

GRAND FORKS
COUNTY HIGHWAY DEPARTMENT

BIDDERS PROPOSAL

COUNTY PROJECT NUMBERS

Structure #105-28.0, 127-12.1 &
136-30.0

Structure Replacement with RCBC – 3 Locations

GRAND FORKS COUNTY

DATE OF LETTING: APRIL 12, 2022

PROPOSAL OF:

INVITATION TO BID
Structure Replacement with RCBC – 3 Locations

By the order of the Board of County Commissioners of Grand Forks County, North Dakota, I hereby give notice that sealed bids shall be received by the undersigned at the office of the County Director of Finance & Tax up until 10:30 o'clock a.m., April 12, 2022. Bids shall be publicly opened and read at 10:30 o'clock a.m. for Structure Replacement with RCBC – 3 Locations. The bids shall be considered at the April 19, 2022 regularly scheduled Commission meeting.

Approximate Quantities: Removal of metal culvert or Timber Bridge: 3 Each, Install RCBC: 3 Each, Pitrun Aggregate/Sand: 500 CY, Class 13 Aggregate: 300 CY, Off-Site Earthen Borrow: 1000 CY, Redi-Mix Concrete: 36 CY.

Locations/Size:

1. 136-30.0 - Allendale Twp 35/36, Dbl 14' x 7' x 58', skewed 30°
2. 127-12.1 - Lakeville Twp 33 / Blooming Twp 5, Sgl 12' x 5' x 50'
3. 105-28.0 - Logan Center 22/23, Sgl 16' x 7' x 48'

RCBC's material secured by the County. Work to be performed between August 1 and September 30, 2022.

Bids shall be submitted on bidding blanks and in accordance with the approved bidder's instructions and specifications prepared by and available at the office of the County Highway Department, 1700 N Columbia Road, Grand Forks ND 58203

In compliance with Section 11-11-28 of the North Dakota Century Code, bids to be opened and considered must be accompanied by a bond. A bid shall be accompanied by a separate envelope containing a bidder's bond in a sum equal to five percent of the full amount of the bid, executed by the bidders as principal and by a surety company authorized to do business in the State as a guaranty that the bidder will enter into the contract if it is awarded to him, and that he will furnish the necessary bond. The bidder's bond envelope must be on the outside of the bid package. Each bid shall contain a copy of the license or certificate of renewal thereof issued by the secretary of state enclosed in the required bid bond envelope. Bidder must be licensed for the full amount of the bid. Each bid shall contain copy of the certificate of insurance.

The Board reserves the right to reject any or all bids, in whole or in part, and to waive any technicalities.

The Board reserves the right to extend the date for receiving and opening of bids for a period of not to exceed five days when unforeseeable events may warrant such extension, at the discretion of the Board.

Bids must be enclosed in a sealed envelope, with a separate envelope for the bidder's bond, both addressed to the County Director of Finance & Tax and marked on the outside what the bid is for. The County Director of Finance & Tax office is located at 151 4th Street South and there mailing address is P.O. Box 5726, Grand Forks, ND 58206.

Dated at Grand Forks, North Dakota, this 11th day of February, 2022.

Debbie Nelson
County Director of Finance & Tax
Grand Forks, North Dakota

(Published March 16, 23 & 30, 2022)

LEGAL NOTICE

GRAND FORKS COUNTY HIGHWAY DEPARTMENT
INSTRUCTION TO BIDDERS

- I. Proposals are requested for the construction of Recycled HBP Overlay & Milling Surface Grand Forks County Highway Department Project No. #105-28.0, 127-12.1 & 136-30.0 in accordance with Plans, North Dakota Standard Specification Manual, North Dakota Supplemental Specification and other Contract Documents prepared by the Grand Forks County Highway Department.
- A. Form: Each Proposal shall be made in a form prepared there for by the Engineer and included as one of the Contract Documents. All bids and proposals shall contain a statement showing that the bidder or contractor is dully and regularly licensed in the State of North Dakota. The number and class of the license then held by the contractor shall appear upon each bid or proposal. No contract shall be awarded to any contractor unless he is a holder of a license in the class within which the value of the project shall fall as hereinbefore provided. A contractor must be the holder of a license at least ten days prior to the date set for receiving bids to be qualified bidder. The bid shall be submitted in a sealed envelope upon which there is disclosed the following information:
1. The class of license held by the bidder;
 2. The number of the bidder's license;
 3. The name of the person, firm or corporation submitting the bid;
 4. Date on which license was issued or renewed.
 5. Certification of Insurance not less than 1,000,000.00 dollars.
- A bid submitted without this information on the envelope shall not be considered and shall be returned to the bidder.
- B. Modifications; Proposal shall not contain any recapitulation of the work to be done. Alternate proposals will not be considered unless called for. Oral proposals or modification will not be considered.
- C. Examination of Contract Documents and Visit to Site;
Before submitting proposal, Bidder's shall carefully examine the Plans, read the Specification and the other Contract Document, shall visit the site of work, and shall fully inform themselves as to all existing conditions, and limitations, and shall include in the proposal a sum to cover the cost of items included in the Contract Documents.
- D. Deliver of Proposal; Proposals shall be delivered by the time and the place stipulated in the Advertisement. It is the sole responsibility of the Bidder to see that his proposal received in proper time. Any proposal received after the scheduled closing time for receipt of proposals shall be returned to the Bidder unopened.
- E. Withdrawal; Any Bidder may withdrawal his proposal, either personally or by written request, at any time prior to the scheduled closing time for receipt of proposals.

F. Opening; Proposals will be opened and publicly read aloud at the time and place set forth in the Advertisement.

G. Award or Rejection; The Contract will be awarded to the lowest and/or best qualified responsible Bidder complying with those instructions and with the Advertisement. Grand Forks County reserves the right to reject any or all proposals or to waive any informalities or technicality in any proposal in the interest of Grand Forks County. No bidder may withdraw his proposal for a period of 30 days after the date of opening thereof.

II INTERPRETATION OF DOCUMENTS; If any person contemplating submitting a proposal is in doubt as to the true meaning of a part of the Plans, Specifications or other Contract Documents, or finds discrepancies in or omissions from the Plans 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 County nor the Engineer will be responsible for any other explanation or interpretation of the Contract Documents.

III ADDENDA; Any addenda issued during the time of bidding, or forming 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.

IV BIDDERS INTERESTED IN 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's, or who has quoted prices on materials to a Bidder's is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidder's.

V PROPOSAL GUARANTY; Each bid must be accompanied by a bidder's bond in the amount of 5 percent of the bid, payable to Grand Forks County. All bonds shall comply with the North Dakota Century Code as amended.

All such bonds will be returned to the respective unsuccessful Bidder's within ten days after the award is made, except those the County elects to hold until the successful Bidder has executed the Contract. Thereafter all remaining bonds will be returned within ten days.

VI CERTIFICATE FROM TAX COMMISSIONER; In accordance with Section 43-07-11.1 of the North Dakota Century Code, prior to executing the Contract, the contractor shall submit to Grand Forks County a certificate from and by the Tax Commissioner stating that the Contractor has paid all delinquent income taxes if any, owed to the State pursuant to the provisions of Chapter 57-38 of the above mention code.

GRAND FORKS COUNTY HIGHWAY DEPARTMENT PROPOSAL

Note: The envelope containing this proposal should be marked: Proposal for Grand Forks County Highway Project No. Structure Replacement with RCBC – 3 Locations, in Grand Forks County.

(Proposal of Name) _____

(Address) _____

to furnish and deliver all material and to do and perform all work, in accordance with the 2022 Standard Specification, adopted by the North Dakota Department of Transportation. Standard Drawings currently in effect, and other Contract Provisions submitted herein, of the Grand Forks County Highway Department except as specifically stated otherwise in the "Special Provisions" contained therein, for the improvement of a certain section of County Highway in Grand Forks County, State of North Dakota,

on which proposal will be accepted until 10:30 o'clock a.m., on the 12th day of April 2022, this highway being known as Grand Forks County Highway Department.

Project No. #105-28.0, 127-12.1 & 136-30.0 Said projects being situated County Wide.

To the County Engineer of the Grand Forks County Highway Department Grand Forks, North Dakota

Sir:

In accordance with Advertisement and Notice to Contractors of the Grand Forks County Highway Department, inviting proposals for the improvement of the section of highway hereinbefore named, and in conformity with the plans and specification, on file in the office of the Grand Forks County Highway Department, I/We hereby certify that I am/we are the only person or persons interested in this proposal as principals; that it is made without collusion with any person, firm or corporation; that an examination has been made of the specifications and Contract Form including "Special Provisions" contained therein, also the Plans, and the site of the work, and propose to furnish all necessary machinery, equipment, tools labor and other means of construction, and to furnish all materials specified, in the manner and at the time specified and understand that the quantities of work as shown herein are approximate only and are subject to increase or decrease, and further understand that all quantities of work whether increased or decreased, are to be preformed at the following unit prices (except as provided in said specification)

The Highway Department reserves the right to reject any or all bids, in whole or in part, and to waive any technicalities.

