| DESIGN DATA CR10 - West of US 85 | | | | | | |
|---|---|---|---|---|---|---|
| Traffic | | Average Daily | | | | |
| Current | 2019 | Pass: | 163 | Trucks: 12 | Total: | 175 |
| Forcast | 2041 | Pass: | 242 | Trucks: 18 | Total: | 260 |
| Clear Zone Distance: | | 26 FT | | Design Speed: | | 65 MPH |
| Minimum Sight Dist. for Stopping: 645 FT | | | | Bridges: N/A | | |
| Limited Access Control | | | | | | |
| Pavement Design Life | | | | | | |
| Design Accumulated One-ay Flexible ESAL's: N/A | | | | | | |

| DESIGN DATA 78th Street NW - West of US 85 | | | | | | |
|---|---|---|---|---|---|---|
| Traffic | | Average Daily | | | | |
| Current | 2019 | Pass: | NA | Trucks: NA | Total: | 25 |
| Forcast | 2041 | Pass: | NA | Trucks: NA | Total: | 37 |
| Clear Zone Distance: | | 18 FT | | Design Speed: | | 55 MPH |
| Minimum Sight Dist. for Stopping: 495 FT | | | | Bridges: N/A | | |
| Limited Access Control | | | | | | |
| Pavement Design Life | | | | | | |
| Design Accumulated One-ay Flexible ESAL's: N/A | | | | | | |

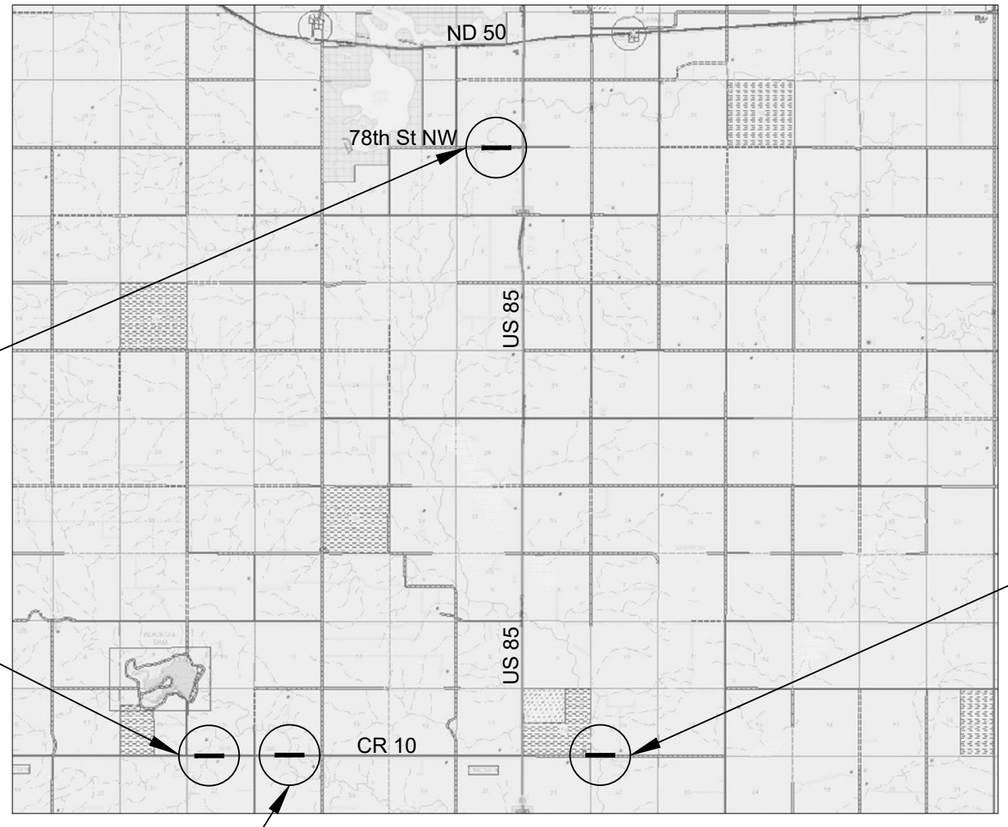
| DESIGN DATA CR10 - East of US 85 | | | | | | |
|---|---|---|---|---|---|---|
| Traffic | | Average Daily | | | | |
| Current | 2019 | Pass: | 138 | Trucks: 12 | Total: | 150 |
| Forcast | 2041 | Pass: | 203 | Trucks: 17 | Total: | 223 |
| Clear Zone Distance: | | 18 FT | | Design Speed: | | 55 MPH |
| Minimum Sight Dist. for Stopping: 495 FT | | | | Bridges: N/A | | |
| Limited Access Control | | | | | | |
| Pavement Design Life | | | | | | |
| Design Accumulated One-ay Flexible ESAL's: N/A | | | | | | |



# JOB #18
# WILLIAMS COUNTY
# NORTH DAKOTA

FEDERAL AID PROJECT BRR-0053(053)
WILLIAMS COUNTY MULTIPLE BRIDGE
REPLACEMENT PROJECT

COUNTY PROJECT 20-2-16A
WILLIAMS COUNTY, NORTH DAKOTA
WILLIAMS COUNTY MULTIPLE BRIDGE REPLACEMENT PROJECT




Site #2
Structure No. 53-120-06
New Structure No. 53-120-06.1
Beginning of Project Sta: 209+00
End of Project Sta: 212+00
Sec 5 of T158N-R100W
Sec 32 of T159N-R100W

Structure No.53-116-14.7
CR 10 Culvert
Replacement Project
By Others

Site #1
Structure No. 53-117-15
New Structure No. 53-117-15.1
Beginning of Project Sta: 110+80
End of Project Sta: 112+80
Sec 14 & 23 of T157N-R101W

Site #3
Structure No. 53-122-15
New Structure No. 53-122-15.1
Beginning of Project Sta: 310+60
End of Project Sta: 313+00
Sec 15 & 22 of T157N-R100W

| STATE | PROJECT NO. | PCN | SECTION NO. | SHEET NO. |
|---|---|---|---|---|
| ND | BRR-0053(053) | 22771 | 1 | 1 |

GOVERNING SPECIFICATIONS:
2020 Standard Specification adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date of the project is advertised.

| PROJECT DESCRIPTION | Net Miles | Gross Miles |
|---|---|---|
| Williams County Multiple Bridge Replacements | | |
| Site #1 | 0.04 | 0.04 |
| Site #2 | 0.06 | 0.06 |
| Site #3 | 0.05 | 0.05 |
| | 0.15 | 0.15 |

N

DESIGNERS

Timothy Arens, PE

Cole Jones, EI

Carrie Fraser

APPROVED DATE 08/14/2020

Wayne Crow /s/
COUNTY HIGHWAY ENGINEER
WILLIAMS COUNTY
NORTH DAKOTA

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of North Dakota.

08/14/2020
APPROVED DATE

Timothy Arens /s/
Ackerman-Estvold Engineering & Management Consulting, Inc.

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Minot, ND | Williston, ND | Boise, ID

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 2 | 1 |

# TABLE OF CONTENTS

## PLAN SECTIONS

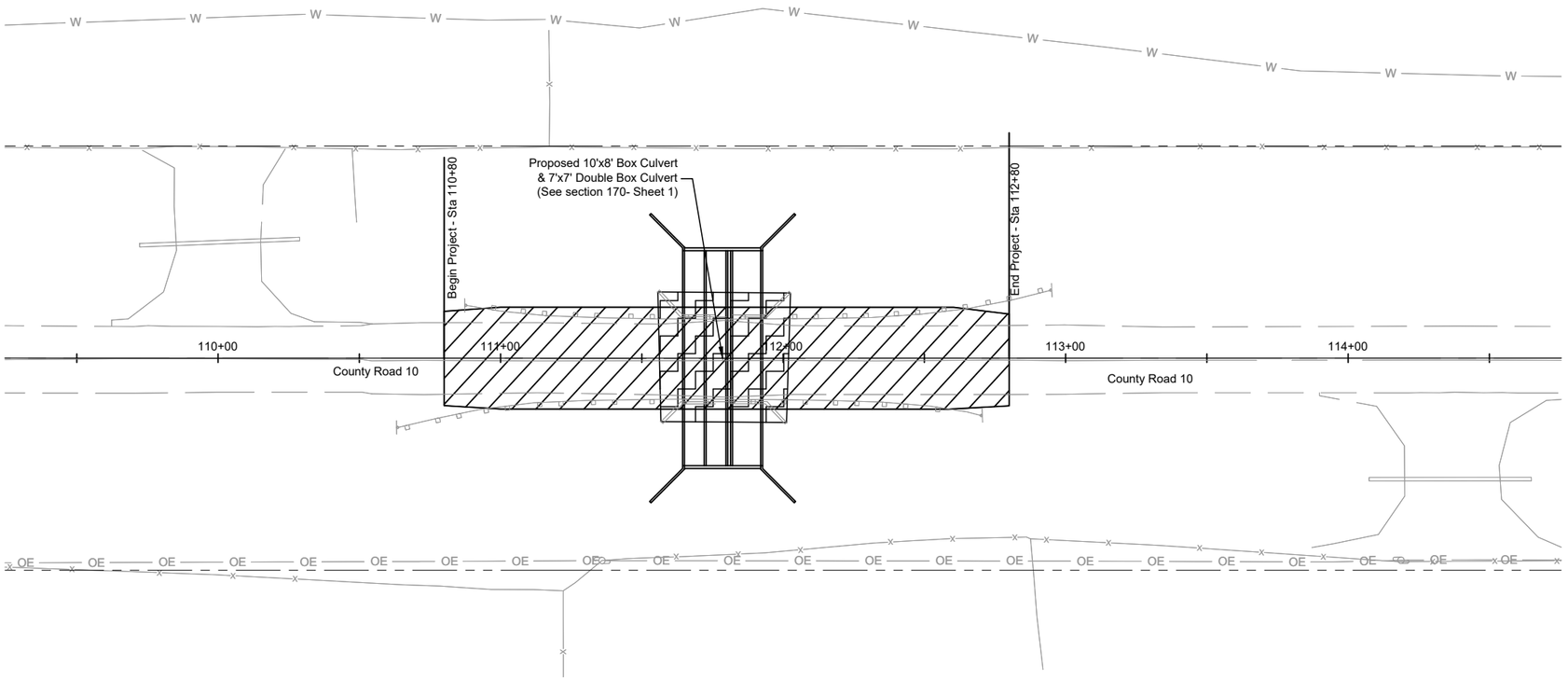


## LIST OF STANDARD DRAWINGS



## SPECIAL PROVISIONS

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 4 | 1 |





Scope

Structure Removal, Box Culvert Installation, Grading, Aggregate Base Course CL 5, Asphalt Paving, and Incidentals.

## LEGEND

Roadway Widening & Asphalt Paving

Structure Removal & Box Culvert Installation

Existing Right of Way

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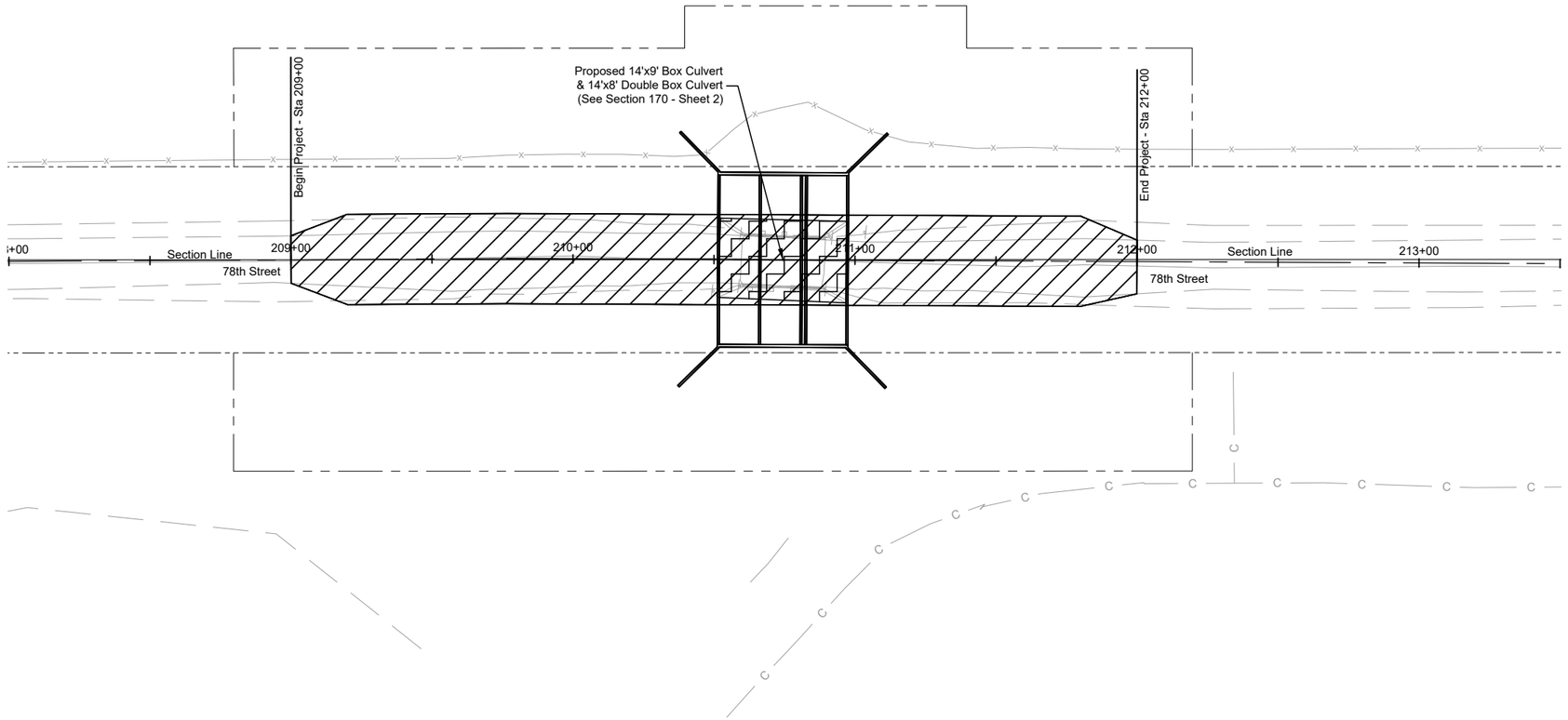
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Scope of Work
Site #1 - CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 4 | 2 |





Scope

Structure Removal, Box Culvert Installation, Grading, Aggregate Base Course CL 5, Asphalt Paving, and Incidentals.

