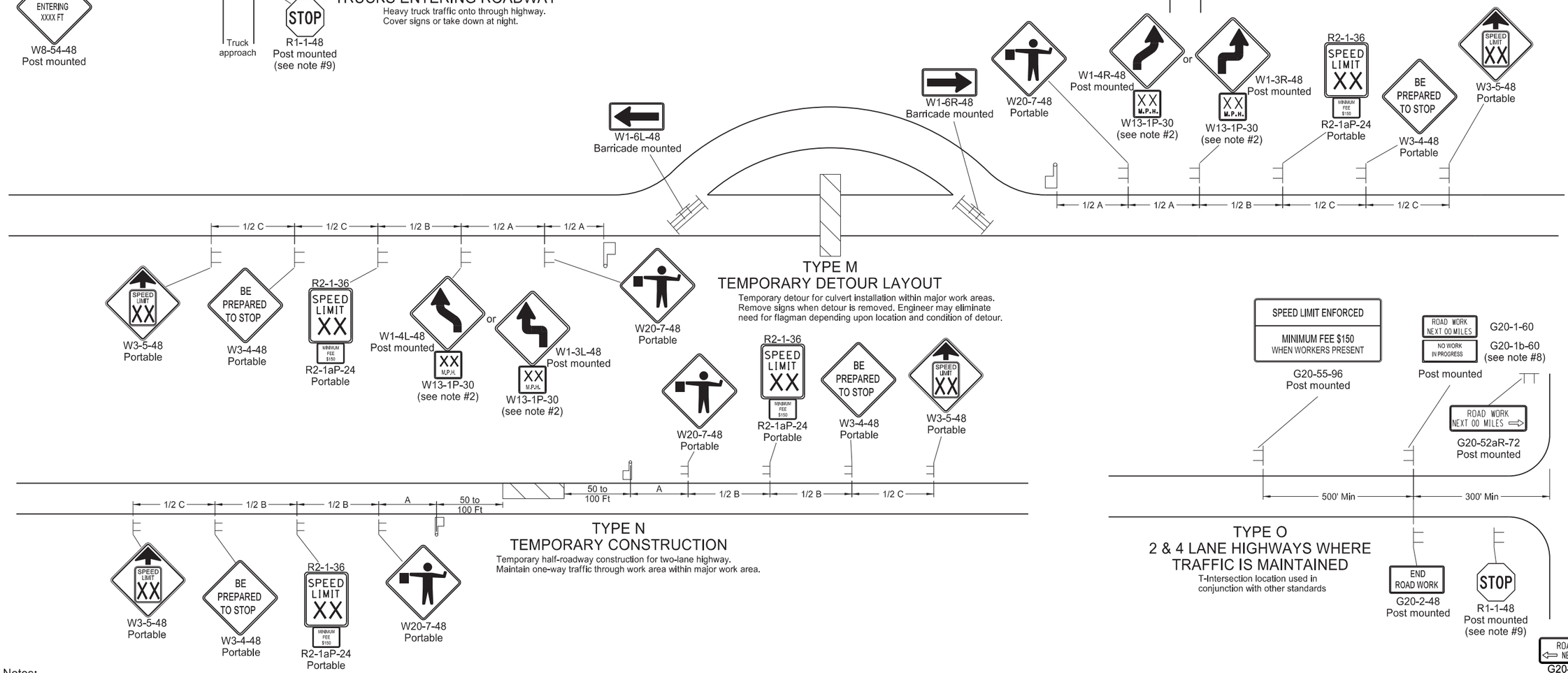
TYPE K
TRUCKS ENTERING ROADWAY

Heavy truck traffic onto through highway.
Cover signs or take down at night.



TYPE L
TRUCKS CROSSING ROADWAY

Trucks crossing through highway.
Cover signs or take down at night.