GRAND FORKS COUNTY HIGHWAY DEPARTMENT PROPOSAL

It is further proposed that this bidder will:

Do all "Extra Work" which may be required to complete the work contemplated at the unit prices or lump sums, to be agreed upon in writing prior to starting such extra work or if such price of sums cannot be agreed upon, to perform such work on a "Force Account" basis, as provided for in the specifications.

Obtain all required license and authority as may be required by law or foreign corporations prior to executing the contract and agrees that failure to do so shall constitute a default and grounds for forfeiture of proposal guarantee.

Begin work within ten calendar days from the date of the "Notice to Proceed" and to prosecute said work so as to complete the roadway and its appurtenances on or before September 30, 2022.

Comply with requirements of Title 65, North Dakota Century Code, as amended, known as the Workmen's Compensation Act.

Contractor

By _____

Title _____

Dated _____, 2022

GRAND FOR COUNTY HIGHWAY DEPARTMENT

CONTRACT

This agreement made and entered into by the Grand Forks County Highway Department, party of the first part, and

_____ PARTY OF THE SECOND PART (hereinafter called Contractor), WITNESSETH:

1. That, for and in consideration of the payments hereinafter mention to be made by the party of the first part, the Contractor promised and agrees to furnish and deliver all the material and to do and perform all the work and labor required to be furnished and delivered, and to pay or cause to be paid as they become due, all claims for any work or labor performed including that performed repairing machinery and equipment, or renting any equipment and machinery or furnishing any, hand tools, or materials or insurance premiums or supplies used for machinery and equipment, all as done and performed in and about the improvement and construction of a certain portion of the public highway

known as Grand Forks County Highway Department Project No. #105-28.0, 127-12.1 & 136-30.0

in Grand Forks County, North Dakota for Structure Replacement with RCBC – 3 Locations item. In accordance with item numbers and quantities listed in the proposal and the limits of Projects as shown in the plans approved by the County Engineer of Grand Forks County Highway Dep't. March 17th, 2022, in strict and entire conformity with provisions of this contract, and bond and proposal, and the plans and specifications approved by the County Engineer, copies of which are hereto attached, and which said plans and specifications and proposal and bond are hereby made a part of this agreement. As fully and to the same effect as if the same had been set forth in the body of this agreement.

2. The party of the first part agrees and promised to pay to the Contractor for said work, when completed and accepted in accordance with the provisions of this contract, the price set forth in the said proposal, amounting approximately to

_____ Dollars (\$ _____), payment to be made as provided in said specification upon presentation of the proper certification of the County Engineer of the Grand Forks County Highway Department, or his representatives, and under to terms of this contract.

3. The said work shall be done in accordance with the terms of this agreement and the laws of the State of North Dakota under direct supervision and to the entire satisfaction of the Grand Forks County Highway Department.

4. The decision of said County Engineer upon any question connected with the execution of this agreement or any failure or delay in the prosecution of the work by the said Contractor shall be final and conclusive.

5. The Contractor shall begin construction work when so ordered by the Grand Forks County Highway Department and shall maintain at all times thereon a maximum and effective force.

6. The said work shall be completed by September 30th 2022.

In Witness Whereof, the parties to this contract have hereunto set their hand and seals this _____ day of _____, 2022.

GRAND FORKS COUNTY STATE OF NORTH DAKOTA

Chairman of the Board of Grand Forks County
Commissioner, Party of the First Part

WITNESS TO CONTRACTOR'S SIGNATURE

Grand Forks County Auditor

Contractor _____

By _____

Title _____

Party of the Second Part

2022 Reinforced Concrete Box Culvert (RCBC) Request for Installation

1. Grand Forks County is soliciting bids for 3 RCBC's. The RCBC material itself has been procured from either Oldcastle (Hancock) Concrete or Forterra Concrete and the material is already in the que for manufacturing, the delivery dates of the material are listed with each project. The County is seeking bids from a Contractor for the installation of the RCBC's, which are located throughout the County, see attached location maps. The bid shall include the equipment, labor and materials (aggregate & fill) for a finished product. The selected Contractor shall coordinate their schedule with the County and Oldcastle or Forterra. All locations are located on gravel township roads, see attached location maps. The completion date shall be September 30, 2022. Bid bond is required. Performance or payment bonds are not required.
2. The Contractor shall supply unit prices for the aggregates and earthen inslope fill, the bid shall be based on the estimated quantities, actual payment shall be based on measured field quantities. The removals and installation of RCBC shall be paid lump sum. Inslope fill shall be capable of supporting vegetative growth. All inslope fill designated for on-site borrow shall be excavated within a half-mile of the site, hauled to the structure, placed and ordinarily compacted, the borrow location shall be coordinated by the County. Off-site borrow shall be hauled in by the Contractor.
3. Prior to demolition the County shall salvage any desirable materials. The County shall salvage all desirable signage & bridge markers, guardrail, useable timber and timber/metal beams. Timber materials designated for disposal shall be removed by the Contractor, however the County shall haul the material to the landfill. Concrete materials designated for disposal shall either be buried on-site or used for rip-rap erosion protection on-site.
4. The Contractor shall pulverize or smoothen all lumps and finish the site in a professional workmanlike manner.
5. The County shall assist the Contractor in establishing the flowline grade (elevation) and line of the RCBC.
6. Any necessary cofferdams and dewatering shall be included in the bid price of Install RCBC.
7. The Contractor shall level and prepare the existing subgrade, place 2-inches of sand or pitrun aggregate under the RCBC for leveling purposes. Under the roadway driving surface the excavation shall be filled with a pitrun aggregate and compacted in 12-inch or less lifts utilizing ordinary mechanical compaction. The inslopes shall be filled with in-situ material and/or earthen borrow, and provided with a transition slope between the end section and the existing roadway inslope. There shall be at a minimum of 2-feet of total material over the top of the RCBC including a minimum of 6-inches Class 13 aggregate over the disturbed driving area. There shall be no third party material testing.
8. All existing riprap shall be salvaged and replaced as downstream erosion protection.
9. All RCBC's are supplied with mechanical ties, butyl-mastic joint sealant and geotextile wrap for the joints, and cutoff walls. The cutoff walls shall be installed per manufactures recommendations (grouted in with rebar).
10. The County shall supply the traffic control, seeding/restoration, and installation of signage.

Site 1: Logan Center Twp 22-23, #105-28.0, Single 16' x 7' x 48', with Type 1 End Sections, approximate address would be 893 45th St NE, Northwood, ND 58267.

Existing Structure: Timber bridge is approximately 26' wide by 24' in length, with 11' vertical feet from flowline to top of deck. County shall salvage signs, guardrail and timber decking. The Contractor shall remove and load the remaining timber abutments and leftover timber into the County truck.

Forterra shall supply the RCBC materials and will be available after August 1, 2022.

The adjacent farmer has riprap within ¼-mile of structure, Contactor to load and haul riprap to project. Riprap shall be placed both inlet and outlet ends of the box, on the sides of end sections for 5-feet each way and extend out from the bottom/flowline for 20-feet.

Bid Form – Site 1:

Item #	Description	Unit	Approx Quantity	Unit Price	Total Price
1	Remove Existing Structure	Lump Sum	1		
2	RCBC Material (Forterra)	Lump Sum	1	\$104,569.50	\$104,569.50
3	Install RCBC	Lump Sum	1		
4	Pitrun Aggregate/Sand	CY	120		
5	Class 13 Aggregate	CY	60		
6	On-Site Earthen Inslope Borrow	CY	250		
7	Riprap Geotextile Fabric	SY	75		
8	Relocate and Place Riprap	CY	50		
Total					

Site 2: : Lakeville Twp 33 / Blooming Twp 5, #127-12.1, Single 12' x 5' x 50' RCBC, with Type 1 End Sections, approximate address would be 2353 24th Ave NE, Mekinock ND 58258.

Existing Structure: 88" x 48" CMP Arch. The Contractor shall remove and dispose of culvert.

Forterra shall supply the RCBC materials and will be available after August 1, 2022.