## LEGEND

- Roadway Widening & CL5 Aggregate Surface
- Structure Removal & Box Culvert Installation
- Existing Right of Way
- Permanent Roadway Easement

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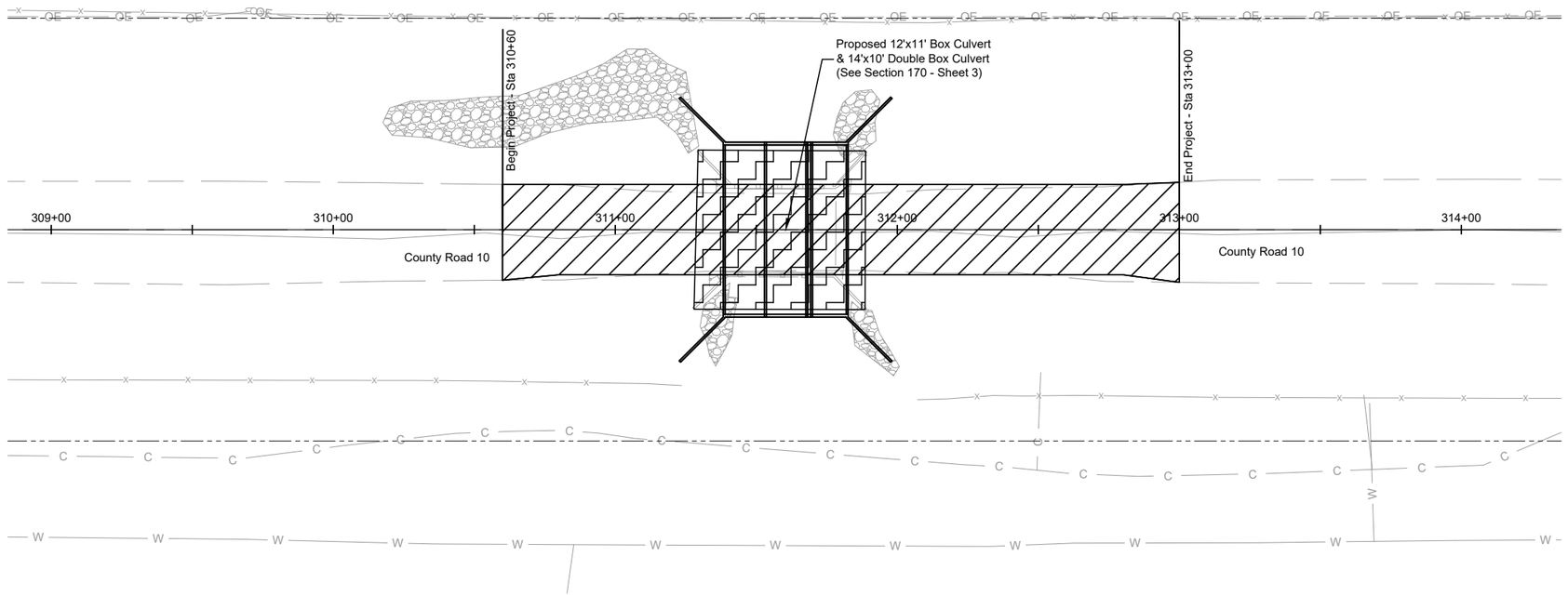
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Scope of Work
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 4 | 3 |





Scope

Structure Removal, Box Culvert Installation, Grading, Aggregate Base Course CL 5, Asphalt Paving, and Incidentals.

## LEGEND

Roadway Widening & CL5 Aggregate Surface

Structure Removal & Box Culvert Installation

Existing Right of Way

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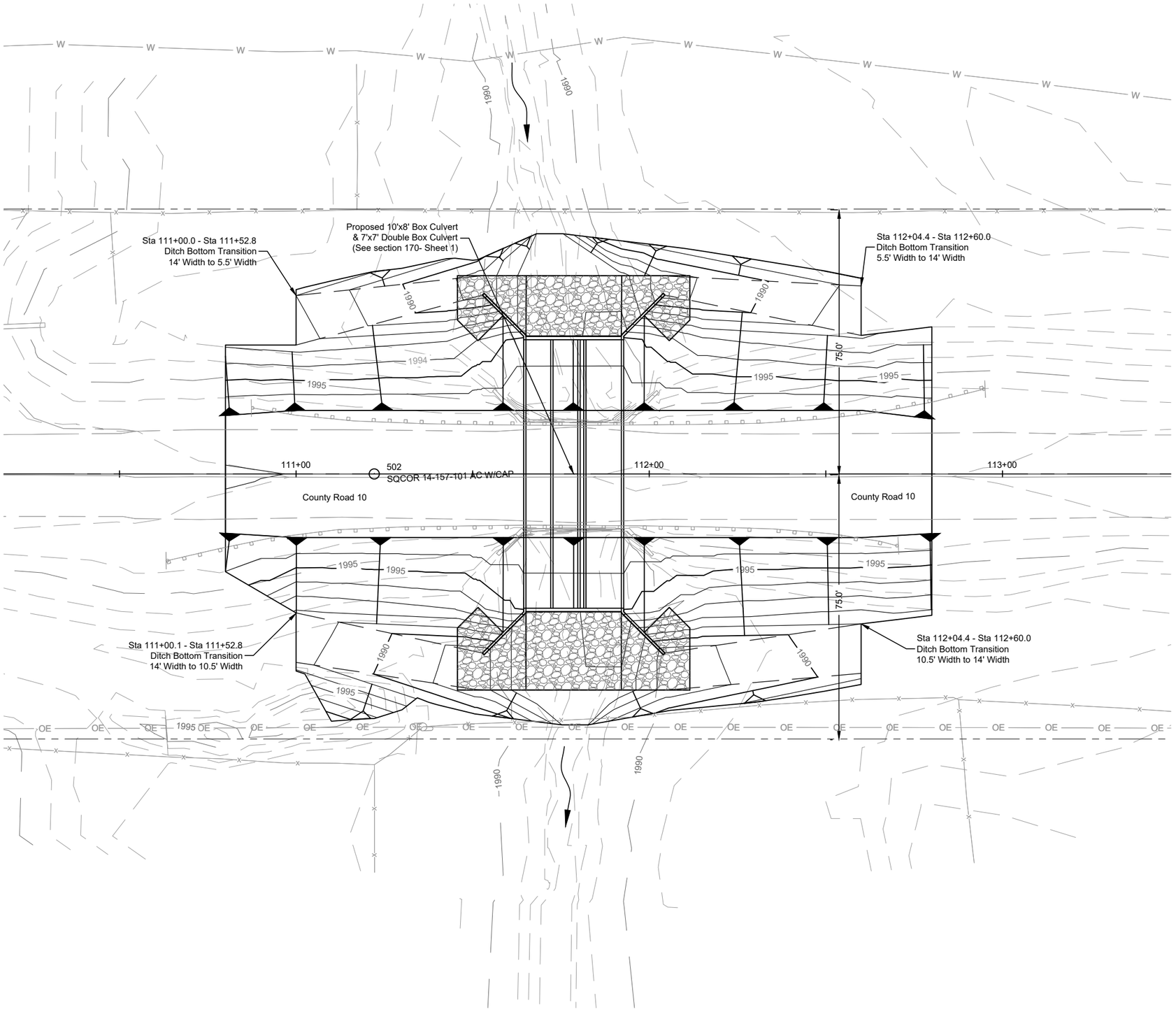
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Scope of Work
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 4 | 4 |




N

## LEGEND

Existing Right of Way

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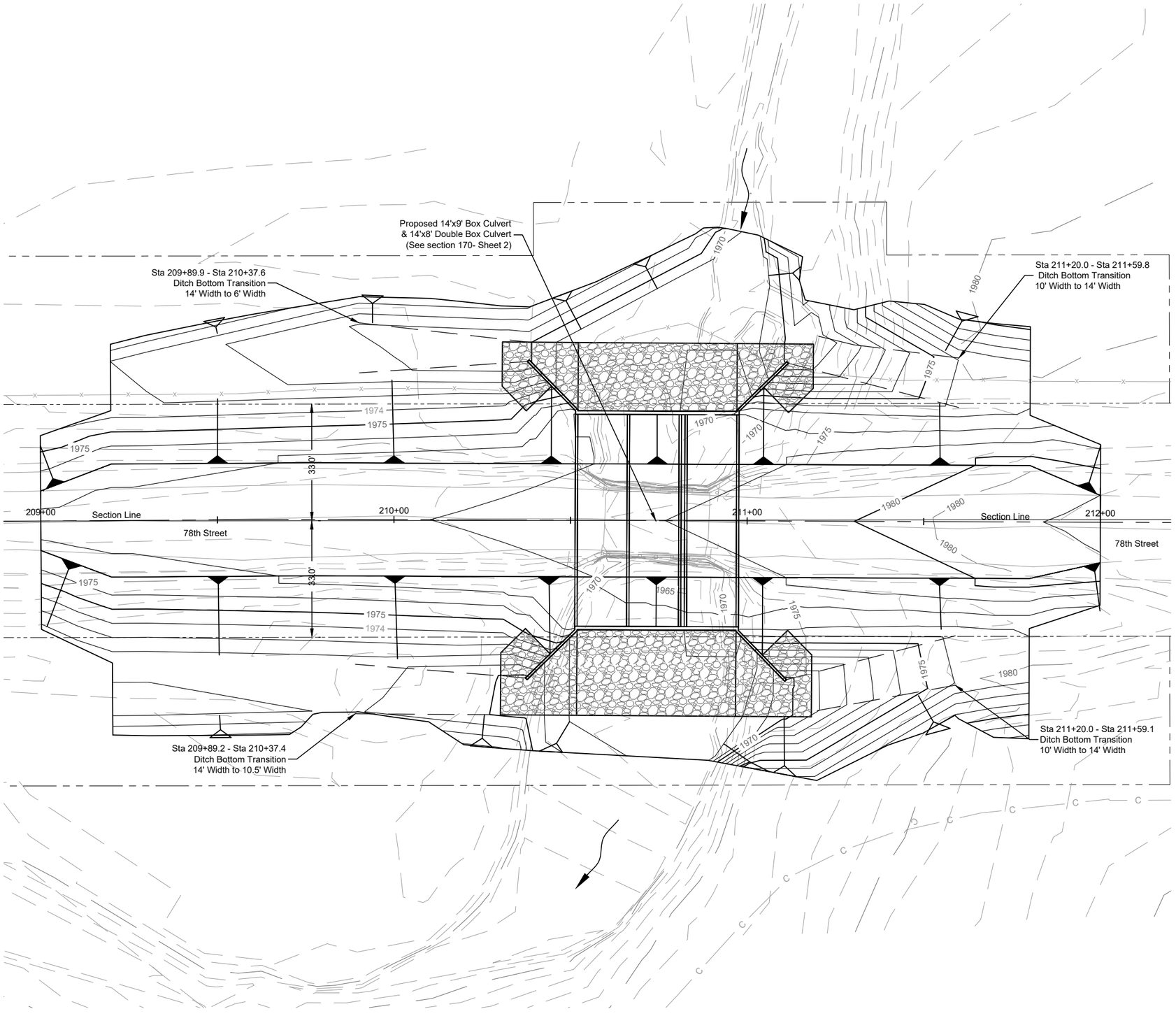
SCALE (H): 1"=30'
SCALE (V): NA

15 7.5 0 15 30

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Site Plan
Site #1 CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 4 | 5 |




N

## LEGEND

Existing Right of Way

Permanent Roadway Easement

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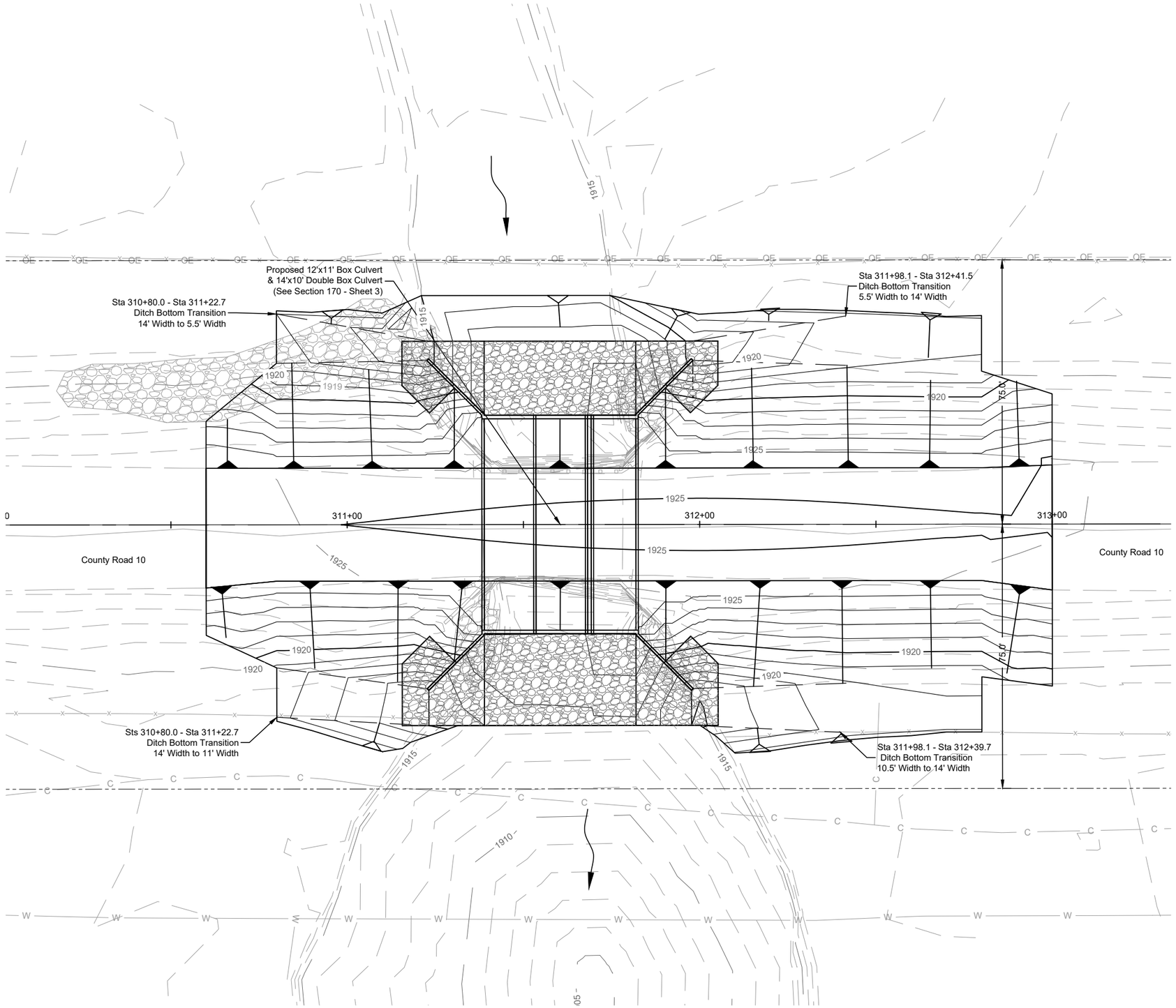
SCALE (H): 1"=30'
SCALE (V): NA

15 7.5 0 15 30

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Site Plan
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 4 | 6 |




N

## LEGEND

Existing Right of Way

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SCALE (H): 1"=30'
SCALE (V): NA

15 7.5 0 15 30

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Site Plan
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 6 | 1 |

# NOTES

100-P01 WORK SCHEDULE:
In order to minimize interference with traffic operations, a detailed schedule shall be agreed to prior to beginning work between:

Project Representative or Inspector
Affected Utilities
Williams County, ND
Contractor
Subcontractors

Construction shall be limited to thirty minutes prior to sunrise and thirty minutes prior to sunset. Any work to be performed on Sundays or holidays shall be authorized by the Project Representative or Inspector.

100-P02 EXISTING ROADS: The Contractor shall protect the existing roads from damage. The Contractor shall repair any damage to the existing roads caused by construction and related operations. The Contractor shall sweep all material tracking and debris from the roadway immediately or at the direction of the Engineer.

100-P03 PLANNING/REPORTING MEETING: A planning/reporting meeting is to be held weekly with the Engineer to coordinate the efforts between the Contractor, subcontractors, local authorities, and others.

The Contractor shall send a knowledgeable representative to the weekly reporting/planning meeting and provide a written schedule of the next week's work and a tentative schedule of the following week.

The Engineer will prepare the meeting agenda, record the meeting minutes, distribute the meeting minutes and organize the meetings by contacting interested agencies. These agencies may include, but are not limited to, the following:

Affected Utilities
Williams County
Police, Sheriff and Highway Patrol departments
Fire Departments
Ambulance Service
Subcontractors
Project Representative/Inspector

100-P04 COORDINATION OF PROJECTS: Other construction projects may be ongoing in the area, including Williams County project #18-2-24, CR 10 Culvert Replacement, Structure #53-116-14.7. The Contractor shall coordinate traffic control and work operations with the other projects. Cost to relocate or add signing shall be at the price bid for "Traffic Control Signs". All other costs shall be incidental.

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.