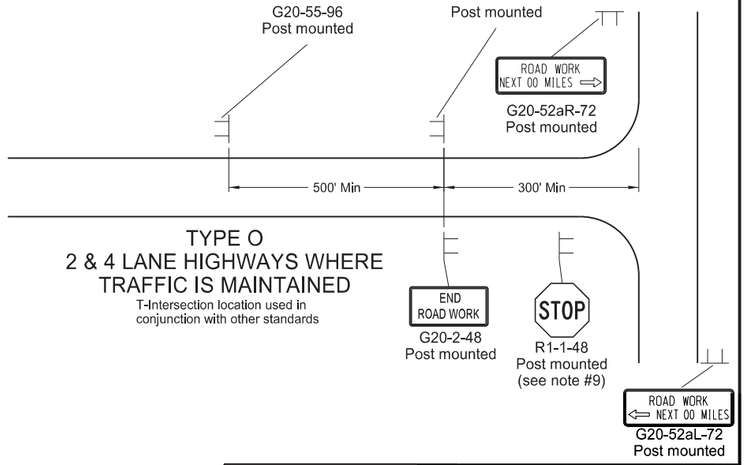


TYPE M
TEMPORARY DETOUR LAYOUT

Temporary detour for culvert installation within major work areas.
Remove signs when detour is removed. Engineer may eliminate need for flagman depending upon location and condition of detour.

TYPE N
TEMPORARY CONSTRUCTION

Temporary half-roadway construction for two-lane highway.
Maintain one-way traffic through work area within major work areas.



TYPE O
2 & 4 LANE HIGHWAYS WHERE TRAFFIC IS MAINTAINED

T-Intersection location used in conjunction with other standards

Notes:

1. Place barricades on a moveable assemblies and signs on portable assemblies when located on roadway.
2. Where necessary, safe speed to be determined by the Engineer.
3. Determine the reduced speed limit based on the in-place speed limit before construction. Where speed reductions exceed 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at ½ B.
4. Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
5. Cover existing speed limit signs within a reduced speed zone.
6. Covered (when approved by engineer) or obliterated pavement marking measured as Obliteration of Pavement Marking.
7. As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
8. Install sign G20-1b-60 when work is suspended for winter.
9. If existing stop sign is in place, a 48" stop sign is not required.
10. Sign G20-55-96 is not required if layout is part of other traffic control that contains this sign, or if work is less than 15 days.
11. Recommend using 40 mph speed limit in vicinity of workers, unless location and conditions dictate otherwise.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 80 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

9-27-13

REVISIONS

DATE	CHANGE
08-17-17	Update notes & sign numbers
11-01-19	Revised sign numbers & note 7
12-09-21	Added Speed Limit Enforced and Dollars At Work signs
11-29-22	Removed Dollars At Work
06-30-25	Legislative Changes

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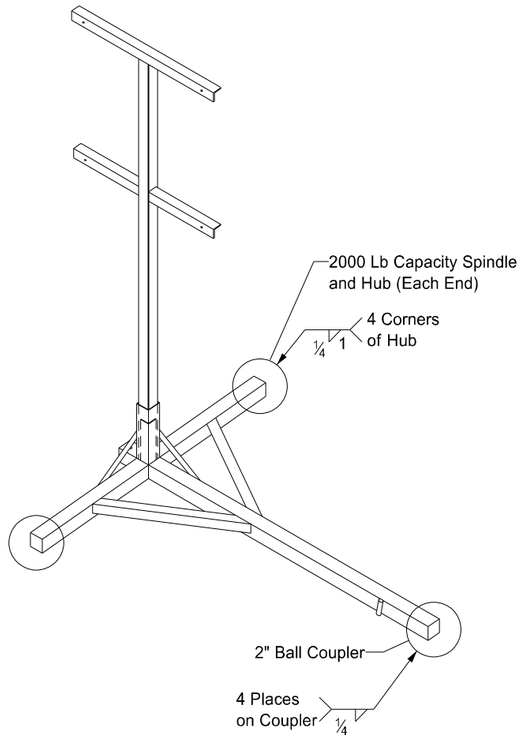
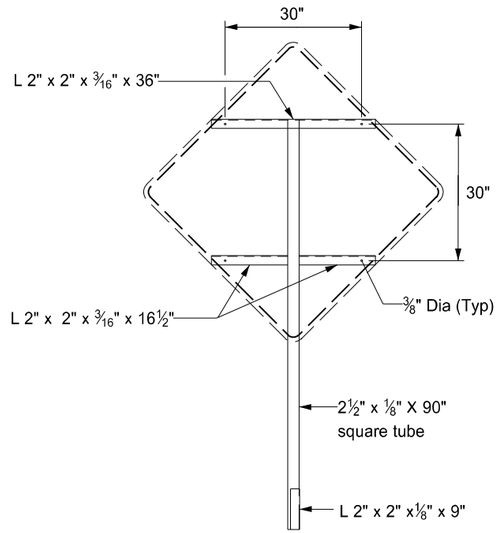
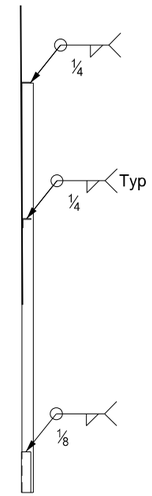
PORTABLE SIGN SUPPORT ASSEMBLY