Bid Form – Site 2:

Item #	Description	Unit	Approx Quantity	Unit Price	Total Price
1	Remove Existing Structure	Lump Sum	1		
2	RCBC Material (Forterra)	Lump Sum	1	\$71,137.50	\$71,137.50
3	Install RCBC	Lump Sum	1		
4	Pitrun Aggregate/Sand	CY	80		
5	Class 13 Aggregate	CY	75		
Total					

Site 3: Allendale Twp 35-36, #136-30.0, Double 14' x 7' x 58', skewed 30°, with Type III End Sections, approximate address would be 660 14th St NE, Thompson, ND 58278

Existing Structure: Consists of concrete abutments, steel beams, and timber deck, it is approximately 30' wide by 36' in length, with 9' vertical feet from flowline to top of deck. County shall salvage signs, guardrail, metal beams and timber decking. The Contractor shall remove and load any remaining leftover timber into the County truck. The Concrete abutments shall be buried on site or hauled off by the Contractor.

Hancock shall supply the RCBC materials and will be available after August 15, 2022.

The Contractor shall haul in and place off-site borrow for the roadway inslopes. The space between the two box culverts shall be filled in with redi-mix concrete, this shall require the ends be temporarily formed-up.

Bid Form – Site 3:

Item #	Description	Unit	Approx Quantity	Unit Price	Total Price
1	Remove Existing Structure	Lump Sum	1		
2	RCBC Material (Hancock)	Lump Sum	1	\$204,656.26	\$204,656.26
3	Install RCBC	Lump Sum	1		
4	Pitrun Aggregate/Sand	CY	200		
5	Class 13 Aggregate	CY	150		
6	Off-Site Earthen Inslope Borrow	CY	400		
7	Redi-Mix Concrete	CY	40		
Total					

Bid Schedule	
Site Number and Location	Total Price
Site 1: Logan Center Twp 22-23, #105-28.0, Single 16' x 7'	\$
Site 2: Lakeville Twp 33 / Blooming Twp 5, #127-12.1, Single 12' x 5'	\$
Site 3: Allendale Twp 35-36, #136-30.0, Double 14' x 7'	\$
Total Price of All Sites:	\$

Grand Forks County Road Map

2022 RCBC Installation Location Map

Cities and Villages:

Arvilla	.....G-11
Emerado	.....I-11
Gilby	.....H-5
Grand Forks	.....N-11
Grand Forks Air Force Base	.....H-7
Honeyford	.....H-7
Inkster	.....E-3
Johnstown	.....H-3
Kempton	.....F-15
Larimore	.....F-11
Manvel	.....L-5
Mekinock	.....I-8
Merrifield	.....M-13
McCanna	.....D-8
Niagara	.....A-8
Northwood	.....F-17
Orr	.....E-5
Reynolds	.....M-19
Thompson	.....M-16

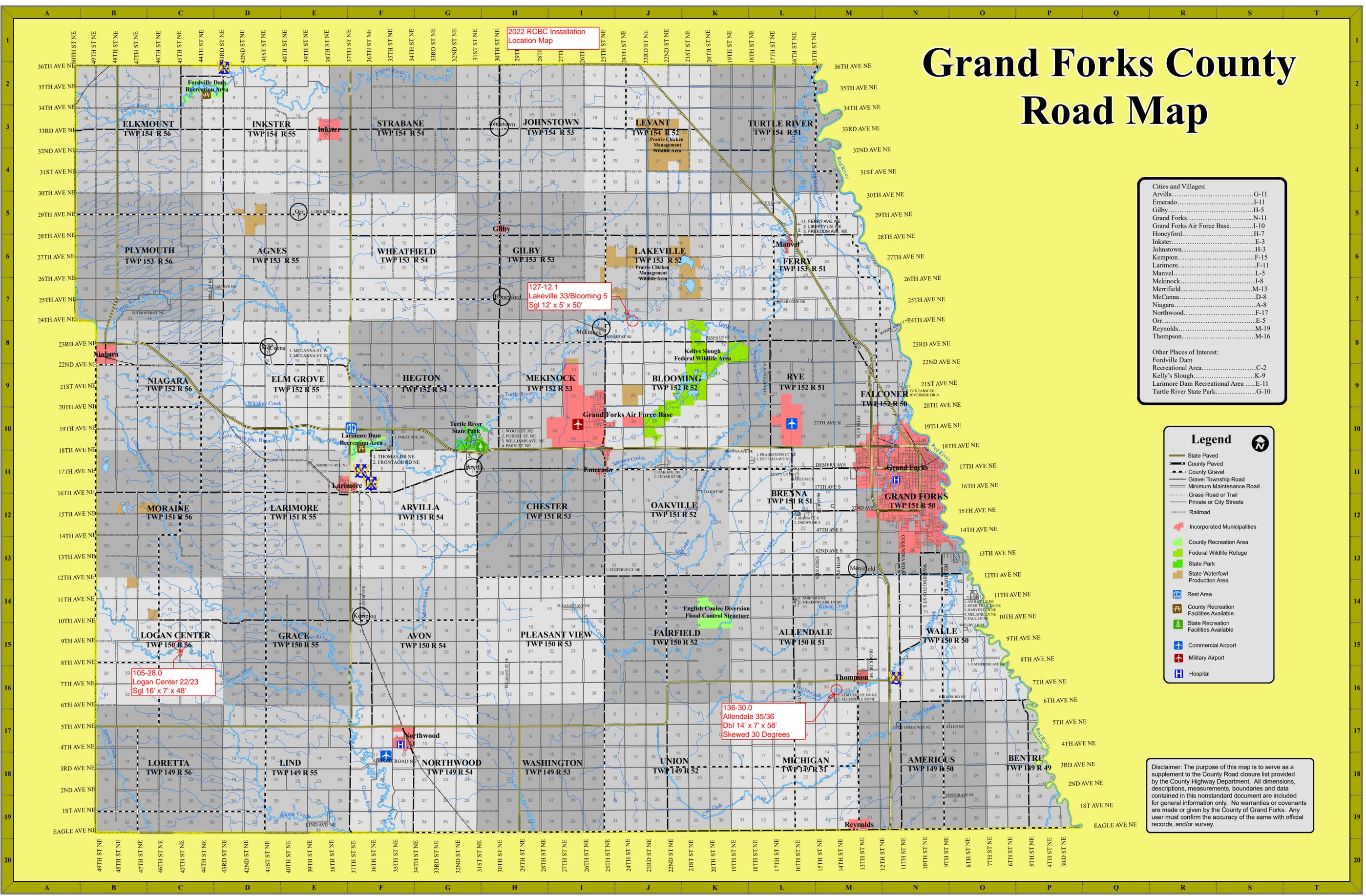
Other Places of Interest:

Fordville Dam Recreational Area	.....C-2
Kelly's Slough	.....K-9
Larimore Dam Recreational Area	.....E-11
Turtle River State Park	.....G-10

Legend

- State Paved
- County Paved
- County Gravel
- Gravel Township Road
- Minimum Maintenance Road
- Grass Road or Trail
- Private or City Streets
- Railroad
- Incorporated Municipalities
- County Recreation Area
- Federal Wildlife Refuge
- State Park
- State Waterfowl Production Area
- Rest Area
- County Recreation Facilities Available
- State Recreation Facilities Available
- Commercial Airport
- Military Airport
- Hospital

Disclaimer: The purpose of this map is to serve as a supplement to the County Road closure list provided by the County Highway Department. All dimensions, descriptions, measurements, boundaries and data contained in this nonstandard document are included for general information only. No warranties or covenants are made or given by the County of Grand Forks. Any user must confirm the accuracy of the same with official records, and/or survey.