105-P02 CONSTRUCTION STAKING: Construction staking will be provided by the Owner/Engineer. Electronic design information will **NOT** be provided for use in automated machine control. The Owner/Engineer will provide the following with regard to construction staking:

1. Horizontal and Vertical Control (1 point every ½ mile)
2. Center Line Offset & Grade / Right-of-Way (100' interval both sides)
3. Slope Staking (100' interval both sides)
4. Box Culvert Center Line & End Section Offsets
5. Subgrade Bluetopping Centerline & Shoulders (100' Interval)
6. Gravel Base Bluetopping Centerline & Shoulders (100' Interval)
7. Center Line Poppy Line for Paving (200' intervals on second lift)

Staking of these items will be provided to the Contractor one time. Contractor shall protect all stakes. Damaged stakes and/or re-staking requests will be the Contractor responsibility and all related costs shall be incidental to the other Project costs. If the contractor requires additional staking outside of what is listed within this item, a DEM or related electronic design file, or any other related survey or design information to facilitate their operations, it is the contractor's responsibility to subcontract those items within their contracted services as needed. Related costs for any additional survey or electronic file requirements by the contractor shall be incidental to other project costs.

106-P01 SUBGRADE COMPACTION AND CONTROL: Placement of embankment shall be in accordance with Section 203.04 E.3 of the NDDOT Standard Specifications. Finished subgrade shall be test rolled using a Tandem Truck with a gross weight of 45,000 pounds. Yielding and rutting of 1/2" or greater indicates a failed test. Finished subgrade elevation shall not vary by more than 0.04 feet.

107-P01 HAUL ROAD INSPECTION: Before hauling over a designated haul road, the Engineer, the Contractor, and the agency charged with control and maintenance of the route will make a joint inspection of the haul road. The contractor will be responsible for video or photographic evidence of the pre-construction roadway conditions in the event that haul road repairs are directed.

150-P01 CONTRACTOR FURNISHED SCALE, SCALE PERSON AND DUMP PERSON: A Contractor furnished scale, scale person, and dump person will be required on this project. All related costs shall be incidental to the price bid for the items requiring a scale, scale person, and dump person.

202-P01 REMOVAL OF STRUCTURES: The existing structures at sites #1 and #3 consist of a concrete deck, steel beams, concrete abutments, concrete wingwalls and w-beam guardrails. The existing structure at site #2 consists of a concrete deck, steel beams, concrete abutments, concrete wingwalls and metal railing. Any piling not fully removed shall be cut off at a minimum of one foot below the "Class 2 Excavation" limits for sites #1, #2 and #3. All salvaged material shall become property of the Contractor and disposed of off the right of way. The Contractor shall arrange for and secure a suitable disposal site including any permits and site releases for the disposal site(s). All costs for the removal and disposal of the structure shall be included in the price bid for "Removal of Structure – Site #X".

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 6 | 2 |

# NOTES

202-P02 REMOVAL OF RIPRAP - LOOSE ROCK: Remove all material being used as riprap. This includes riprap and large rock. All this material will become property of the contractor. If the contractor wishes to reuse the riprap, the riprap must meet grade listed in plans. All costs for removal and reuse of riprap shall be included in the price bid for “Riprap Grade II”.

202-P03 REMOVAL OF EXISTING FENCE: If the existing fence is removed prior to the installation of the permanent fence, the Contractor shall be responsible for a temporary fence to maintain closure of the pasture lands unless an agreement is made with the landowner to install permanent fence after the removal of the existing fence. All costs to install and maintain the temporary fence will not be paid for separately but shall be included in the price bid for “Remove Existing Fence” and “Fence Barbed Wire 3 Strand – Steel Post”.

202- P04 REMOVE SIGN AND SUPPORT: All signs and supports to be removed shall be incidental to other work.

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

203-P01 TOPSOIL: All topsoil shall be salvaged. Removal of topsoil is based upon a 6” depth. The topsoil shall be removed to its full depth and stockpiled. Upon completion of the work in these areas, the topsoil shall be spread evenly over the areas to be seeded.

203-P02 EXCAVATION AND FILL ELEVATIONS: All ditch grades and contours are given at the top of the topsoil. Proposed centerline elevations indicated in Section 60 are top of asphalt, concrete, or finished surface.

203-P03 COMMON EXCAVATION: “Common Excavation – Type A” and “Common Excavation – Waste” will be paid at plan quantity provided the project is constructed to the lines and grades shown on the plans. Items include the removal of existing aggregate.

203-P04 COMMON EXCAVATION – SUBCUT: If unsuitable material is encountered in the roadway subgrade or box culvert subgrade, subcut to a depth determined by the Engineer and replace with suitable material at the approval of the Engineer. An estimated 600 CY total subcut quantity has been included for potential areas of roadway subcut (at 2’ depth) and for potential areas of subcut around the box culvert installations. All costs to remove and dispose of the material shall be included in the price bid for “Common Excavation – Subcut”. Material used to replace subcut may be taken from “Common Excavation – Waste” assuming it is suitable as determined by the Project Engineer. Any additional material needed to replace subcut shall be “Aggregate Base Course CL 5”, “Foundation Fill”, or “Foundation Fill – Type 1” and will be paid for at the unit bid price.

210-P01 FOUNDATION FILL: The aggregate material used shall be a course, free draining granular material with less than 40 percent passing the #40 sieve and less than 5 percent passing the #200 sieve. This aggregate shall be used as backfill material along the sides and up to the top of the proposed box culverts. Maximum 2” of material may be used as a leveling course over “Foundation Fill – Type I” for installation of proposed box culverts. Moisture and density controls for the aggregate shall be in accordance with Section 203.04 E.2b of the NDDOT Standard Specifications.

210-P02 FOUNDATION FILL – TYPE I: A minimum of 18” of material shall be placed underneath the proposed box culverts. This material shall consist of free draining rock with 100 percent passing the 2-inch sieve and no more than 5 percent passing the #4 sieve. The rock shall be compacted in maximum 12” lifts using a vibratory compactor.

210-P03 FOUNDATION PREPARATION: The Bidder shall be aware of the possible inundated conditions at this site before the bid letting including springs. If a spring is discovered that impacts the intended work, notify the Engineer immediately to determine a course of action. Any extra costs or delays caused by the spring shall not be justification for additional time. The cost of any cofferdams, dewatering the excavation and all measures required to maintain a stable foundation shall be included in the price bid for “Foundation Preparation – Site #X”.

210-P04 STRUCTURAL EXCAVATION: Excavation required to construct the box culvert and place surrounding foundation fill material shall be included in the price bid for “Class 2 Excavation – Box Culvert – Site #X”. If unsuitable material is encountered in the subgrade underneath the proposed box culvert location, subcut to a depth determined by the Engineer and replace with additional Foundation Fill – Type 1 material. A subcut depth of 2’ is included in the quantity for Common Excavation – Subcut. The additional Foundation Fill - Type I and Common Excavation - Subcut will be paid at the unit bid price.

253-P01 HYDRAULIC MULCH: Hydraulic mulch shall be applied in a single application with the permanent class II seed. The seed required for “Seeding Class II” will be paid for separately. All costs for labor, equipment, and materials necessary to complete the hydraulic mulch application shall be included in the price bid for “Hydraulic Mulch”.

255-P01 ECB TYPE 2: Erosion control blanket shall be installed where slopes are equal to or steeper than 3H:1V, including along the wing walls and areas shown on section 75. Additional areas may be designated as determined by the Engineer

256-P01 RIPRAP – GRADE II: Excavation required to place the riprap is included in the quantities for “Common Excavation – Type A” and “Common Excavation – Waste”.

261-P01 EROSION CONTROL: Temporary erosion control consisting of fiber rolls and flotation silt curtain shall be installed prior to disturbing topsoil and removing structures. Additional fiber rolls shall be installed in ditches during the construction operations. Following the installation of topsoil, fiber rolls shall be installed in the ditches and on fill slopes as shown in the plans and as directed by the Engineer.

606-P01 PRECAST REINFORCED CONCRETE BOX CULVERT:

1. The structure at each location shall consist of one single precast box culvert and one double precast box culvert. Two single cell precast box culverts may be substituted for the double precast box culvert of equal size. Should this occur the two substituted single cell box culverts will be paid for as if they were one double precast box culvert under the bid item “Dbl XFT X XFT Precast RCB Culvert”. Any additional work to accommodate single cell culverts versus the double cell box culvert shall also be included in the price bid for “Dbl XFT X XFT Precast RCB Culvert”. The Contractor is responsible for the design of the precast box culvert and end sections. Shop drawings submitted to the Engineer shall be stamped by a professional engineer licensed in the state of North Dakota.

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 6 | 3 |

# NOTES

2. Box sections shall be secured to one another by use of tie bolts. The last precast section shall include a 1' by 1' parapet extending to the outside edge of the box. A cutoff wall shall be installed as shown on the plans. The joints shall be sealed with a flexible, watertight, preformed mastic meeting AASHTO M 220. In addition to the joint sealant, geosynthetic material shall be placed per Section 606.04 E.3 of the NDDOT Standard Specifications.

3. Each end section shall consist of two wingwalls, anchors, and footing. The wingwalls shall be flush with the top of the precast box culvert and extend below the invert elevation of the box. The wingwalls shall be attached to the last box section by use of tie bolts, steel-bolted plates or another approved method so the inside corner surface is smooth. All costs for material and installation shall be included in the price bid for "DBL XFT X XFT Precast RCB End Section."

4. The installation of the boxes shall leave a 9" to 12" space between boxes. The space between the boxes shall be filled with a controlled density backfill. 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 the 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 submit a mix design with sample test results to the engineer for approval prior to use.

5. The 12" thick cap shall consist of a weatherproof and freeze/thaw resistant material such as Sikagrout 212. EVA-POX Epoxy Past No. 22, Speed Crete Red Line, or an approved equal.

6. All costs associated with the items shall be included in the price bid for the precast units.

704-P01 TRAFFIC CONTROL SUPERVISOR: Provide a Traffic Control Supervisor and Watchperson per NDDOT Standard Specification 704.04 C.

704-P02 MAINTAINING ACCESS: The Contractor will be responsible for providing access to all residential dwelling and business establishments adjacent to this project. Final details on location of access points and construction procedures shall be worked out with the Project Representative/Inspector in the field prior to start of the project.

704-P03 TRAFFIC CONTROL SIGNS: "Traffic Control Signs" plan quantity was calculated assuming each site may be closed at the same time. If signs from one site are used again at other sites, they will be paid for at unit bid price for each site.

704-P04 TRAFFIC CONTROL: Work zone traffic control signing shall be in accordance with the NDDOT Standard Specifications and Standard Drawings. A traffic control plan shall be submitted to the Engineer 7 days prior to the beginning of construction and shall be approved by the Project Engineer. All businesses and residents with driveways/access points affected by the construction process shall be notified 48 hours in advance of the construction.

Should the Contractor desire to proceed on a schedule or sequence other than as proposed by the plans, any cost associated with the modification of the proposed traffic control plan, provision for additional easement, lighting or other traffic control features as the revised plan may require, will become the responsibility of the Contractor. The traffic control plans shall be approved by the Engineer.

There will be trucks hauling materials and these trucks will be entering or crossing roadways that have public traffic. These locations will have to be signed as shown on NDDOT Standard Drawings D-704-22, Type K and L.

704-P05 ROAD CLOSURE AND DETOUR: The roadway at each site location may be closed to thru traffic for a period of 45 consecutive calendar days. Access shall be maintained per plan note 704-P02. The detour route as provided in the work zone traffic control plans shall be maintained during the closure. Should sites #1 and #3 detours be installed simultaneously, adjustments of the detour layouts shall be the responsibility of the Contractor and be approved by the Engineer. Any additional cost to relocate or add signing shall be at the price bid for "Traffic Control Signs".

709-P01 GEOSYNTHETIC MATERIAL TYPE RR: Separation material shall be installed under the rock riprap.

709-P02 GEOSYNTHETIC MATERIAL TYPE R1: Reinforcement material shall be placed parallel to the roadway centerline. If more than one piece of fabric is used to meet the required length, then the joint must be pinned. Adjacent strips of fabric shall be overlapped. All fabric must be taut and pinned with a 6" (min) pin, peg, or staple every 15' along all edges and on all corners prior to placing fill on the fabric.

714-P01 TEMPORARY STREAM DIVERSION: A temporary stream diversion consisting of an open channel, culvert(s) and/or bypass pumping shall be used during the construction of the box culverts to maintain the stream flow. If bypass pumping is used, the normal stream flow shall be maintained at all times. Design the temporary diversion to withstand the 2-year event as noted in the table below. The temporary diversion plan shall be included in the Storm Water Pollution Prevention Plan (SWPPP) and be submitted to the Engineer 10 days prior to the beginning of construction. All costs of material, labor and equipment to install, maintain, and remove the temporary diversion including use of culverts and erosion control devices shall be included in the price bid for "Temporary Stream Channel Diversion – Site #X". Payment for the stream diversion will be at 75% of the total price bid upon completion of the diversion and the remaining 25% will be paid upon restoration of the diversion.

| | Site #1 | Site #2 | Site #3 |
|---|---|---|---|
| 2-Year Flow | 158 cfs | 293 cfs | 408 cfs |

920-P01 DUST PALLIATIVE MATERIAL: Provide a solution containing a minimum of 30% magnesium chloride or calcium chloride. Apply the liquid solution in a single application at a rate of 0.5 gallons per square yard of aggregate surfacing and allow solution to penetrate. Include all labor, materials, and equipment associated with the placement in the unit price bid for "Dust Palliative Material".

Only apply the magnesium chloride or calcium chloride solution at locations directed by the Project Engineer.

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 6 | 4 |

# ENVIRONMENTAL NOTES

ENVIRONMENTAL NOTES (EN): Williams County has made environmental commitments to secure approval of this project. The following environmental notes are requirements to comply with these commitments:

EN-1 WHOOPING CRANE: The project is located within the migration corridor of the endangered whooping crane, and suitable stopover habitat for the whooping crane is present. The migration periods of the whooping crane are April 1st to May 15th and September 10 to October 31.

Stop all construction activities and notify the Engineer immediately in the event a whooping crane is identified within one mile of the project location. The Engineer will then coordinate with the USFWS, FHWA and NDDOT. Do not resume work within the avoidance area until the Engineer has confirmed that the bird has left the area.

Above ground utility conflicts are not foreseen with this project but if any impacts are required, contact the Engineer to coordinate with the utility company. Bird diverters will be installed by the utility company on overhead utility lines that are shifted due to the proposed action.

EN-2 AQUATIC NUISANCE SPECIES (ANS): Equipment that was last used outside of North Dakota or within a Class I infested waterbody (identified on the North Dakota Game and Fish Department (NDGFD) website) requires an inspection by NDGFD. Notify the NDGFD at least 10 business days prior to pumps, watercraft, or any equipment entering a public water to allow the NDGFD sufficient time to inspect any and all such equipment for ANS. Contact the NDGFD ANS Coordinator, Jessica Howell by e-mail jmhowell@nd.gov for equipment inspections. Supply one of the following to the engineer as proof of compliance prior to work taking place in the water: (1) the NDGFD inspection report, (2) documented NDGFD correspondence (email or signed letter). If an inspection is not required, no follow up documentation is required.

EN-3 TEMPORARY WETLAND IMPACT: Temporary impact areas within wetlands and or 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.

EN-4 WETLAND MITIGATION: Wetland mitigation is required for unavoidable permanent wetland impacts. Williams County will mitigate the wetland impacts by purchasing wetland credits through Ducks Unlimited within the Missouri River Basin Northern Zone service area.

PERMITS:
A US Army Corps of Engineers permit, pursuant to Section 404 of the Clean Water Act, will be required for jurisdictional waters prior to construction activities. The permit must be in hand prior to work within any wetlands. Refer to Special Provision PSP 11(20) – Permits and Environmental Considerations.