D-704-50





FRONT

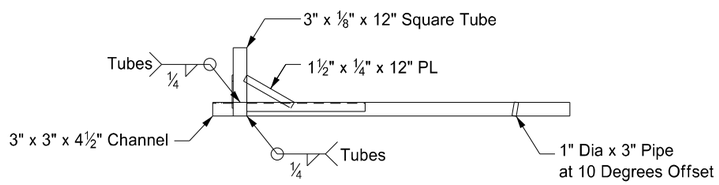


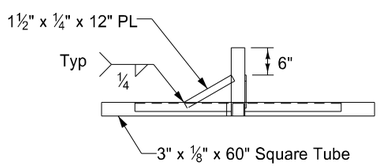
RIGHT

SIGN SUPPORT

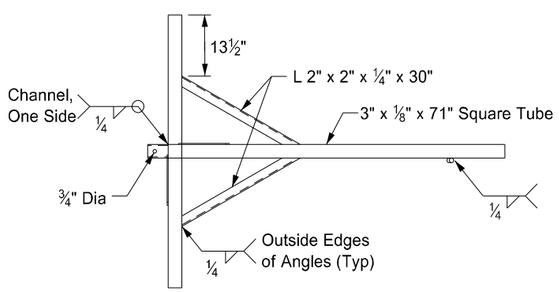
Notes:

1. Maximum 250 pound weight of assembly.
2. Use a 14" wheel and tire.
3. Use no automotive and equipment axle assemblies for trailer-mounted sign supports.
4. Other NCHRP 350 or MASH crash tested assemblies are acceptable.





RIGHT



TOP

TRAILER

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-23-10	
REVISIONS	
DATE	CHANGE
12/02/2020	Updated Note to active voice.

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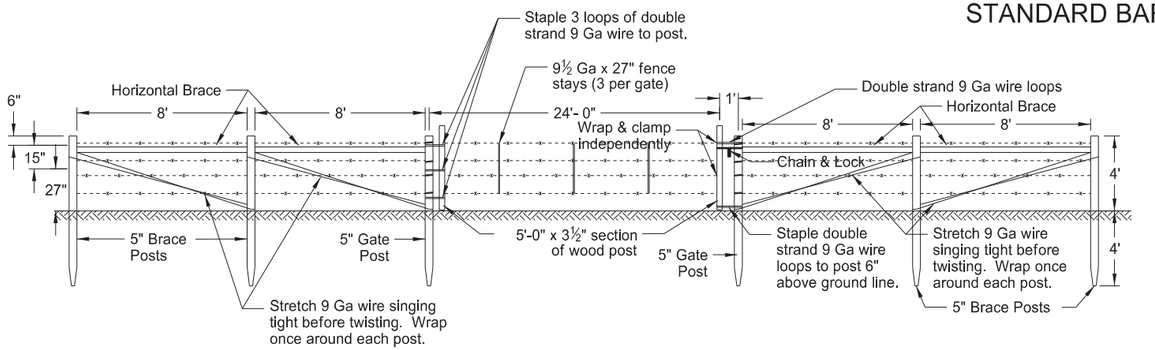
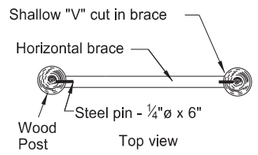
12 02 2020

STANDARD BARBED WIRE FENCE

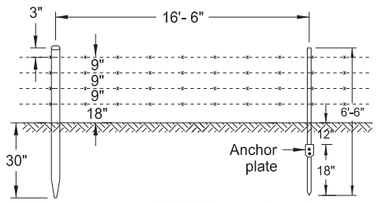
D-752-1



VEHICLE GATE



HORIZONTAL BRACE DETAIL



NOTES

1. No deduction in measured pay length of fence made for gates, corner assemblies, double brace assemblies, fence terminals, or depression fencing. Include all costs for abutment fencing in the price bid for fencing bid items.