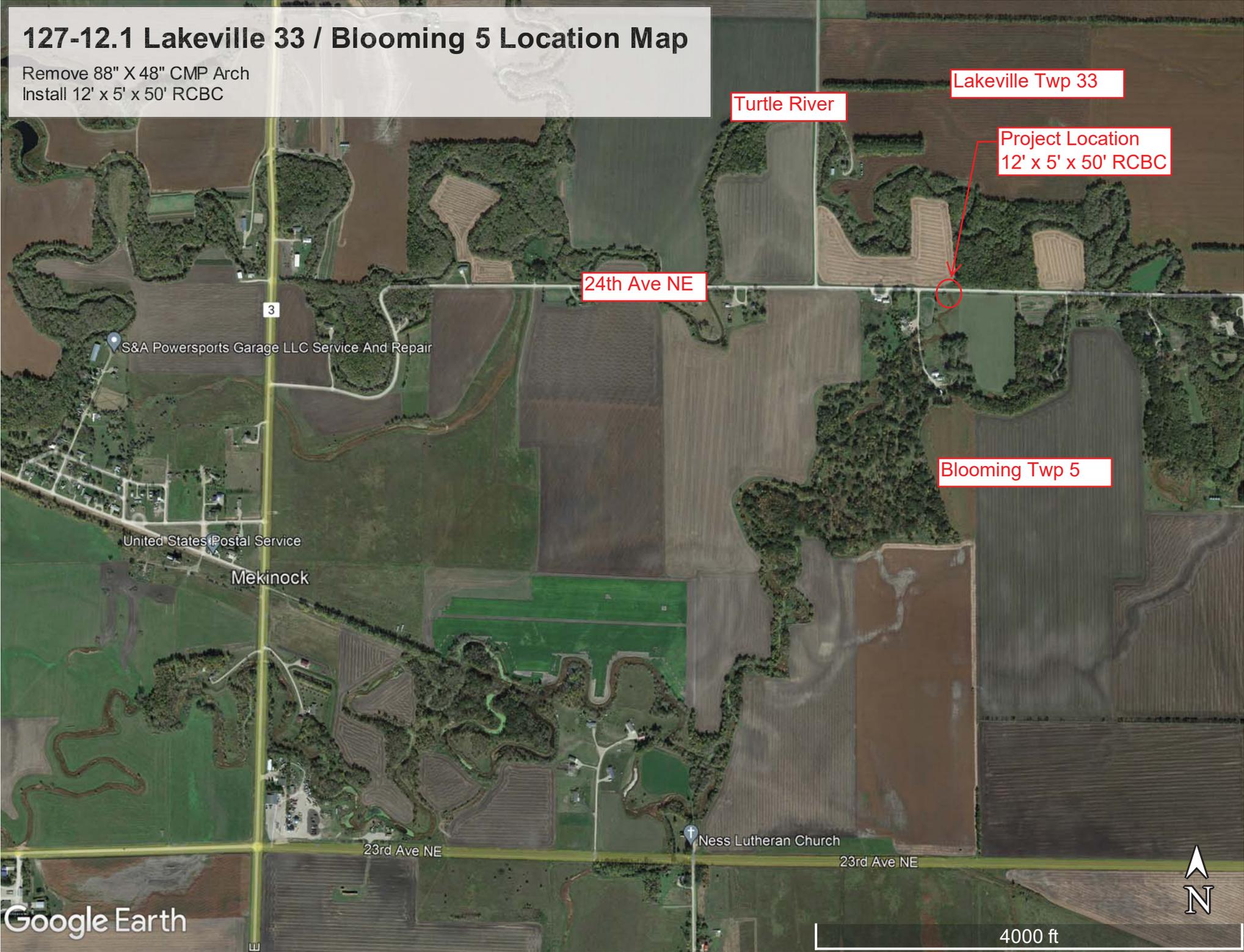
105-28.0 Logan Center 22/23 Location Map

Remove 24' Length Timber Bridge (currently closed)
Install 16' x 7' x 48' RCBC



127-12.1 Lakeville 33 / Blooming 5 Location Map

Remove 88" X 48" CMP Arch
Install 12' x 5' x 50' RCBC



Turtle River

Lakeville Twp 33

Project Location
12' x 5' x 50' RCBC

24th Ave NE

Blooming Twp 5

S&A Powersports Garage LLC Service And Repair

United States Postal Service

Mekinock

23rd Ave NE

Ness Lutheran Church

23rd Ave NE

Google Earth

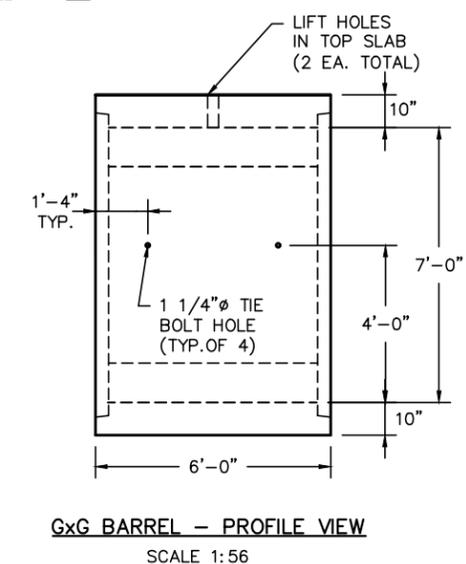
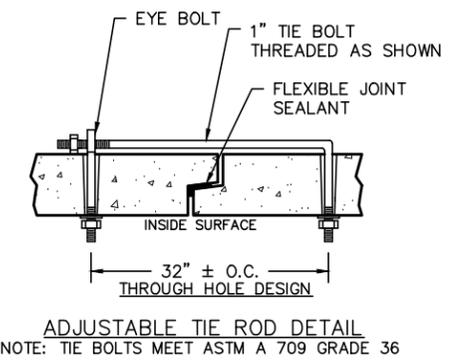
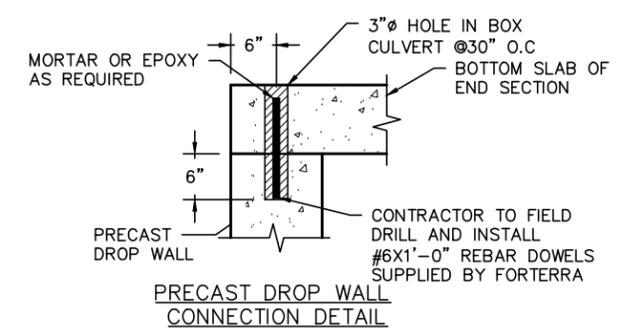
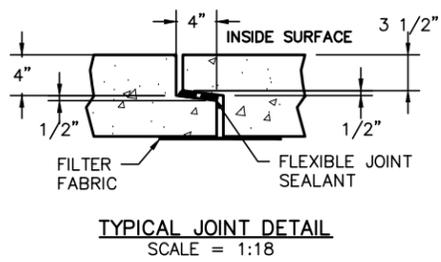
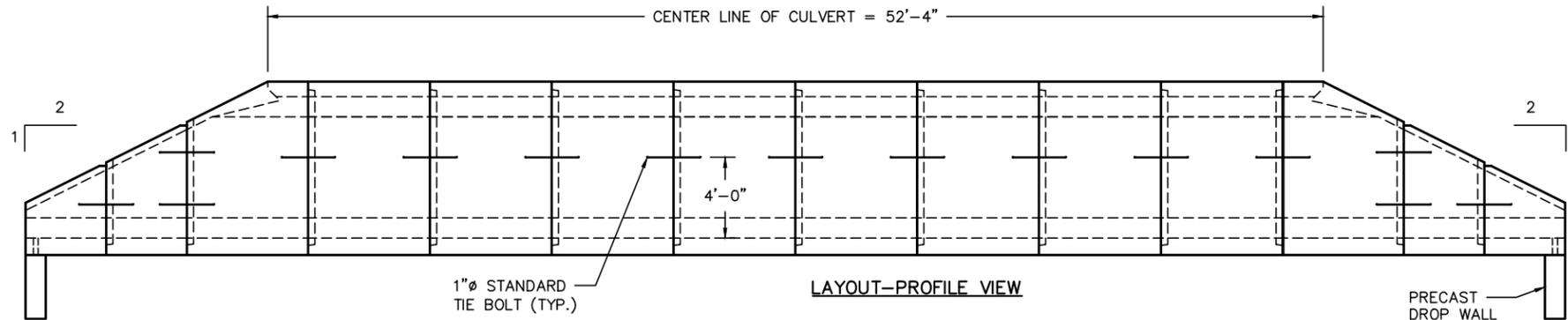
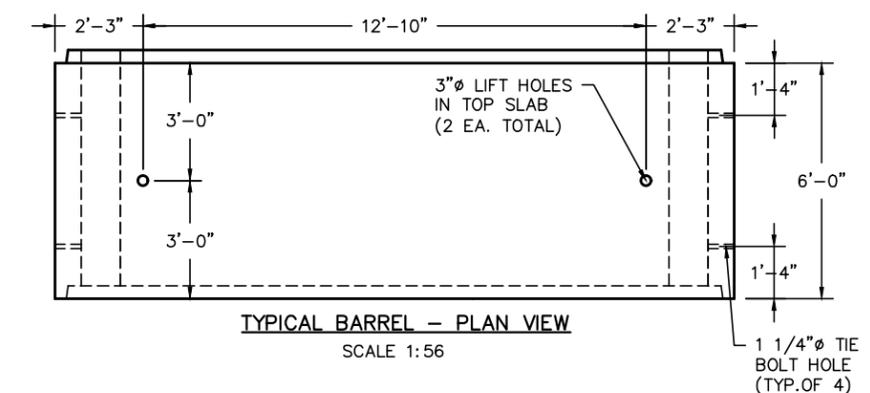
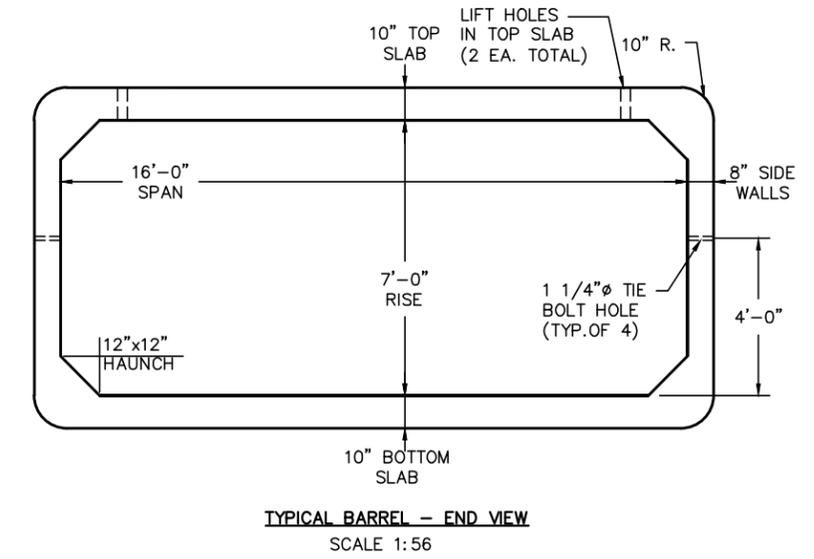
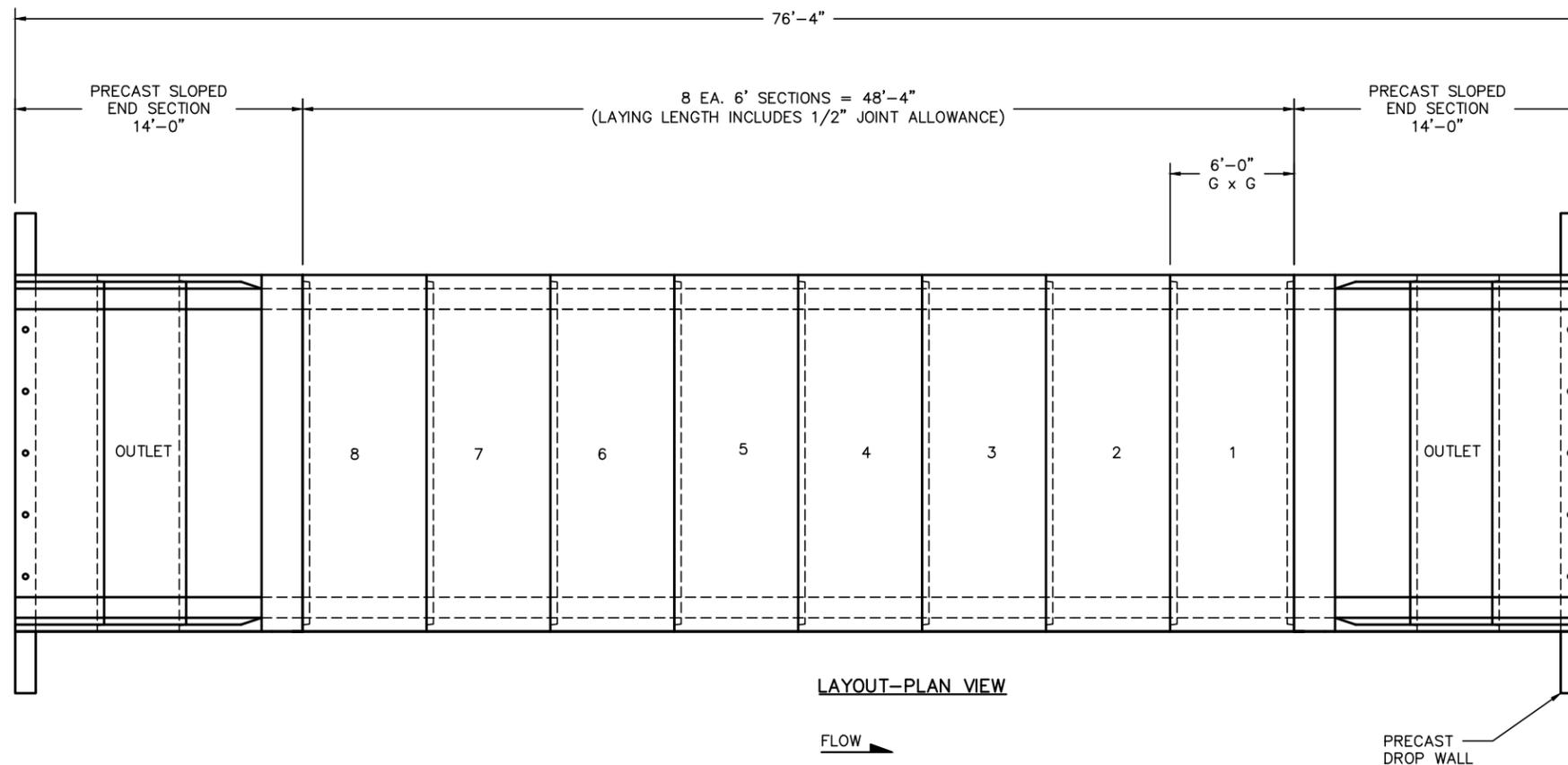
4000 ft