The Contractor shall file a “Notice of Intent to Obtain Coverage under NDPDES General Permit for Storm Water Discharge Associated with Construction Activity” (NOI). This form shall be filed with the North Dakota Department of Environmental Equality per the permit requirements before construction begins. Owner to be listed as Williams County. The Contractor is responsible for all erosion control measures.

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 8 | 1 |

# Estimated Quantities

| SPEC | CODE | ITEM DESCRIPTION | UNIT | Site #1 | Site #2 | Site #3 | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| 103 | 0100 | CONTRACT BOND | L SUM | 0.34 | 0.33 | 0.33 | | 1 |
| 202 | 0108 | REMOVAL OF STRUCTURE-SITE 1 | L SUM | 1 | | | | 1 |
| 202 | 0109 | REMOVAL OF STRUCTURE-SITE 2 | L SUM | | 1 | | | 1 |
| 202 | 0110 | REMOVAL OF STRUCTURE-SITE 3 | L SUM | | | 1 | | 1 |
| 202 | 0132 | REMOVAL OF BITUMINOUS SURFACING | SY | 556 | | | | 556 |
| 202 | 0153 | SAW BITUMINOUS SURFACING-FULL DEPTH | LF | 50 | | | | 50 |
| 202 | 0312 | REMOVE EXISTING FENCE | LF | 85 | 348 | 20 | | 453 |
| 203 | 0101 | COMMON EXCAVATION-TYPE A | CY | 220 | 679 | 21 | | 920 |
| 203 | 0113 | COMMON EXCAVATION-WASTE | CY | 565 | 771 | 1398 | | 2734 |
| 203 | 0125 | REMOVE & SALVAGE TOPSOIL | CY | 303 | 485 | 367 | | 1155 |
| 203 | 0138 | COMMON EXCAVATION - SUBCUT | CY | 200 | 200 | 200 | | 600 |
| 210 | 0112 | CLASS 2 EXCAVATION-SITE 1 | L SUM | 1 | | | | 1 |
| 210 | 0113 | CLASS 2 EXCAVATION-SITE 2 | L SUM | | 1 | | | 1 |
| 210 | 0114 | CLASS 2 EXCAVATION-SITE 3 | L SUM | | | 1 | | 1 |
| 210 | 0202 | FOUNDATION PREPARATION-SITE 1 | L SUM | 1 | | | | 1 |
| 210 | 0203 | FOUNDATION PREPARATION-SITE 2 | L SUM | | 1 | | | 1 |
| 210 | 0204 | FOUNDATION PREPARATION-SITE 3 | L SUM | | | 1 | | 1 |
| 210 | 0209 | FOUNDATION FILL | TON | 908 | 1464 | 1244 | | 3616 |
| 210 | 0225 | FOUNDATION FILL - TYPE I | TON | 849 | | 1093 | | 1942 |
| 216 | 0100 | WATER | M GAL | 53 | 45 | 54 | | 152 |
| 230 | 0300 | SUBGRADE PREPARATION-TYPE A | STA | 2 | 3 | 2.4 | | 7.4 |
| 251 | 0200 | SEEDING CLASS II | ACRE | 0.5 | 0.6 | 0.6 | | 1.7 |
| 253 | 0201 | HYDRAULIC MULCH | ACRE | 0.5 | 0.6 | 0.6 | | 1.7 |
| 255 | 0102 | ECB TYPE 2 | SY | 235 | 357 | 269 | | 861 |
| 256 | 0200 | RIPRAP GRADE II | CY | 187 | 274 | 294 | | 755 |
| 261 | 0112 | FIBER ROLLS 12IN | LF | 625 | 697 | 519 | | 1841 |
| 261 | 0113 | REMOVE FIBER ROLLS 12IN | LF | 505 | 597 | 479 | | 1581 |
| 262 | 0100 | FLOTATION SILT CURTAIN | LF | 125 | 117 | 186 | | 428 |
| 262 | 0101 | REMOVE FLOTATION SILT CURTAIN | LF | 125 | 117 | 186 | | 428 |
| 302 | 0120 | AGGREGATE BASE COURSE CL 5 | TON | 752 | 372 | 297 | | 1421 |
| 302 | 0320 | AGGREGATE SURFACE COURSE CL 5 | TON | | 500 | 400 | | 900 |
| 401 | 0050 | TACK COAT | GAL | 66 | | | | 66 |
| 430 | 0041 | SUPERPAVE FAA 41 | TON | 225 | | | | 225 |
| 430 | 1000 | CORED SAMPLE | EA | 25 | | | | 25 |
| 430 | 5803 | PG 58S-28 ASPHALT CEMENT | TON | 13.5 | | | | 13.5 |
| 606 | 1008 | 10FT X 8FT PRECAST RCB CULVERT | LF | 78 | | | | 78 |
| 606 | 1211 | 12FT X 11FT PRECAST RCB CULVERT | LF | | | 62 | | 62 |
| 606 | 1409 | 14FT X 9FT PRECAST RCB CULVERT | LF | | 62 | | | 62 |
| 606 | 2707 | DBL 7FT X 7FT PRECAST RCB CULVERT | LF | 78 | | | | 78 |
| 606 | 3408 | DBL 14FT X 8FT PRECAST RCB CULVERT | LF | | 62 | | | 62 |
| 606 | 3410 | DBL 14FT X 10FT PRECAST RCB CULVERT | LF | | | 62 | | 62 |
| 606 | 6707 | DBL 7FT X 7FT PRECAST RCB END SECTION | EA | 2 | | | | 2 |
| 606 | 7408 | DBL 14FT X 8FT PRECAST RCB END SECTION | EA | | 2 | | | 2 |
| 606 | 7410 | DBL 14FT X 10FT PRECAST RCB END SECTION | EA | | | 2 | | 2 |
| 702 | 0100 | MOBILIZATION | L SUM | 0.34 | 0.33 | 0.33 | | 1 |
| 704 | 1000 | TRAFFIC CONTROL SIGNS | UNIT | 1882 | 732 | 1323 | | 3937 |
| 704 | 1052 | TYPE III BARRICADE | EA | 5 | 3 | 4 | | 12 |

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 8 | 2 |

## Estimated Quantities

| SPEC | CODE | ITEM DESCRIPTION | UNIT | Site #1 | Site #2 | Site #3 | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| 704 | 1060 | DELINEATOR DRUMS | EA | 7 | 7 | 6 | | 20 |
| 706 | 0550 | BITUMINOUS LABORATORY | EA | 1 | | | | 1 |
| 706 | 0600 | CONTRACTOR'S LABORATORY | EA | 1 | | | | 1 |
| 709 | 0151 | GEOSYNTHETIC MATERIAL TYPE R1 | SY | 592 | 614 | 654 | | 1860 |
| 709 | 0155 | GEOSYNTHETIC MATERIAL TYPE RR | SY | 264 | 389 | 420 | | 1073 |
| 752 | 0100 | FENCE BARBED WIRE 3 STRAND | LF | 50 | 366 | 35 | | 451 |
| 752 | 3150 | CORNER ASSEMBLY BARBED WIRE-WOOD POST | EA | 1 | 6 | 2 | | 9 |
| 754 | 0803 | OBJECT MARKERS - TYPE III | EA | 4 | 4 | 4 | | 12 |
| 760 | 0005 | RUMBLE STRIPS - ASPHALT SHOULDER | MILE | 0.1 | | | | 0.1 |
| 760 | 0007 | RUMBLE STRIPS - ASPHALT CENTERLINE | MILE | 0.1 | | | | 0.1 |
| 762 | 1104 | PVMT MK PAINTED 4IN LINE | LF | 600 | | | | 600 |
| 900 | 1001 | TEMPORARY STREAM DIVERSION - SITE #1 | EA | 1 | | | | 1 |
| 900 | 1002 | TEMPORARY STREAM DIVERSION - SITE #2 | EA | | 1 | | | 1 |
| 900 | 1003 | TEMPORARY STREAM DIVERSION - SITE #3 | EA | | | 1 | | 1 |
| 920 | 1500 | DUST PALLIATIVE MATERIAL | GAL | 10667 | | 19556 | | 30223 |

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 10 | 1 |

# BASIS OF ESTIMATE

## Surfacing

Aggregate Surface Course CL 5 @ 1.875 Ton/CY
Aggregate Base Course CL 5 @ 1.875 Ton/CY
Superpave FAA 41 @ 2.000 Ton/CY
PG 58S-28 Asphalt Cement @ 5.8%
Tack Coat @ 0.05 Gal/SY (1st Lift)
Tack Coat @ 0.05 Gal/SY (2nd Lift)

## Water

25 Gal/Mile for Dust Palliative
20 Gal/Ton for Aggregates
10 Gal/CY for Embankment

## HMA Core Determination:

| HMA Cored Samples | | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | | | |
| Specification Section | Distance (Ft)÷2000 | Lanes | Lifts | Sublots (A × B × C) | Quantity (D × 2) | Quantity (1 per mile) | Unit |
| 430.04 I.2.b(1), "General" | 1 | 2 | 3 | 6 | 12 | N/A | EA |
| SP 968(14) Longitudinal Joint Density in HMA Pavements (Centerline) | 1 | 2 | 3 | 6 | 12 | N/A | EA |
| 430.04 I.2.b(2),"Pavement Thickness Determination Cores" | | | | | N/A | 1 | EA |
| | | | | Total | 24 | 1 | EA |

## Erosion Control Measures:

An additional 600 linear feet of 12 IN Fiber Roll has been provided to be used at the discretion of the Engineer.

## Foundation Fill:

Foundation fill converted from CY to Ton @ 1.875 Ton/CY plus additional 25%

Additional Foundation Fill – Type I may be required if unsuitable material is found during box culvert excavations requiring Subcut. The depth of Subcut to be determined by Engineer during box culvert excavations.

| | Foundation Fill | Foundation Fill - Type I | Foundation Fill - Type I |
|---|---|---|---|
| Location | Plan Quantity (TON) | Plan Quantity (TON) | *Additional Quantity (TON) |
| Site #1 - CR 10, West of US 85 | 908 | 474 | 375 |
| Site #2 - 78th St., West of US 85 | 1,464 | 0 | 0 |
| Site #3 - CR 10, East of US 85 | 1,244 | 718 | 375 |

*Additional quantity for Foundation Fill Type I assuming 2' depth of Subcut is required during proposed excavations box culvert

## Dust Palliative Material:

| Dust Palliative Material (Calcium Chloride or Magnesium Chloride) | | | | | |
|---|---|---|---|---|---|
| | A | B | (A x B)/9 | | Pay Item |
| Road Section | Roadway Length (ft.) | Roadway Width (ft.) | Total (SY) | Spread Rate (GAL/SY) | Total* (GAL) |
| Site #1 - CR 10, West of US 85 | 6,000 | 24 | 5,333 | 0.5 | 10,67 |
| Site #2 - 78th St., West of US 85 | 0 | 20 | 0.00 | 0.5 | 0 |
| Site #3 - CR 10, East of US 85 | 11,000 | 26 | 8,667 | 0.5 | 19,556 |

*Dust Palliative Material to be used in front of residences along the detour route as directed by the Project Engineer

## Earthwork Summary

| Earthwork Summary | | | | |
|---|---|---|---|---|
| | A | B | (=B) | (A-B) |
| Location | Total Excavation (CY) | Embankment Required* (CY) | Common Excavation - Type A (CY) | Common Excavation - Waste (CY) |
| Site #1 - CR 10, West of US 85 | 785 | 220 | 220 | 565 |
| Site #2 - 78th St., West of US 85 | 1,450 | 679 | 679 | 771 |
| Site #3 - CR 10, East of US 85 | 1,419 | 21 | 21 | 1,398 |

*25% additional quantity is included in Embankment Required to account for shrinkage

| Box Culvert - Excavation | | |
|---|---|---|
| Location | ** Class 2 Excavation (CY) | *** Subcut (CY) |
| Site #1 - CR 10, West of US 85 | 738 | 200 |
| Site #2 - 78th St., West of US 85 | 797 | 200 |
| Site #3 - CR 10, East of US 85 | 981 | 200 |

**Material excavated for the "Class 2 Excavation – Box Culvert" was not included in the Total Excavation for each site. It shall be included in the price bid for Class 2 Excavation at each site and shall be disposed of offsite.

***Subcut refers to an additional 2' of excavation underneath the proposed box culverts if unsuitable material is discovered. Depth of Subcut to be determined by the Engineer during box culvert excavations.

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 10 | 2 |

# BASIS OF ESTIMATE

**Permanent Pavement Marking**

| Permanent Pavement Marking | | |
|---|---|---|
| Location - Type | Basis | Quantity |
| **Bridge 53-117-15 - Site #1** | | |
| Centerline – Preformed Patterned Pvmt MK 4 IN Line - Grooved | Centerline Skips 1,320 LF/mile<br>Barrier Stripe 990 LF/mile | 200 LF |
| Edge Lines – Epoxy Pvmt MK 4 IN Line | 10,560 LF/mile | 400 LF |

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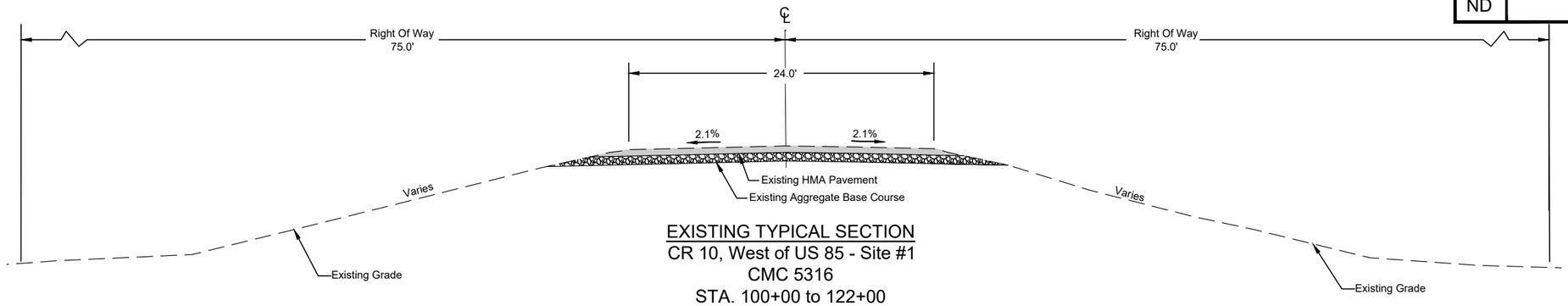
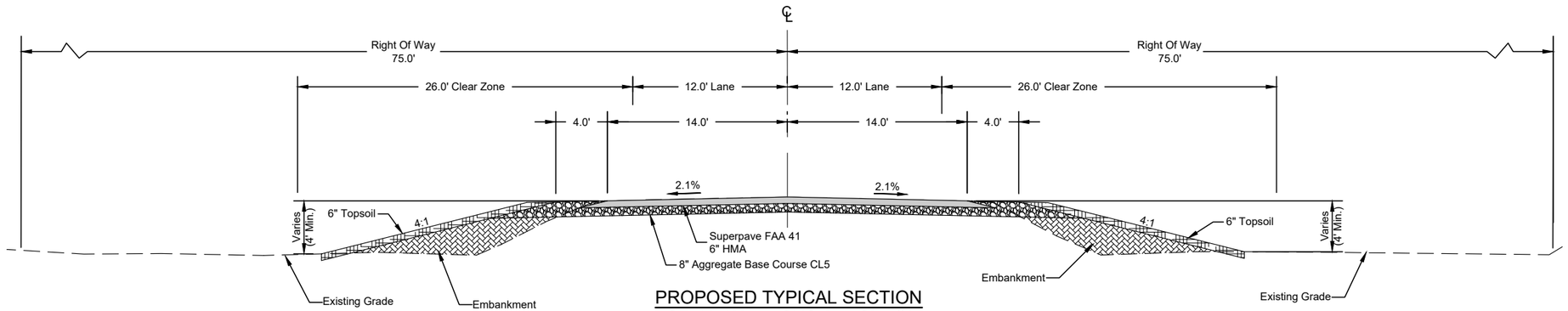
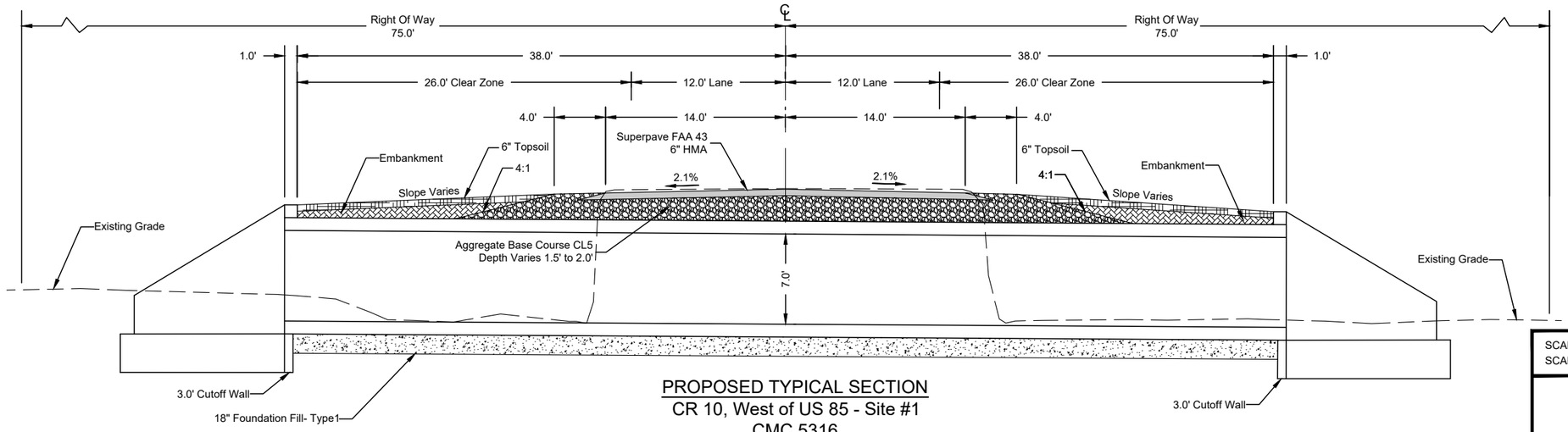
| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 30 | 1 |