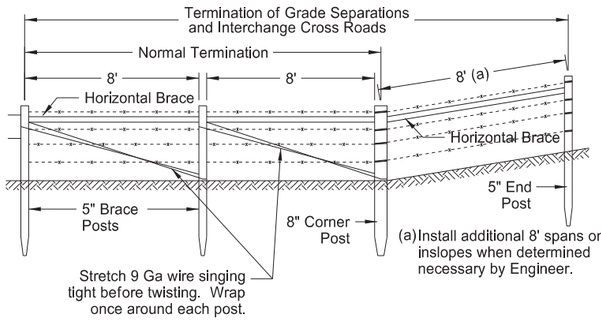
2. Install double brace assemblies at locations shown on the plans or established by the Engineer. Place adjacent fence terminals, corner assemblies, or double brace assemblies at a maximum spacing of 1,320 feet.

3. Include all costs of furnishing and installing inserts and eyebolts in the unit price bid for fencing bid items. Use eyebolts galvanized according to AASHTO designation M-30; inserts of corrosion resistant material do not require galvanization. Use concrete inserts capable of developing the full strength of the ⅝" diameter threaded eyebolt, when installed in concrete.

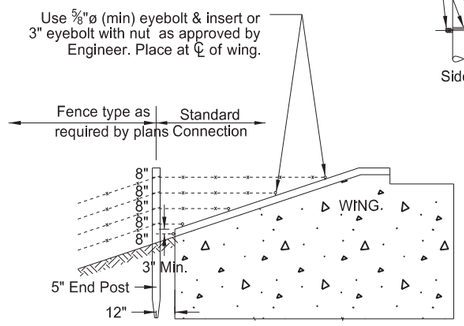
4. Determine post type used, either wood or steel, unless otherwise specified in the plans.

5. Include the cost of bracing at vehicle gates in the price bid for "Vehicle Gate."

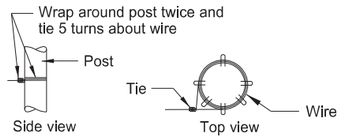
POST SIZES					
	TREATED WOOD		STEEL		
USE OF POST	Post dia.	Post length	Post length	Post wt. Lbs/Ft	Anchor wt. Lbs.
Line post	3½"	6'-6"	6'-6"	1.33	0.67
Corner post	8"	8'	7'	4.10	(Conc.)
End post	5"	8'			
Brace post	5"	8'	7'	3.19	(Conc.)
Gate post	5"	8'			
Horizontal brace	4"	8'	As appoved by the Engineer		



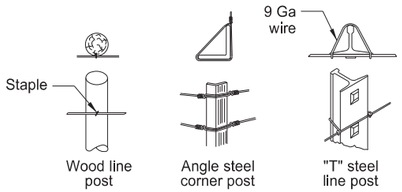
FENCE TERMINAL



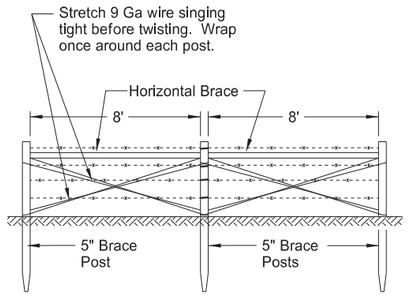
DETAIL FOR TYING FENCE TO WINGS OF ABUTMENTS