136-30.0 Allendale 35-36 Location Map

Remove 35' Length Timber Bridge (concrete abutments)
Install Dbl 14' x 7' x 58' RCBC, Skewed 30

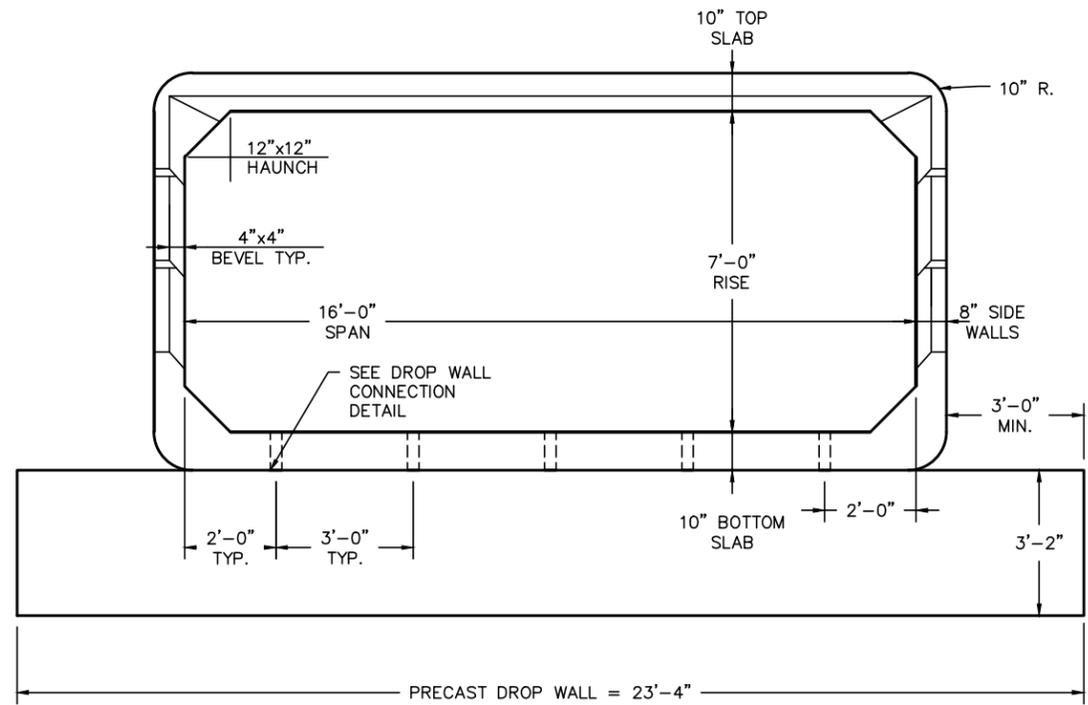
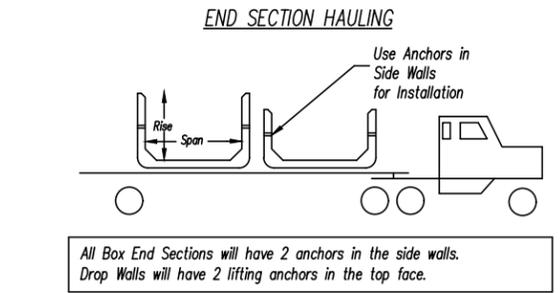
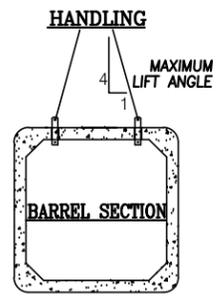
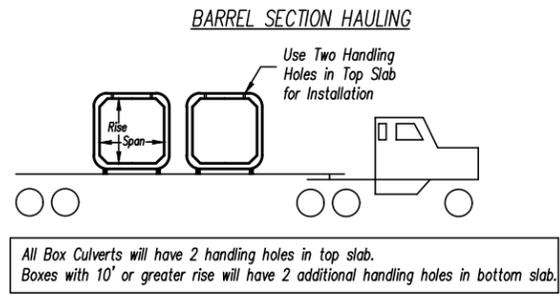