EXISTING TYPICAL SECTION
CR 10, West of US 85 - Site #1
CMC 5316
STA. 100+00 to 122+00
(Excluding Existing Bridge)




PROPOSED TYPICAL SECTION
CR 10, West of US 85 - Site #1
CMC 5316
STA. 110+80 to 111+49*
STA. 112+08 to 112+80*




PROPOSED TYPICAL SECTION
CR 10, West of US 85 - Site #1
CMC 5316
STA. 111+49 to 112+08

*Note: Transition aggregate base course depth from Sta 111+29 to Sta 111+49 and from Sta 112+08 to 112+28.

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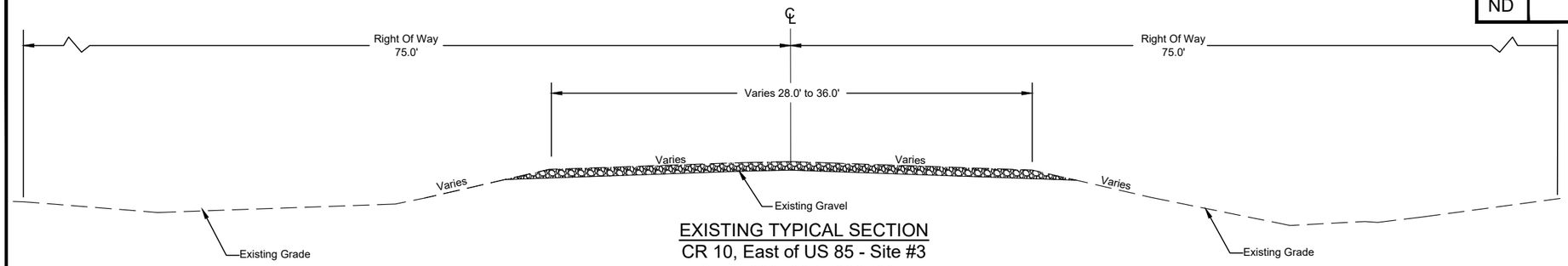
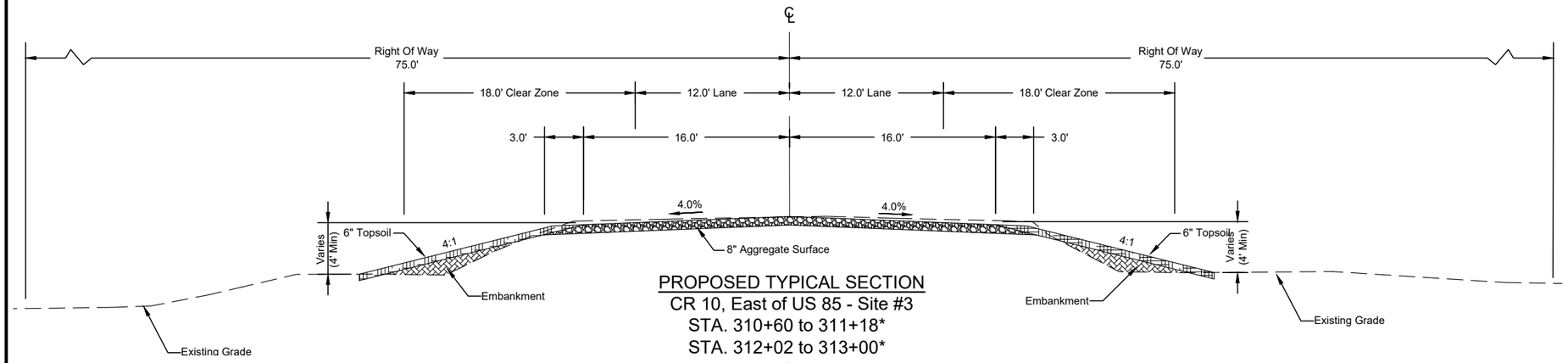
SCALE (H): NTS
SCALE (V): NTS
0 0 0 0 0

Williams County Multiple Bridge Replacement Project
Williams County, ND
Typical Sections
Site #1 - CR 10, West of US 85

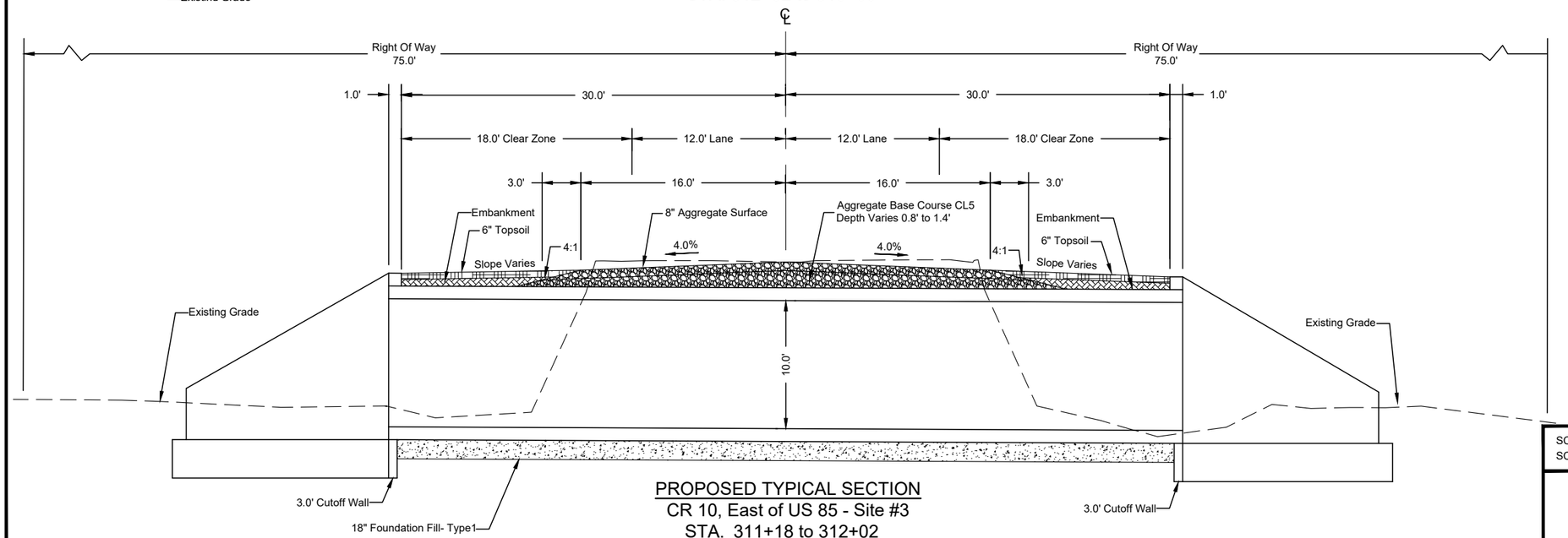
| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 30 | 3 |




EXISTING TYPICAL SECTION
CR 10, East of US 85 - Site #3
STA. 300+00 to 322+00
(Excluding Existing Bridge)




PROPOSED TYPICAL SECTION
CR 10, East of US 85 - Site #3
STA. 310+60 to 311+18*
STA. 312+02 to 313+00*




PROPOSED TYPICAL SECTION
CR 10, East of US 85 - Site #3
STA. 311+18 to 312+02

*Note: Transition aggregate base course depth from Sta 310+99 to Sta 311+19 and from Sta 312+02 to Sta 312+22.

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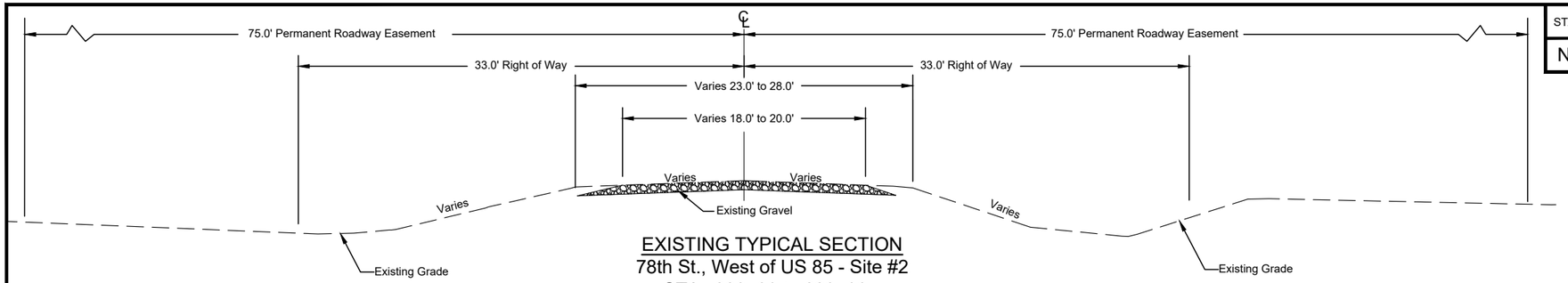
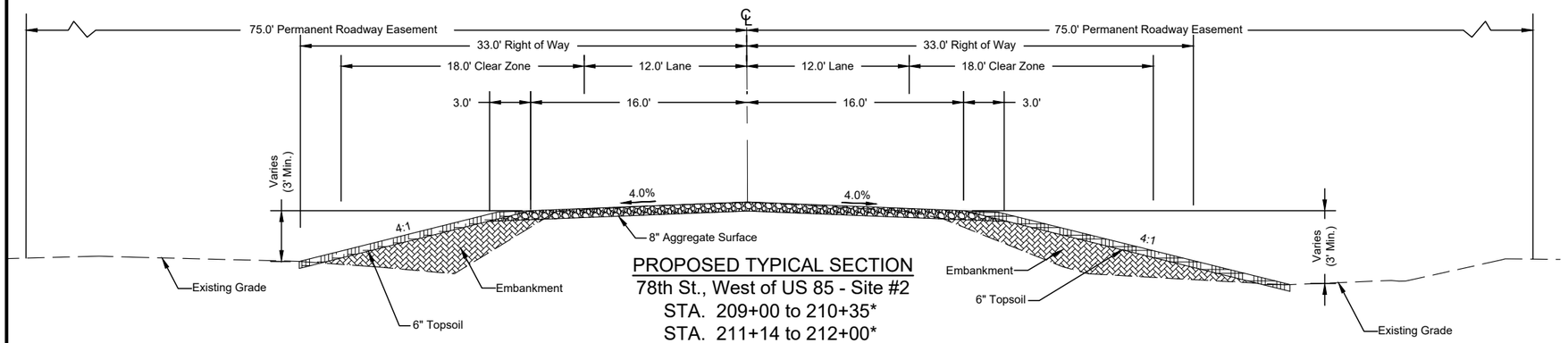
SCALE (V): NTS
0 0 0 0 0

Williams County Multiple Bridge Replacement Project
Williams County, ND
Typical Sections
Site #3 - CR 10, East of US 85

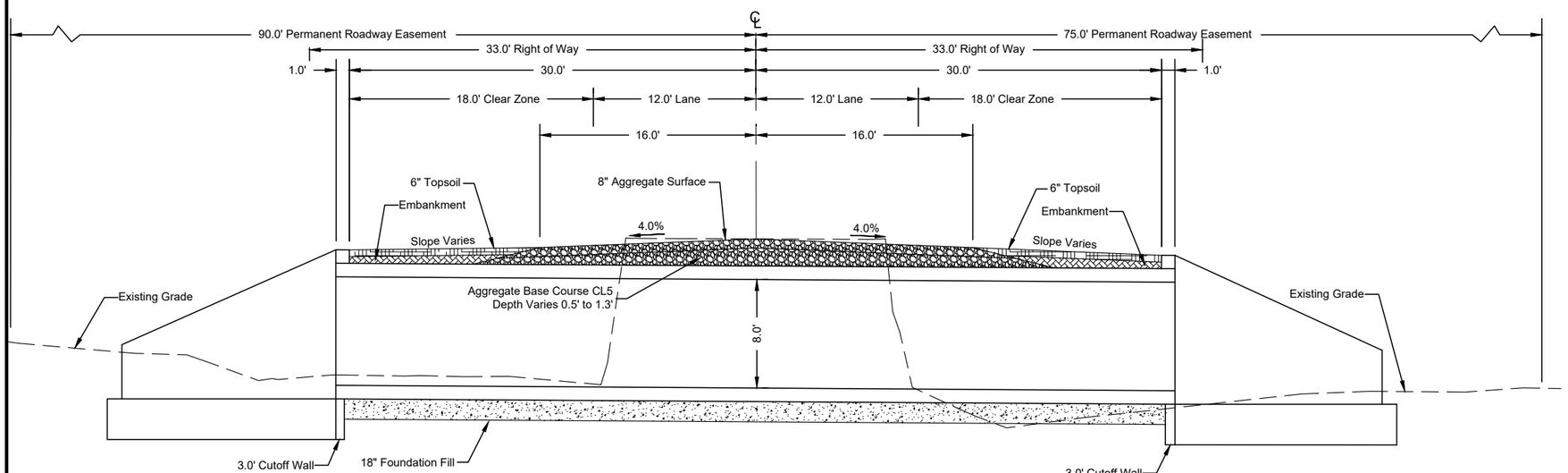
| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 30 | 2 |




EXISTING TYPICAL SECTION
78th St., West of US 85 - Site #2
STA. 200+00 to 220+00
(Excluding Existing Bridge)




PROPOSED TYPICAL SECTION
78th St., West of US 85 - Site #2
STA. 209+00 to 210+35*
STA. 211+14 to 212+00*




PROPOSED TYPICAL SECTION
78th St., West of US 85 - Site #2
STA. 210+35 to 211+14

*Note: Transition aggregate base course depth from Sta 210+15 to Sta 210+35 and from Sta 211+14 to 211+34.