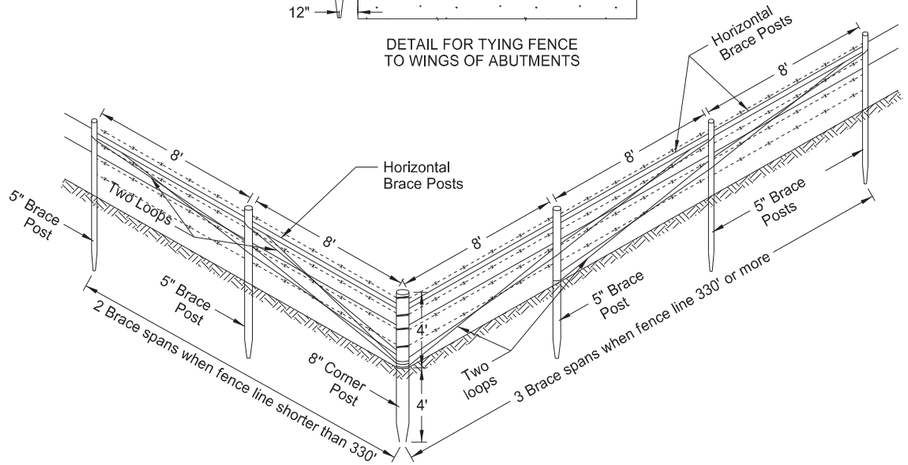
WRAP-AROUND DETAIL



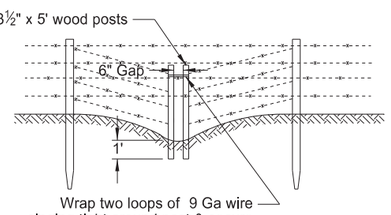
FASTENING TO POSTS



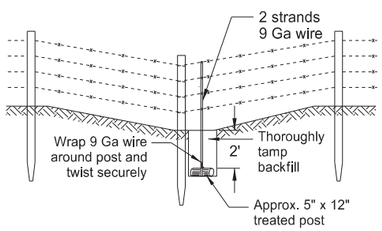
DOUBLE BRACE ASSEMBLY



CORNER ASSEMBLY

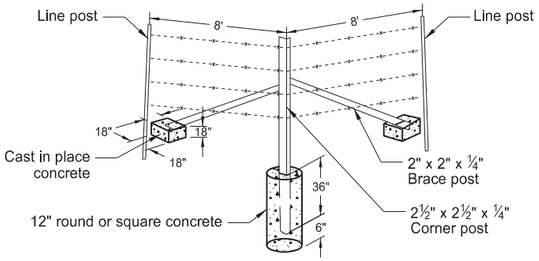


BREAK-AWAY FENCE FOR NARROW DEPRESSIONS SUBJECT TO FLOODING

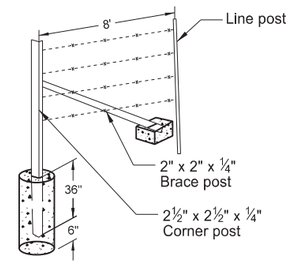


DETAIL FOR ANCHORING FENCES IN DEPRESSIONS*

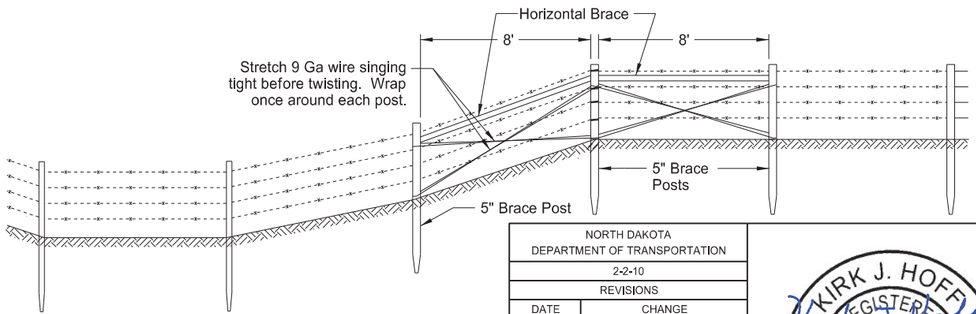
*Determine locations in the field and include in price bid for fencing. Use other methods of anchoring fence if approved by the Engineer.



CORNER AND DOUBLE BRACE ASSEMBLY STEEL POSTS



FENCE TERMINAL STEEL POSTS



FENCING FOR WIDE DEPRESSIONS

Use double brace installation, as shown, on opposite side of depression.