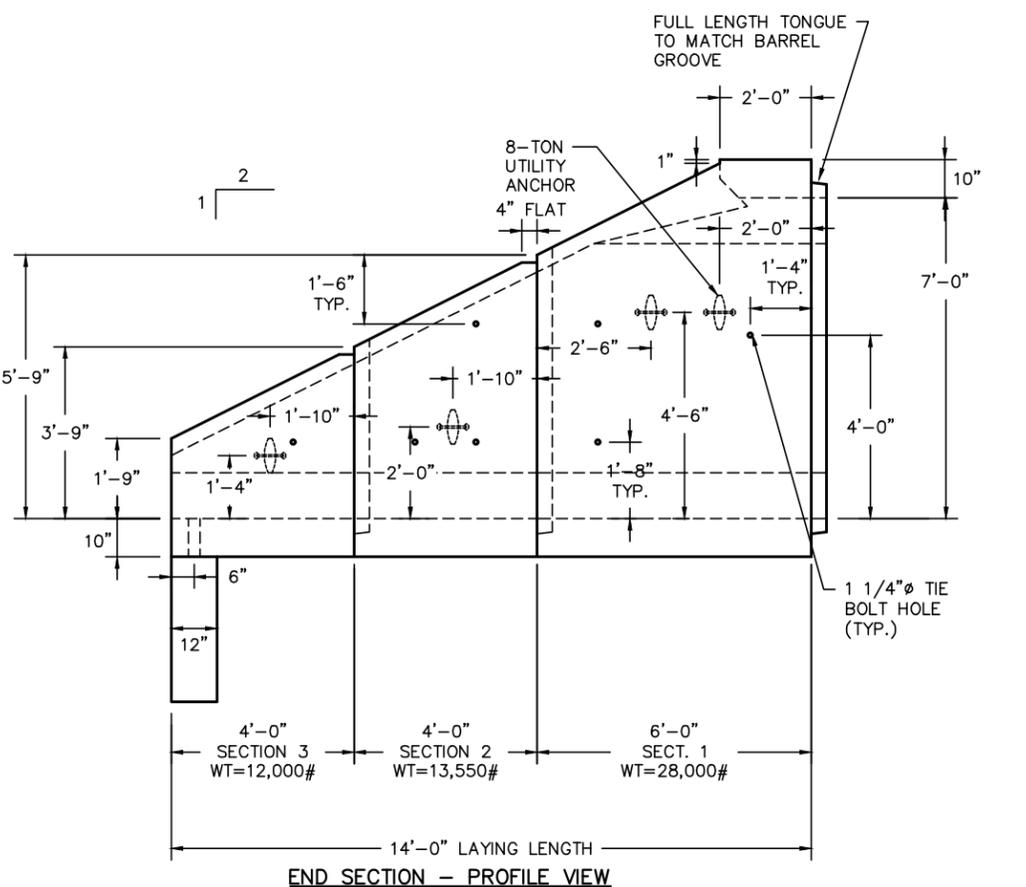
18-105-28.0
 Logan Center 22-23
 No Exceptions Noted
 Nick West, 2/11/2022

FORTERRA Minnesota (Headquarters)
 6655 Wedgwood Road N, Suite 130
 Maple Grove, MN 55311
 (Ph) 763-545-7473

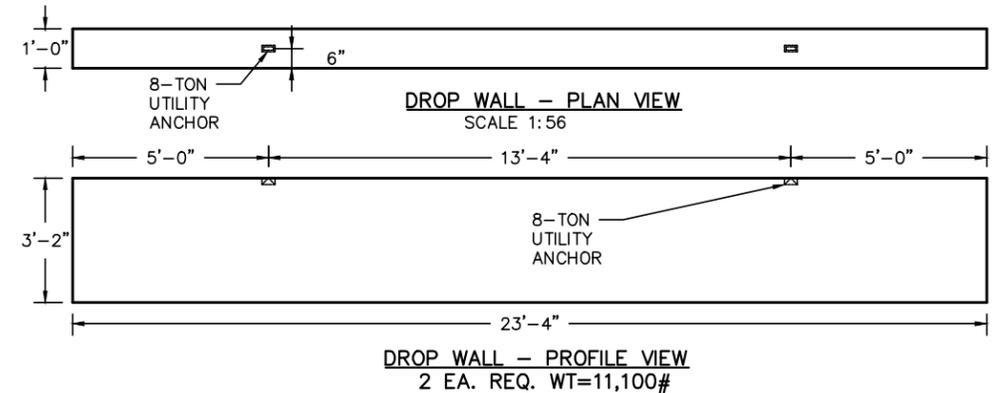
SCALE: N.T.S.	REV:
DATE: 02/11/22	ENGINEER:
DR'N: KKS CK'D:	R/S: 2122033BX1
PAGE: 1 OF 2	
CONT: GRAND FORKS COUNTY HWY DEPT.	
PROJ: GRAND FORKS COUNTY-LAKEVILLE & LOGAN CENTER TWP - 105-28.0	
DESC: 16'x7' SINGLE CELL BOX CULVERT	



END SECTIONS – END VIEW
SCALE 1:48



END SECTION – PROFILE VIEW



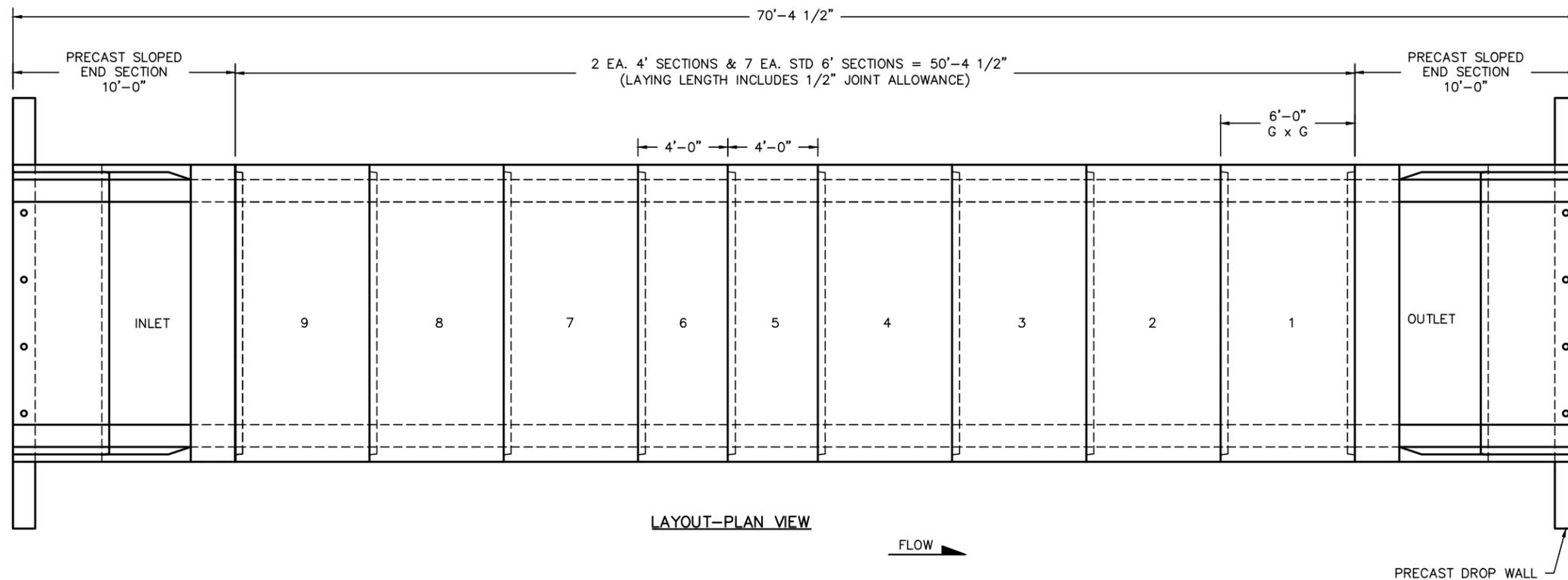
DROP WALL – PLAN VIEW
SCALE 1:56

DROP WALL – PROFILE VIEW
2 EA. REQ. WT=11,100#

BOX CULVERT NOTES:

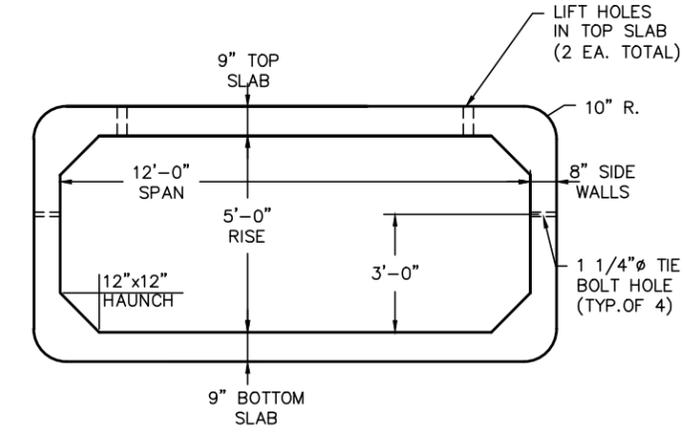
- DESIGN AND ANALYSIS IS PERFORMED ON ERIKSSON CULVERT v5.11.0 COMPUTER PROGRAM. DESIGN CONFORMS WITH CURRENT AASHTO LRFD AND ASTM C1577 SPECIFICATIONS PER SECTION 7.2 "MODIFIED AND SPECIAL DESIGNS" AND IS FOR HL-93 LIVE LOADS.
- CONCRETE STRENGTH TO BE MINIMUM OF $f'_c = 5,000$ PSI.
- STANDARD 16'x7'x6' BARREL SECTION WEIGHT =17.9 TON.
- JOINT TONGUE ENDS ARE TO BE LAID IN THE DIRECTION OF FLOW. LINE LAYOUT ASSUMES 1/2" JOINT GROWTH.
- CONTRACTOR TO CLEAN THE JOINTS THOROUGHLY AND MAKE SURE JOINTS ARE DRY PRIOR TO APPLYING BUTYL JOINT SEAL.
- ONE ROWS OF 1" EZ-STIK BUTYL JOINT SEAL TO BE PLACED AROUND ENTIRE JOINT.
- FILTER CLOTH TO BE PLACED ACROSS TOP SLAB AND DOWN EACH SIDE WALL CENTERED ON JOINT.
- EACH BARREL SECTION TO BE SUPPLIED WITH TWO (2) LIFT HOLES IN THE TOP SLAB. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE RIGGING FOR UNLOADING AND INSTALLING BOX CULVERT SECTIONS.
- END SECTIONS WILL BE SUPPLIED WITH RECESSED ANCHORS IN THE SIDE WALLS.
- TIE BOLT HOLES LOCATED 6" ABOVE CENTERLINE OF CULVERT AND 1'-4" FROM JOINT OF BOX CULVERT BARREL SECTIONS. FORTERRA DOES NOT RECOMMEND THE USE OF TIE BOLTS FOR PULLING BARREL SECTIONS TIGHTLY TOGETHER, ONLY FOR THE PURPOSE OF PREVENTING MOVEMENT AFTER THE BARREL SECTIONS ARE IN PLACE.
- PRECAST DROP WALL TO BE SUPPLIED WITH RECESSED ANCHORS IN TOP FACE.

		Minnesota (Headquarters) 6655 Wedgwood Road N, Suite 130 Maple Grove, MN 55311 (Ph) 763-545-7473	
		SCALE: N.T.S.	
DATE: 02/11/22	ENGINEER:		
DR'N: KKS	CK'D:	R/S:2122033BX1	PAGE: 2 OF 2
CONT: GRAND FORKS COUNTY HWY DEPT. PROJ: GRAND FORKS COUNTY-LAKEVILLE & LOGAN CENTER TWP - 105-28.0 DESC: 16'x7' SINGLE CELL BOX CULVERT			

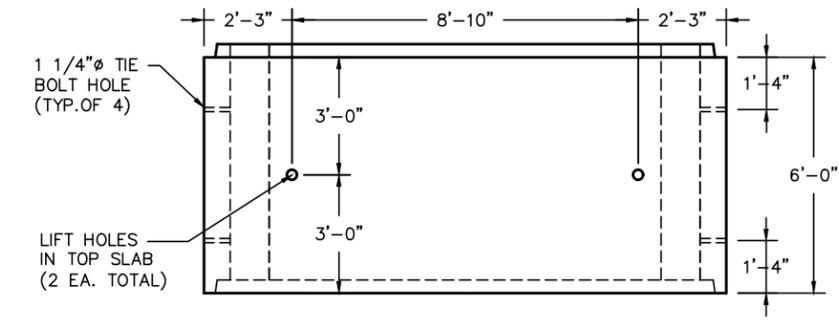


LAYOUT-PLAN VIEW

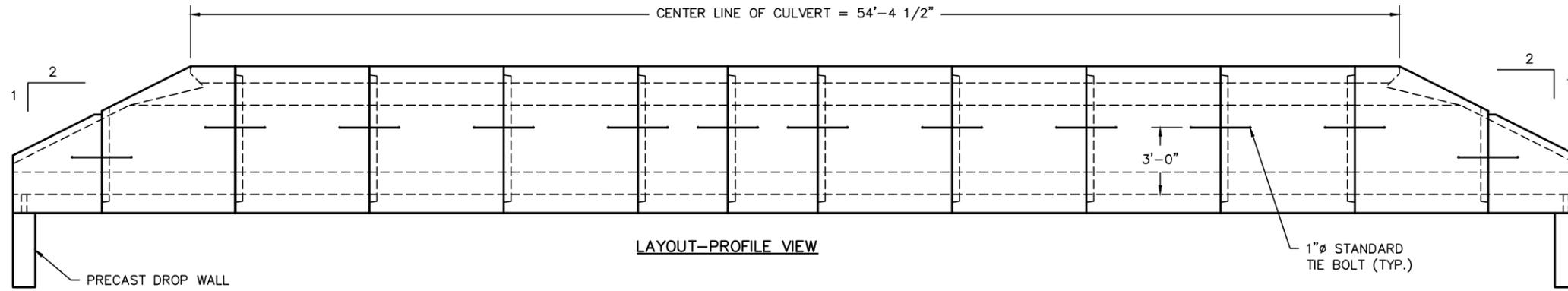
FLOW



12'x5' BARREL - END VIEW
SCALE 1:56

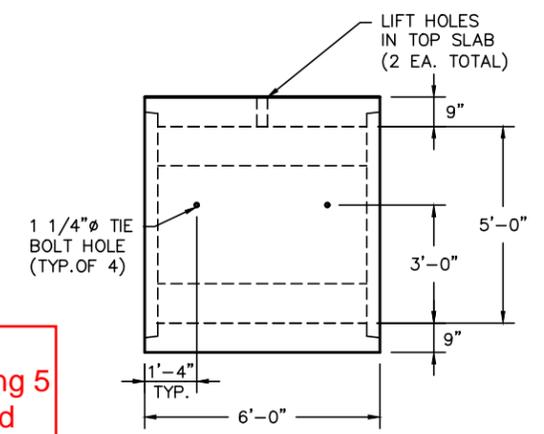


12'x5' BARREL - PLAN VIEW
SCALE 1:56



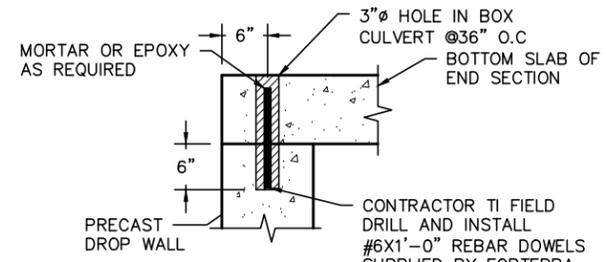
LAYOUT-PROFILE VIEW

1" STANDARD TIE BOLT (TYP.)