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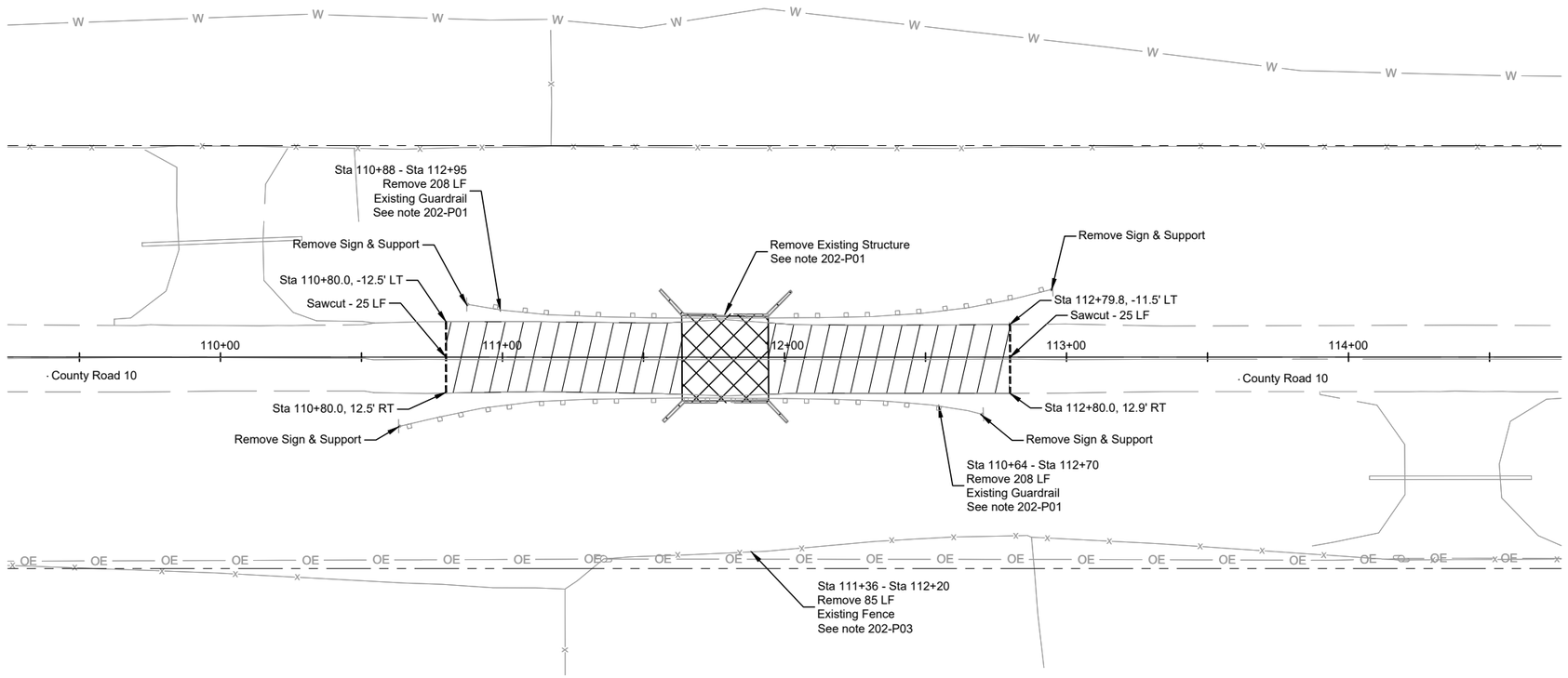
SCALE (H): NTS
SCALE (V): NTS

0 0 0 0 0

Williams County Multiple Bridge Replacement Project
Williams County, ND
Typical Sections
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 40 | 1 |




N

## LEGEND

- Asphalt Removal
- Structure Removal
- Existing Right of Way
- Saw Cut - Full Depth

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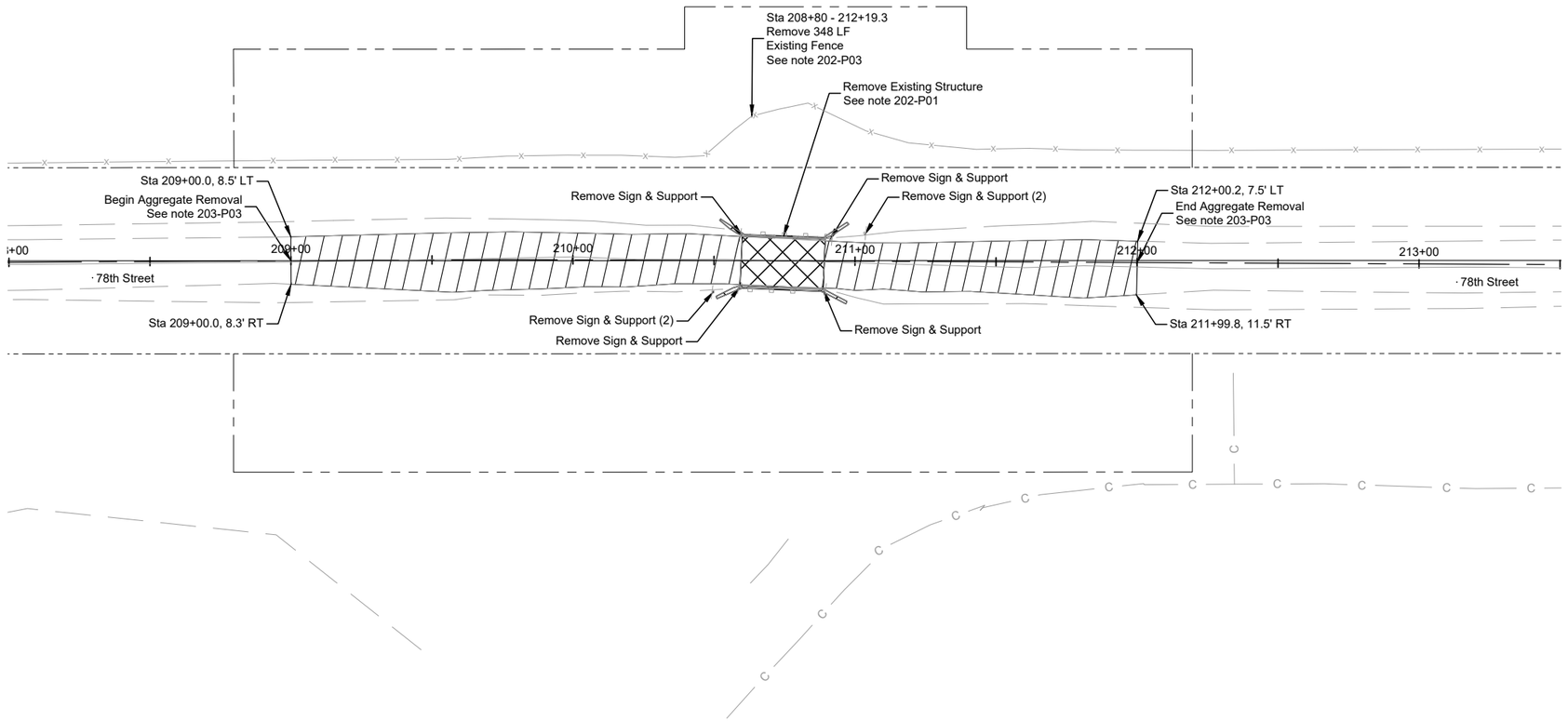
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Removals
Site #1- CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 40 | 2 |





Note: Remove "Narrow Bridge" Sign and Support (2) outside of project limits at Sta 204+69 and Sta 216+69.

## LEGEND

- Gravel Removal
- Structure Removal
- Existing Right of Way
- Permanent Roadway Easement

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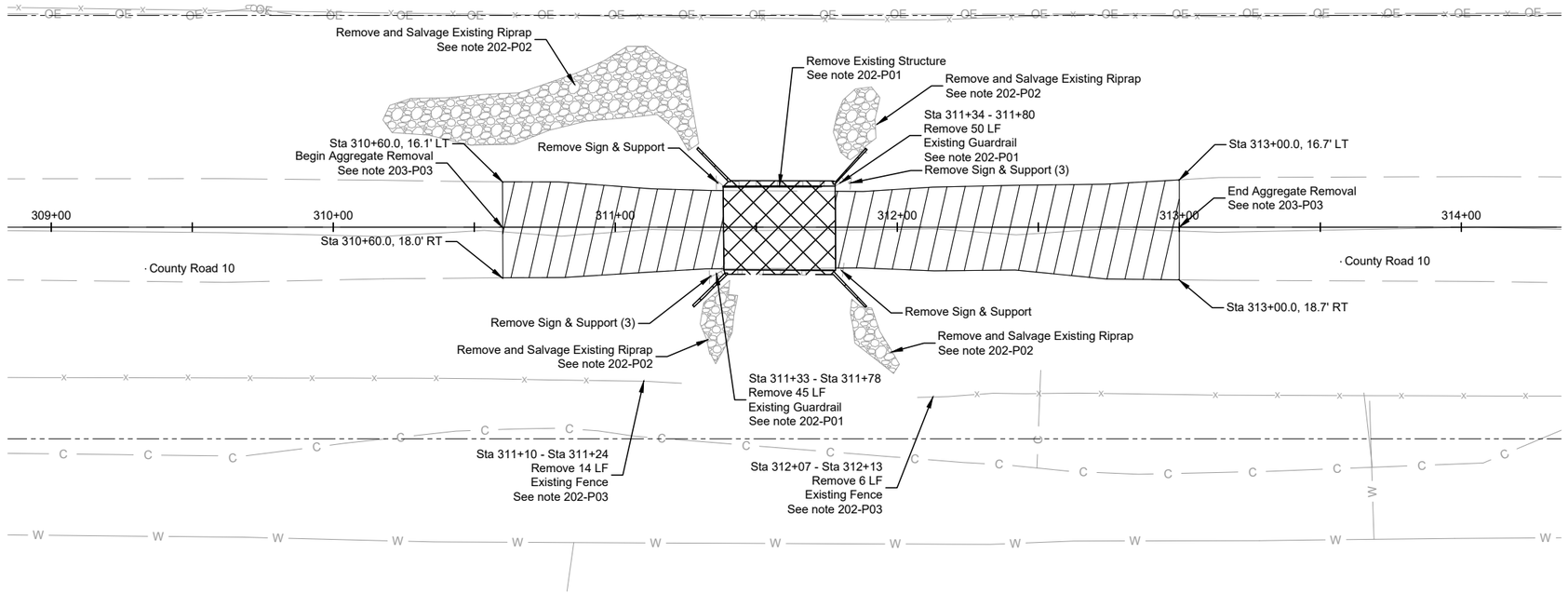
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Removals
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 40 | 3 |




N

## LEGEND

- Gravel Removal
- Structure Removal
- Existing Right of Way

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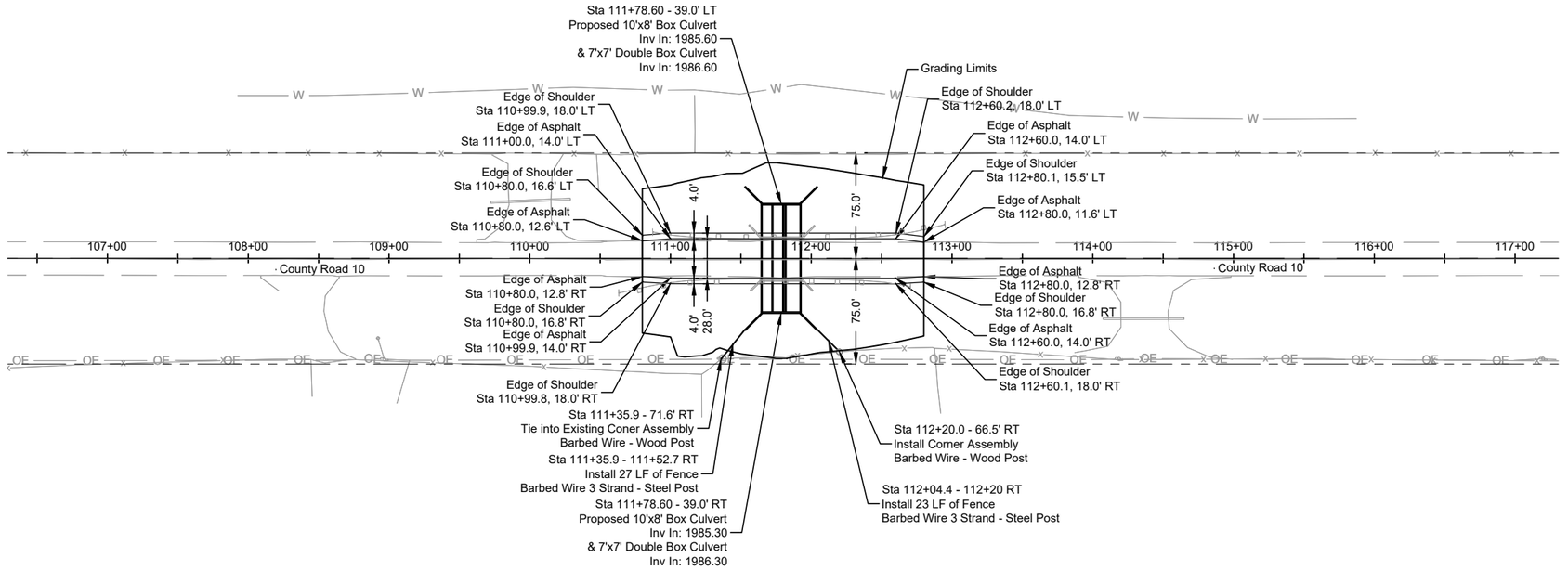
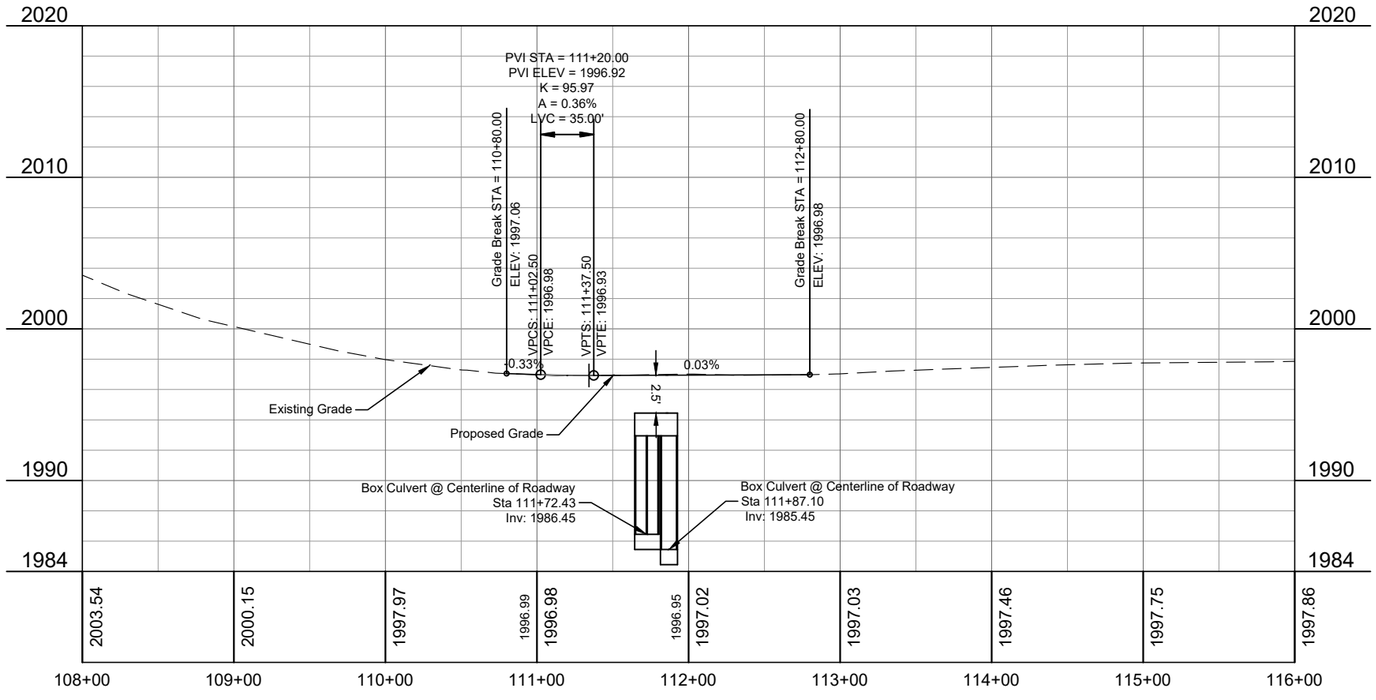
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Removals
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 60 | 1 |