Decrease line post spacing as needed due to terrain.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-2-10	
REVISIONS	
DATE	CHANGE
10-02-12	Notes, steel assemblies/posts.
11-25-13	Revised Vehicle Gate.
10-17-17	Updated to active voice.
02-23-23	Revised post spacing/brace size.

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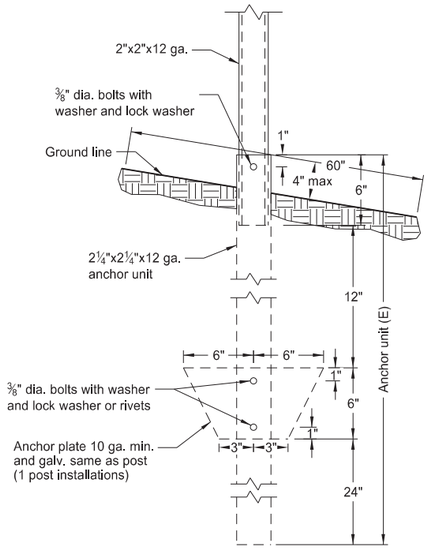
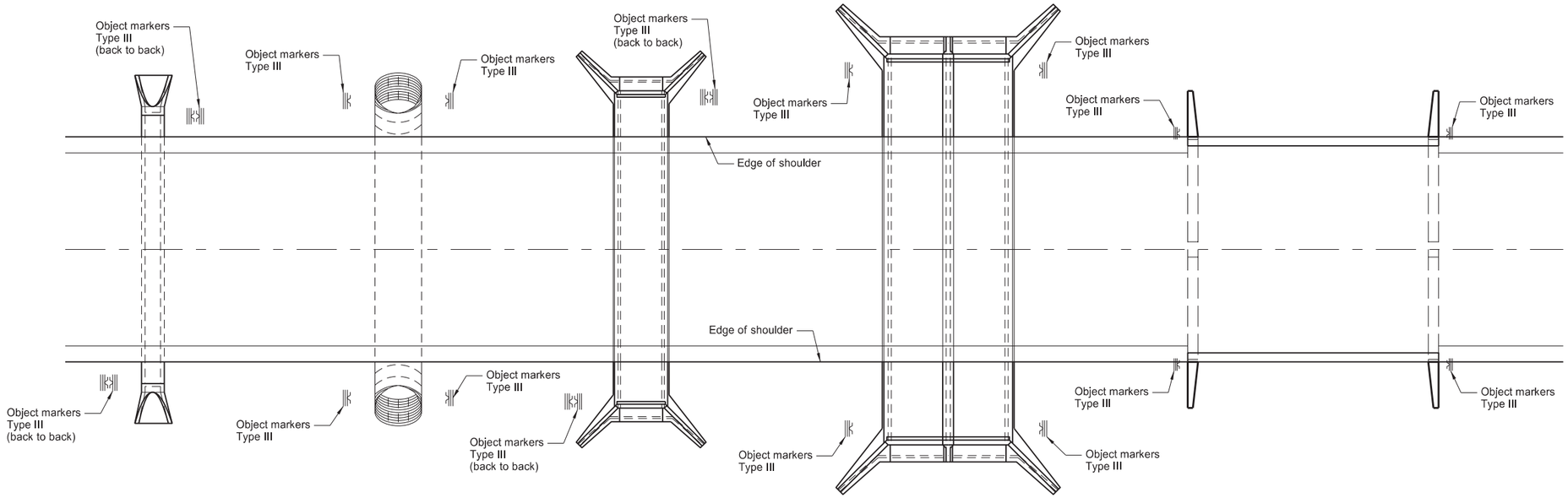
02/23/23