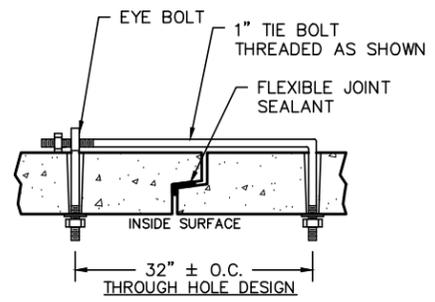


12'x5' GxG BARREL - PROFILE VIEW
SCALE 1:56

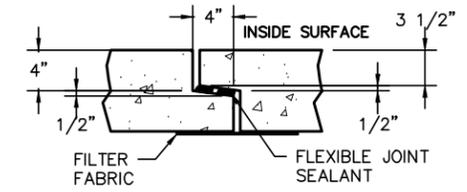
18-127-12.1
Lakeville 33/Blooming 5
No Exceptions Noted
Nick West, 2/11/2022



PRECAST DROP WALL CONNECTION DETAIL



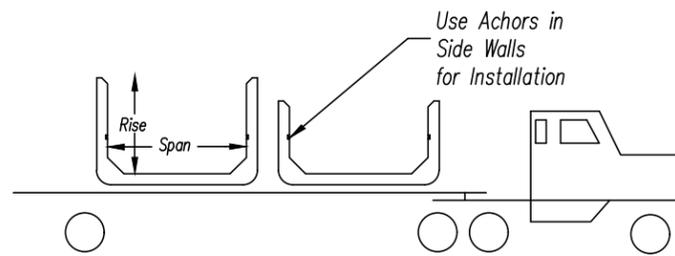
ADJUSTABLE TIE ROD DETAIL
NOTE: TIE BOLTS MEET ASTM A 709 GRADE 36



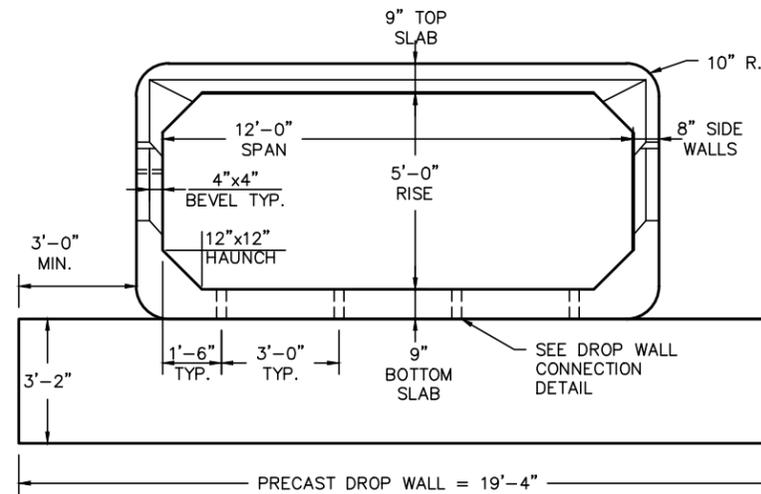
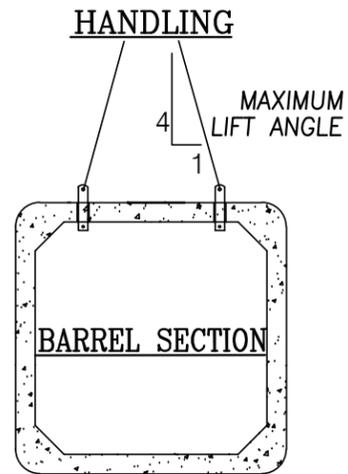
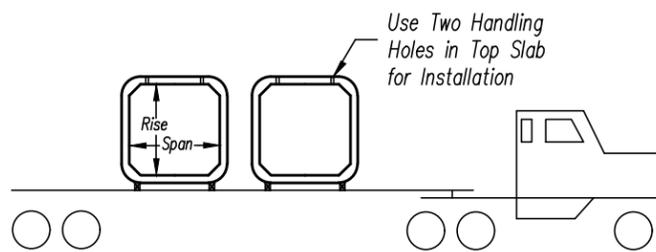
TYPICAL JOINT DETAIL
SCALE = 1:18

		525 South 11th Street West Des Moines, IA. 50265 Phn (515) 223-8761 Fax (515) 223-8737	
SCALE: N.T.S.	REV:	BY:	DATE:
DATE: 2/11/2022	ENGINEER:		
DR'N: KKS	CK'D:	R/S: 2122033BX1	PAGE: 1 OF 2
CONT: GRAND FORKS COUNTY HWY DEPT.			
PROJ: GRAND FORKS COUNTY - LAKEVILLE & LOGAN CENTER-127-121.1			
DESC: 12'x5' SINGLE CELL BOX CULVERT			

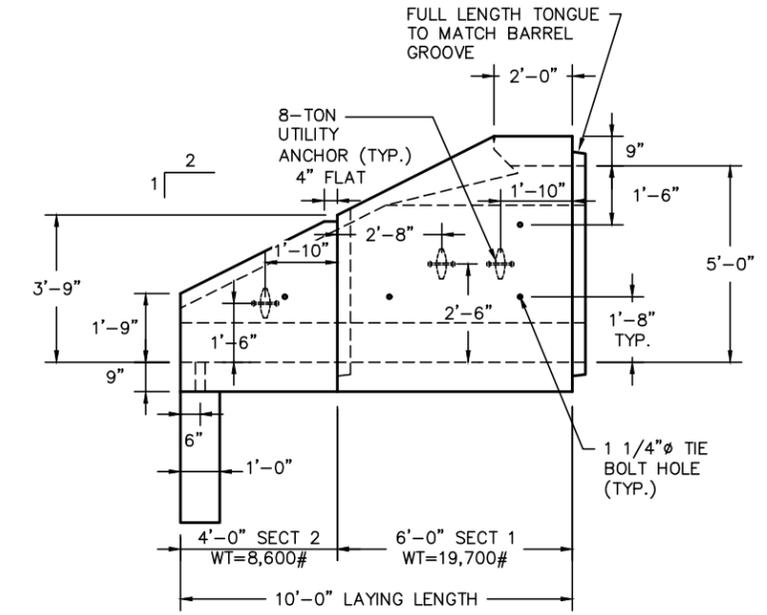
END SECTION HAULING



BARREL SECTION HAULING



12'x5' SLOPED END SECTIONS – END VIEW
SCALE 1:56

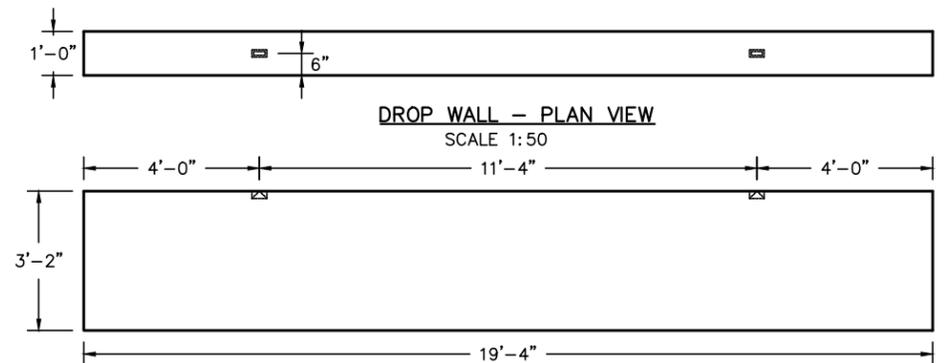


12'x5' SLOPED END SECTION – PROFILE VIEW
SCALE 1:56

All Box Culverts will have 2 handling holes in top slab.
Boxes with 10' or greater rise will have 2 additional handling holes in bottom slab.

BOX CULVERT NOTES:

- DESIGN AND ANALYSIS IS PERFORMED ON ERIKSSON CULVERT V5.10.0.0 COMPUTER PROGRAM. DESIGN CONFORMS WITH CURRENT AASHTO LRFD AND ASTM C1577 SPECIFICATIONS PER SECTION 7.2 "MODIFIED AND SPECIAL DESIGNS" AND IS FOR HL-93 LIVE LOADS.
- CONCRETE STRENGTH TO BE MINIMUM OF $f'_c = 5,000$ PSI.
- STANDARD 12'x5'x6' BARREL SECTION WEIGHT =12.7 TON.
- JOINT TONGUE ENDS ARE TO BE LAID IN THE DIRECTION OF FLOW. LINE LAYOUT ASSUMES 1/2" JOINT GROWTH.
- CONTRACTOR TO CLEAN THE JOINTS THOROUGHLY AND MAKE SURE JOINTS ARE DRY PRIOR TO APPLYING BUTYL JOINT SEAL.
- ONE ROW OF 1" EZ-STIK BUTYL JOINT SEAL TO BE PLACED AROUND ENTIRE JOINT.
- FILTER FABRIC TO BE PLACED ACROSS TOP SLAB AND DOWN EACH SIDE WALL CENTERED ON JOINT.
- EACH BARREL SECTION TO BE SUPPLIED WITH TWO (2) LIFT HOLES IN THE TOP SLAB. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE RIGGING FOR UNLOADING AND INSTALLING BOX CULVERT SECTIONS.
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DROP WALL – PLAN VIEW
SCALE 1:50

DROP WALL – PROFILE VIEW
2 EA. REQ. WT= 9,185#

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		SCALE: N.T.S.	REV:	BY:
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DR'N: KKS	CK'D:	R/S: 2122033BX1	PAGE: 2 OF 2	
CONT: GRAND FORKS COUNTY HWY DEPT.				
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