N

## LEGEND

Existing Right of Way

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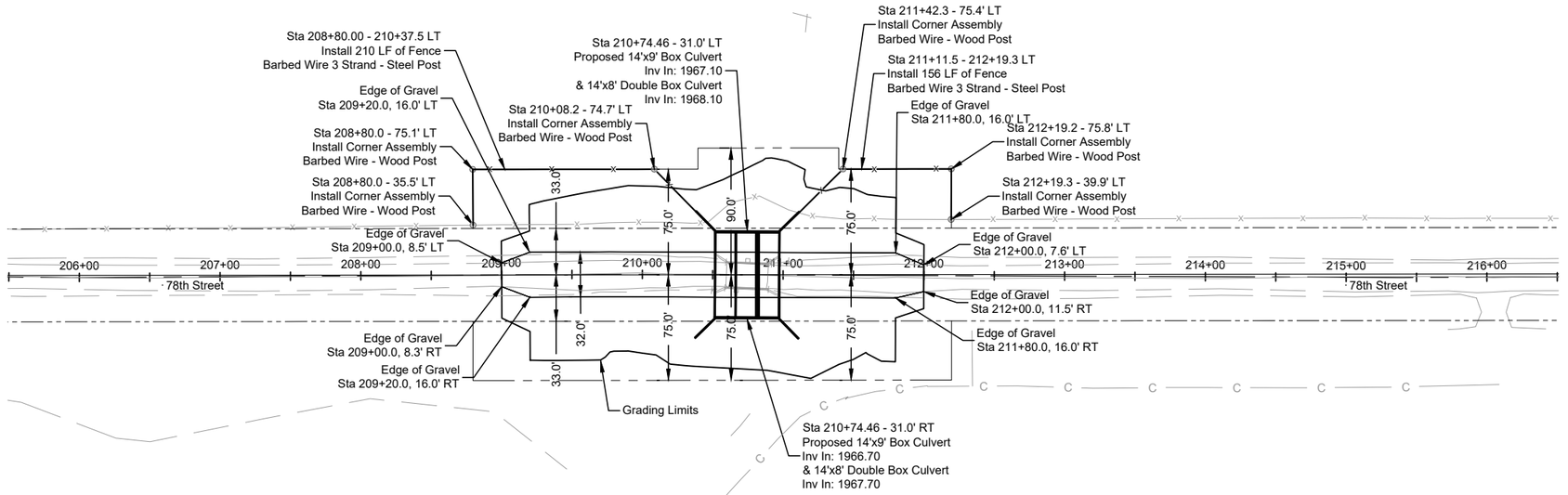
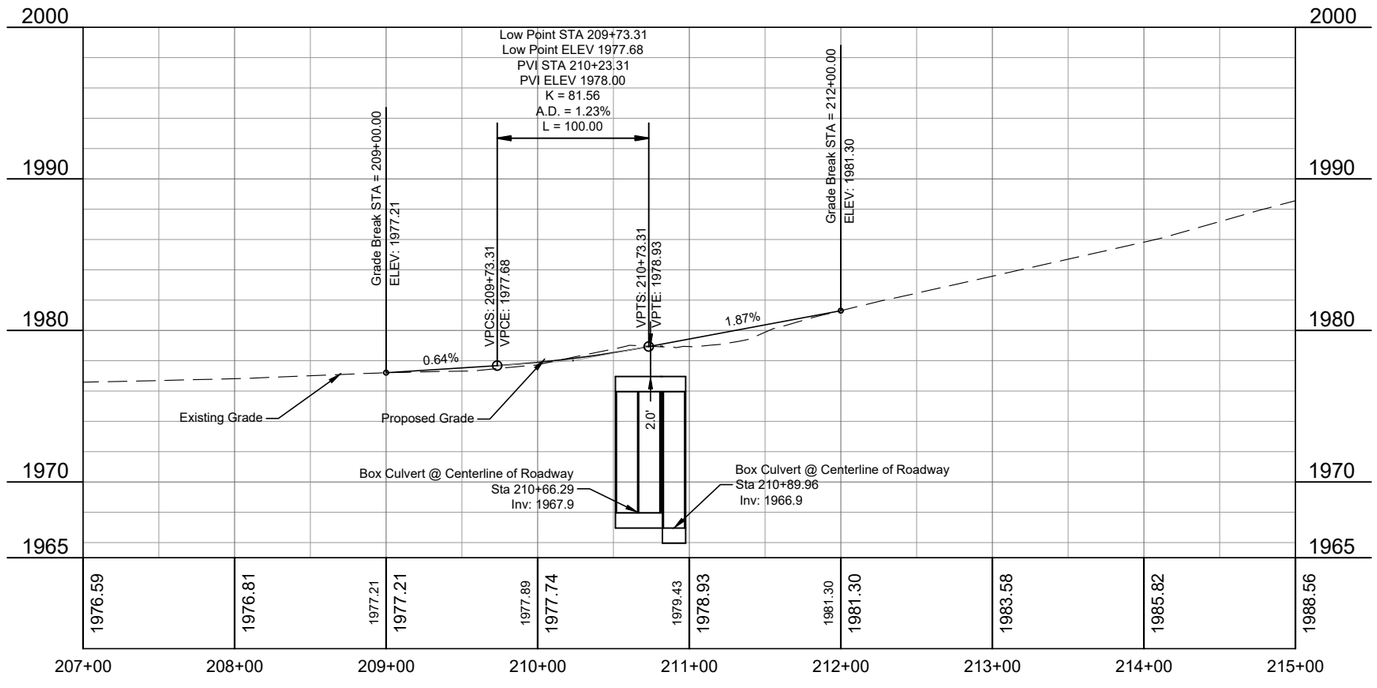
SCALE (H): 1"=100'
SCALE (V): 1"=20'

50 25 0 50 100

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Plan & Profile
Site #1 - CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 60 | 2 |





## LEGEND

Existing Right of Way

Permanent Roadway Easement

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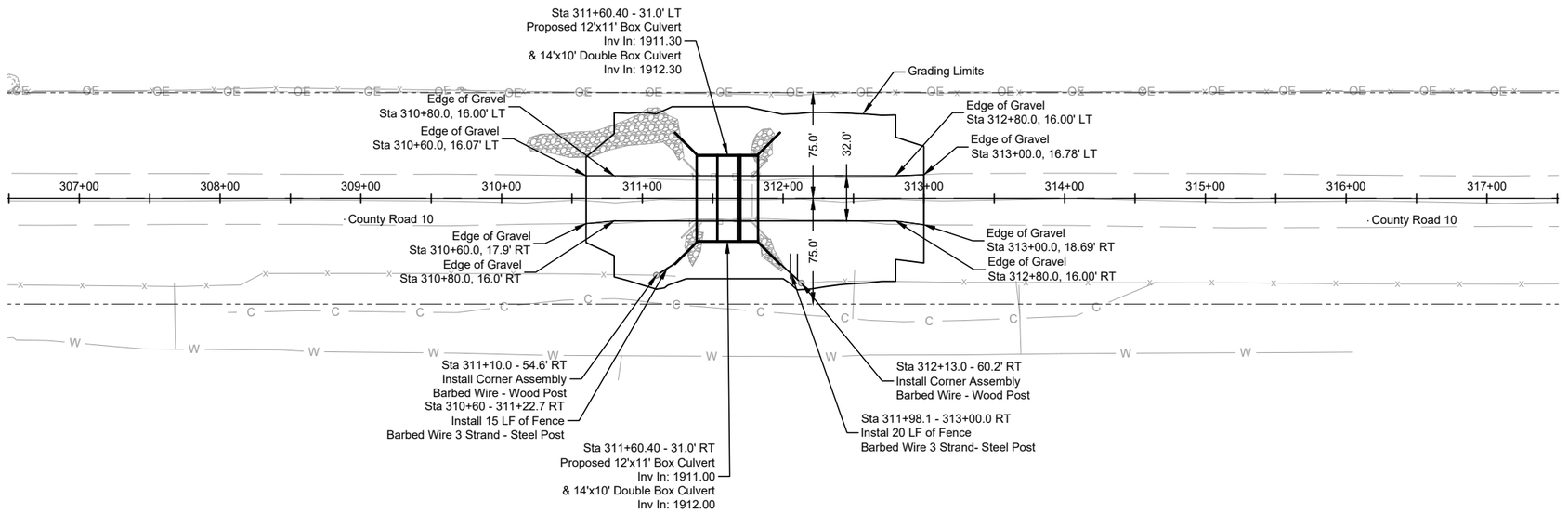
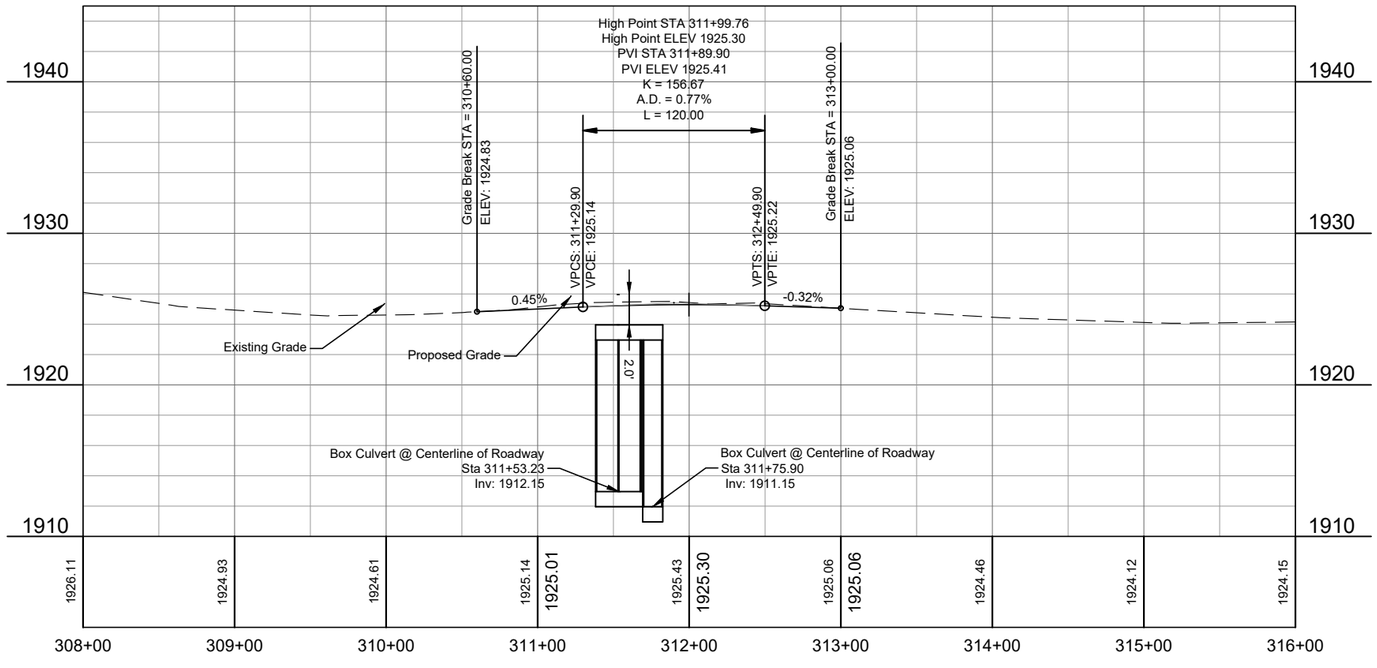
SCALE (H): 1"=100'
SCALE (V): 1"=20'

50 25 0 50 100

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Plan & Profile
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 60 | 3 |




N

## LEGEND

Existing Right of Way

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SCALE (H): 1"=100'
SCALE (V): 1"=20'

50 25 0 50 100

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Plan & Profile
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 75 | 1 |

**Bridge #53-117-15.0 (Proposed #53-117-15.1) - Site #1**

## Wetland Impact Table

| Wetland Number | Location | Wetland Type | Wetland Feature | USACE Jurisdictional Wetlands[1] | Wetland Impacts Acre(s) | | | USFWS Easement Impacts Acre(s) | | Wetland Mitigation | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Mitigation Required | | | Onsite | | | |
| | | | | | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | Temp. | Perm. | EO 11990 | USACE | USFWS | Mitigation Location; Ratio | Acre(s) | Constructed Site # | Constructed Size Acre(s) |
| | | | | | | | | | | | | | | | | |
| | | | | Totals | | | | | | | | | | | | |

## Other Waters Impact Table

| Other Waters | | | | | | | Impacts to Other Waters | | | | | | Other Water Mitigation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Size | | | | Acres | | | Linear Feet | | | Mitigation Required | | | | |
| Number | Location | Type | Acre(s) | Linear Feet | Feature | USACE Jurisdictional[1] | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | EO 11990 | USACE | USFWS | Mitigation Location; ratio | Method |
| OW1 | Sec. 14 & 23, T157N, R101W | Stream | 0.17 | 240 | Natural | Yes | 0.01 | 0.00 | 0.11 | 20.00 | 0.00 | 139.00 | Y | Y | N | On site; 1:1 | Box Culvert and Riprap lowered 1' |

[1] A wetland Jurisdictional Determination was issued by the USACE on June 11, 2020; NWO-2020-01096-BIS

[2] 1199 Mitigation requirements - All impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts greater than 0.10 acre to wetlands require mitigation.
USACE Mitigation Requirements – All jurisdictional impacts greater than 0.10 acre to each resource (cumulative. eg 1a ,1b,1c..etc.) requires mitigation. Other Water impact greater than 300 linear feet requires mitigation.

[3] All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.