OBJECT MARKERS

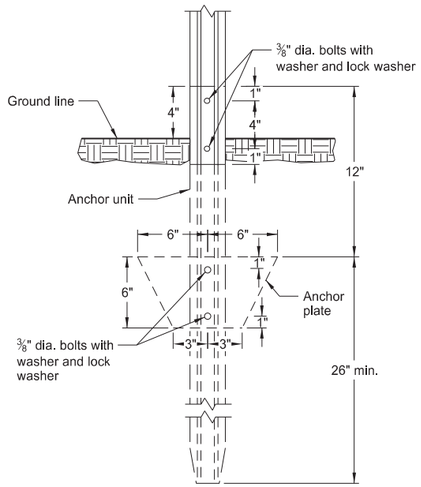
D-754-82



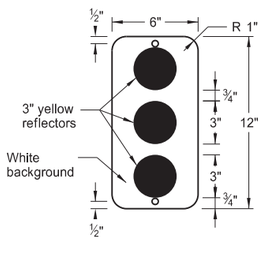
Perforated Tube Anchor Unit Assembly



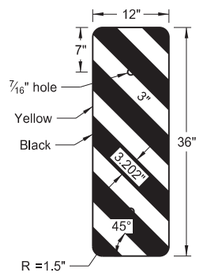
Pipe Culverts 10' max | Pipe Culverts greater than 10' | Box Culverts 10' max | Box Culverts greater than 10' | Bridges (B)



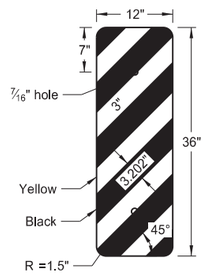
U-Channel Anchor Unit Assembly



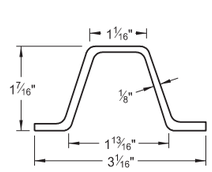
Object Marker OM2-1V (C) Type II



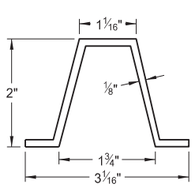
Object Marker Left OM-3L (C) Type III



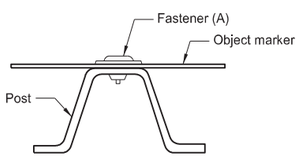
Object Marker Right OM-3R (C) Type III



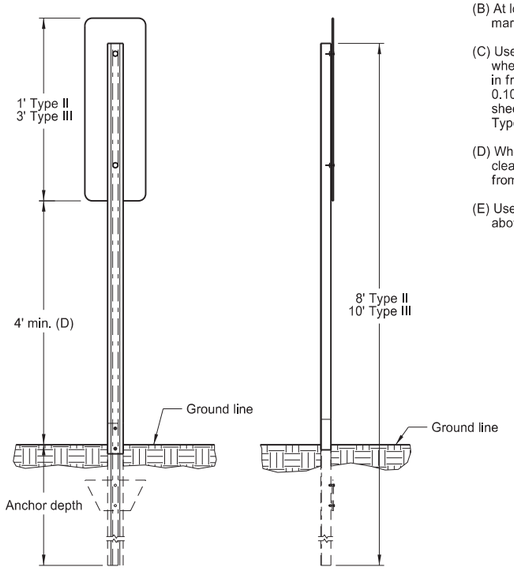
Steel Post Detail Approx. 2 lb/ft



Aluminum Post Detail Approx. 0.88 lb/ft



Fastener Detail



Object Marker Installation Detail

Notes:

(A) Use ⅜" dia. tension pin type or other non-rust vandal resistant fastener with min. outside dia. 13/16" flat washer.

(B) At locations of approach guardrail with reflectors and end terminal with impact head object markers, do not install object markers.

(C) Use two object markers for back to back mountings. On bridges where the distance between wheel guards is less than the approach width, mount object markers vertically on steel posts in front of the bridge railing on each side of highway to mark the horizontal clearance. Use 0.100" minimum thickness sheet aluminum for sign backing material. Use ASTM Type XI sheeting for Type III object markers and ASTM Type IV background sheeting with ASTM Type XI reflectors for Type II object markers.

(D) When object marker is located 8' or less from shoulder or curb, provide 4' minimum vertical clearance from near edge of traveled way to bottom of sign. When located more than 8' from shoulder or curb provide 4' minimum vertical clearance from ground to bottom of sign.

(E) Use 4" vertical clearance for anchor or breakaway base. Provide 4"x60" measurement above and below post location and back and ahead of post.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
7-18-14	Revised Note C
8-30-18	Updated notes to active voice and removed note.
9-05-19	New Design Engineer PE Stamp.
8-08-24	Electronic Stamp/Signature.

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08/08/24