### Impact Summary Table

| Permanent Impact Summary | | Temporary Impacts and additional information | |
|---|---|---|---|
| Wetland Type | Total (Acres) | Wetland Type | Total (Acres/Lf) |
| Natural/JD (Fill/Drain) | NA | Temporary JD | NA |
| Natural/Non-JD (Fill/Drain) | NA | Non-JD Temporary | NA |
| Artificial/JD (Fill/Drain) | NA | Permanent JD > 0.10 | NA |
| Artificial /Non-JD (Fill/Drain)) | NA | Permanent OW | 0.11 |
| Total | NA | Temporary OW | 0.01 |
| JD Natural (Cut) | 0.00 | | |
| JD Artificial (Cut) | NA | | |
| Non-JD Natural (Cut) | NA | | |
| Non-JD Artificial (Cut) | NA | | |
| Total | 0.00 | | |

### Mitigation Summary Table

| | Location | Onsite Acre(s) | 11990 Bank Acre(s) | USACE/11990 Bank Acre(s) | USFWS Bank Acre(s) |
|---|---|---|---|---|---|
| USACE Only | NA | NA | | NA | |
| EO 11990 Only | NA | NA | | | |
| USACE/11990 | Onsite | 0.11 | | NA | |
| USFWS | | | | | NA |
| | Total | 0.11 | 0 | 0 | 0 |

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Williams County Multiple Bridge Replacement Project
Williams County, ND
Wetlands Mitigation and Environmental
Site #1 - CR 10, West of US 85

**Bridge #53-120-06.0 (Proposed #53-120-06.1)- Site #2**

## Wetland Impact Table

| Wetland Number | Location | Wetland Type | Wetland Feature | USACE Jurisdictional Wetlands[1] | Wetland Impacts Acre(s) | | | USFWS Easement Impacts Acre(s) | | Wetland Mitigation | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Mitigation Required | | | Onsite | | | |
| | | | | | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | Temp. | Perm. | EO 11990 | USACE | USFWS | Mitigation Location; Ratio | Acre(s) | Constructed Site # | Constructed Size Acre(s) |
| 1 | Sec. 32, T159N, R100W | Adjacent | Natural | Yes | 0.00 | 0.00 | 0.01 | 0 | 0 | N | N | N | On site | 0.01 | Site #2 | 0.01 |
| 2A | Sec. 32, T159N, R100W | Basin | Natural | Yes | 0.00 | 0.00 | 0.00 | 0 | 0 | N | N | N | On site | 0.00 | Site #2 | 0.00 |
| 2B | Sec. 6, T146N, R95W | Basin | Natural | Yes | 0.00 | 0.00 | 0.00 | 0 | 0 | N | N | N | On site | 0.00 | Site #2 | 0.00 |
| 3 | Sec. 5, T158N, R100W | Basin | Natural | Yes | 0.00 | 0.00 | 0.02 | 0 | 0 | N | N | N | On site | 0.02 | Site #2 | 0.02 |
| | | | | Totals | **0.00** | **0.00** | **0.03** | **0** | **0** | | | | | **0.03** | | **0.03** |

## Other Waters Impact Table

| Other Waters | | | | | | | Impacts to Other Waters | | | | | | Other Water Mitigation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Size | | | | Acres | | | Linear Feet | | | Mitigation Required | | | | |
| Number | Location | Type | Acre(s) | Linear Feet | Feature | USACE Jurisdictional[1] | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | EO 11990 | USACE | USFWS | Mitigation Location; ratio | Method |
| OW1 | Sec.32, T159N, R100W | Stream | 1.18 | 1350 | Natural | Yes | 0.02 | 0.00 | 0.17 | 20.00 | 0.00 | 155.00 | Y | Y | N | On site; 1:1 | Box Culvert and Riprap lowered 1' |
| | | | | | | Totals | 0.02 | 0.00 | 0.17 | 20.00 | 0.00 | 155.00 | | | | | |

[1] A wetland Jurisdictional Determination was issued by the USACE on June 26, 2020; NWO-2020-01097-BIS

[2] 1199 Mitigation requirements - All impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts greater than 0.10 acre to wetlands require mitigation. USACE Mitigation Requirements – All jurisdictional impacts greater than 0.10 acre to each resource (cumulative. eg 1a ,1b,1c..etc.) requires mitigation. Other Water impact greater than 300 linear feet requires mitigation.

[3] All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.



Williams County Multiple
Bridge Replacement Project
Williams County, ND
Wetlands Mitigation and Environmental
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 75 | 3 |

**Impact Summary Table**

| Permanent Impact Summary | | Temporary Impacts and additional information | |
|---|---|---|---|
| **Wetland Type** | **Total (Acres)** | **Wetland Type** | **Total (Acres/Lf)** |
| **Natural/JD (Fill/Drain)** | 0.00 | **Temporary JD** | 0.00 |
| **Natural/Non-JD (Fill/Drain)** | NA | **Non-JD Temporary** | NA |
| **Artificial/JD (Fill/Drain)** | NA | **Permanent JD > 0.10** | NA |
| **Artificial /Non-JD (Fill/Drain))** | NA | **Permanent OW** | 0.17 |
| **Total** | **0.00** | **Temporary OW** | 0.02 |
| **JD Natural (Cut)** | 0.03 | | |
| **JD Artificial (Cut)** | NA | | |
| **Non-JD Natural (Cut)** | NA | | |
| **Non-JD Artificial (Cut)** | NA | | |
| **Total** | **0.03** | | |

**Mitigation Summary Table**

| | Location | Onsite Acre(s) | 11990 Bank Acre(s) | USACE/11990 Bank Acre(s) | USFWS Bank Acre(s) |
|---|---|---|---|---|---|
| **USACE Only** | NA | NA | | NA | |
| **EO 11990 Only** | NA | NA | | | |
| **USACE/11990** | Onsite | 0.17 | | NA | |
| **USFWS** | | | | | NA |
| | **Total** | **0.17** | **0** | **0** | **0** |

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Williams County, ND
Wetlands Mitigation and Environmental
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 75 | 4 |

**Bridge #53-122-15.0 (Proposed #53-122-15.1) - Site #3**

## Wetland Impact Table

| Wetland Number | Location | Wetland Type | Wetland Feature | USACE Jurisdictional Wetlands[1] | Wetland Impacts Acre(s) | | | USFWS Easement Impacts Acre(s) | | Wetland Mitigation | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Mitigation Required | | | Onsite | | | |
| | | | | | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | Temp. | Perm. | EO 11990 | USACE | USFWS | Mitigation Location; Ratio | Acre(s) | Constructed Site # | Constructed Size Acre(s) |
| 1 | Sec 15, T157N, R100W | Adjacent | Natural | Yes | 0.01 | 0.00 | 0.00 | 0 | 0 | N | N | N | On site | 0.01 | Site #3 | 0.01 |
| 2A | Sec 15, T157N, R100W | Basin | Natural | Yes | 0.00 | 0.00 | 0.00 | 0 | 0 | N | N | N | On site | 0.00 | Site #3 | 0.00 |
| 2B | Sec 22, T157N, R100W | Basin | Natural | Yes | 0.00 | 0.00 | 0.00 | 0 | 0 | N | N | N | On site | 0.00 | Site #3 | 0.00 |
| | | | | Totals | **0.01** | 0.00 | **0.00** | **0** | **0** | | | | | **0.01** | | **0.01** |

## Other Waters Impact Table

| Other Waters | | | | | | | | | | | | | | Other Water Mitigation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Size | | | | Impacts to Other Waters | | | | | | | Mitigation Required | | | | |
| | | | | | | | Acres | | | Linear Feet | | | | | | | | |
| Number | Location | Type | Acre(s) | Linear Feet | Feature | USACE Jurisdictional[1] | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | Temp. | Perm. (Fill/Drain) | Perm. (Cut) | | EO 11990 | USACE | USFWS | Mitigation Location; ratio | Method |
| OW1 | Sec.30, T146N, R95W | River | 0.40 | 260 | Natural | Yes | 0.06 | 0.00 | 0.16 | 20.00 | 0.00 | 122.00 | | Y | Y | N | On site; 1:1 | Box Culvert and Riprap lowered 1' |
| | | | | | | Totals | 0.06 | 0.00 | 0.16 | 20.00 | 0.00 | 122.00 | | | | | | |

[1] A wetland Jurisdictional Determination was issued by the USACE on 7/22/2020; NWO-2020-01098-BIS

[2] 1199 Mitigation requirements - All impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts greater than 0.10 acre to wetlands require mitigation.
USACE Mitigation Requirements – All jurisdictional impacts greater than 0.10 acre to each resource (cumulative. eg 1a ,1b,1c..etc.) requires mitigation. Other Water impact greater than 300 linear feet requires mitigation.

[3] All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.

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Williams County, ND
Wetlands Mitigation and Environmental
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 75 | 5 |

**Impact Summary Table**

| Permanent Impact Summary | | Temporary Impacts and additional information | |
|---|---|---|---|
| **Wetland Type** | **Total (Acres)** | **Wetland Type** | **Total (Acres/Lf)** |
| **Natural/JD (Fill/Drain)** | 0.00 | **Temporary JD** | 0.01 |
| **Natural/Non-JD (Fill/Drain)** | NA | **Non-JD Temporary** | NA |
| **Artificial/JD (Fill/Drain)** | NA | **Permanent JD > 0.10** | NA |
| **Artificial /Non-JD (Fill/Drain))** | NA | **Permanent OW** | 0.16 |
| **Total** | **0.00** | **Temporary OW** | 0.06 |
| **JD Natural (Cut)** | 0.00 | | |
| **JD Artificial (Cut)** | NA | | |
| **Non-JD Natural (Cut)** | NA | | |
| **Non-JD Artificial (Cut)** | NA | | |
| **Total** | **0.00** | | |

**Mitigation Summary Table**

| | Location | Onsite Acre(s) | 11990 Bank Acre(s) | USACE/11990 Bank Acre(s) | USFWS Bank Acre(s) |
|---|---|---|---|---|---|
| **USACE Only** | NA | NA | | NA | |
| **EO 11990 Only** | NA | NA | | | |
| **USACE/11990** | Onsite | 0.16 | | NA | |
| **USFWS** | | | | | NA |
| | **Total** | **0.16** | **0** | **0** | **0** |

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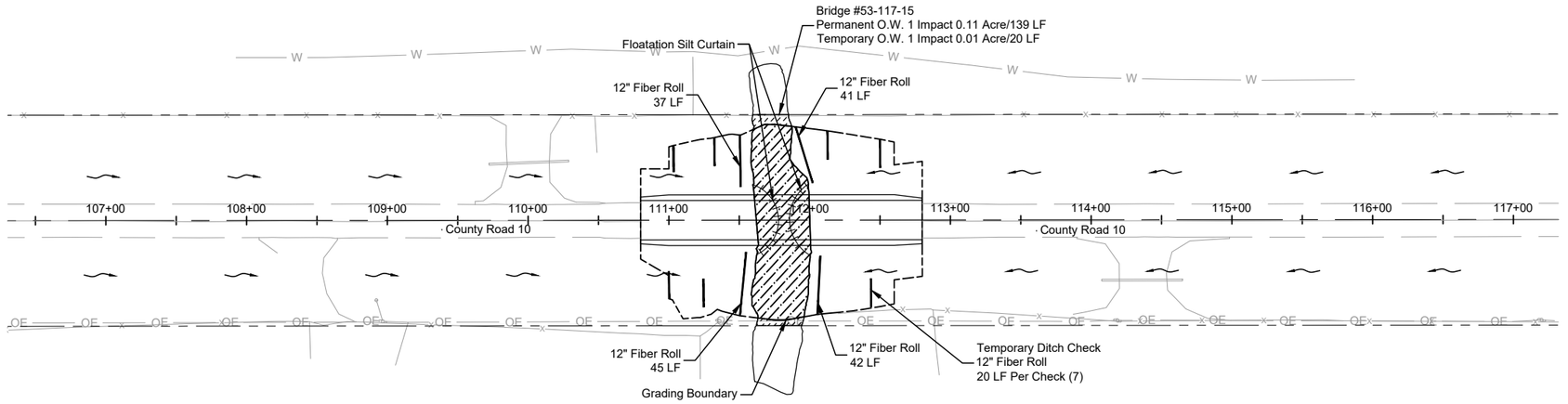
Bridge Replacement Project
Williams County, ND
Wetlands Mitigation and Environmental
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 76 | 1 |

## Temporary Erosion Control

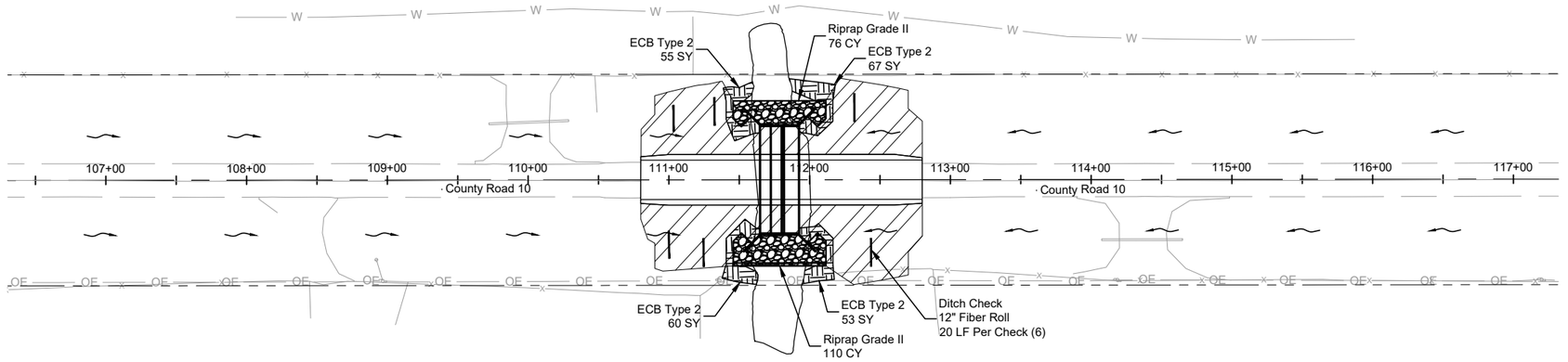




### LEGEND

- Grading Boundary
- Flow Direction
- Fiber Roll 12IN
- Flotation Silt Curtain
- Permanent Wetland Impacts
- Temporary Wetland Impacts
- Seeding Area
- Riprap Grade II
- ECB Type 2 & Seeding Area
- Existing Right of Way

## Permanent Erosion Control





**Notes:**

1. Flotation silt curtain to be used during removal of existing structure abutments.

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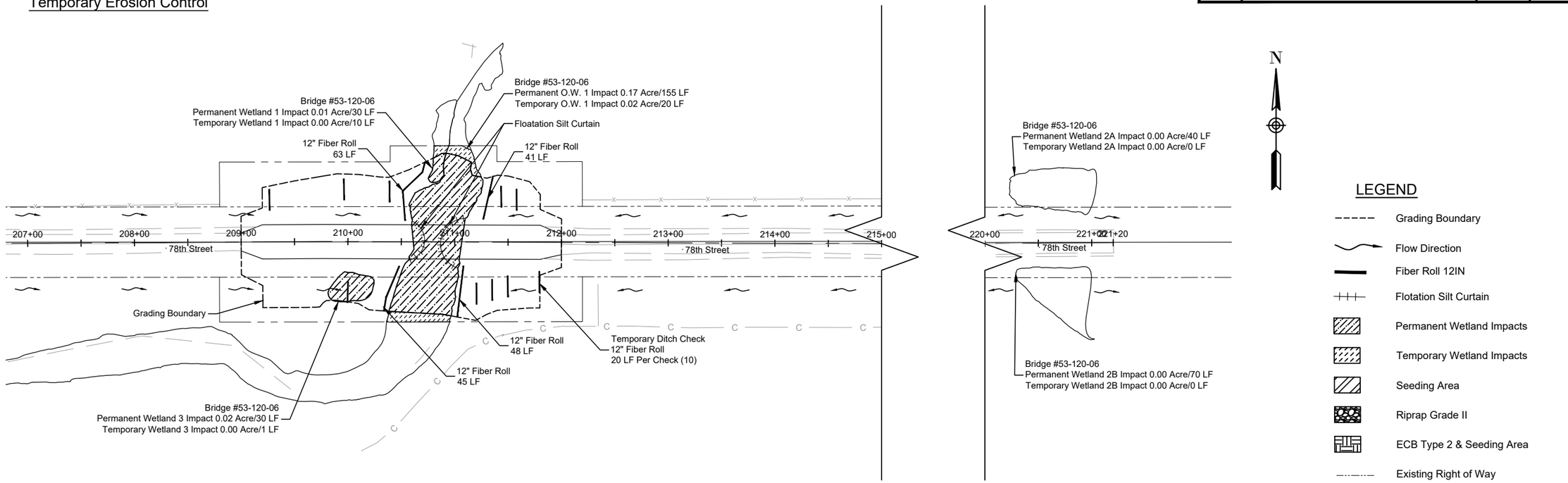
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

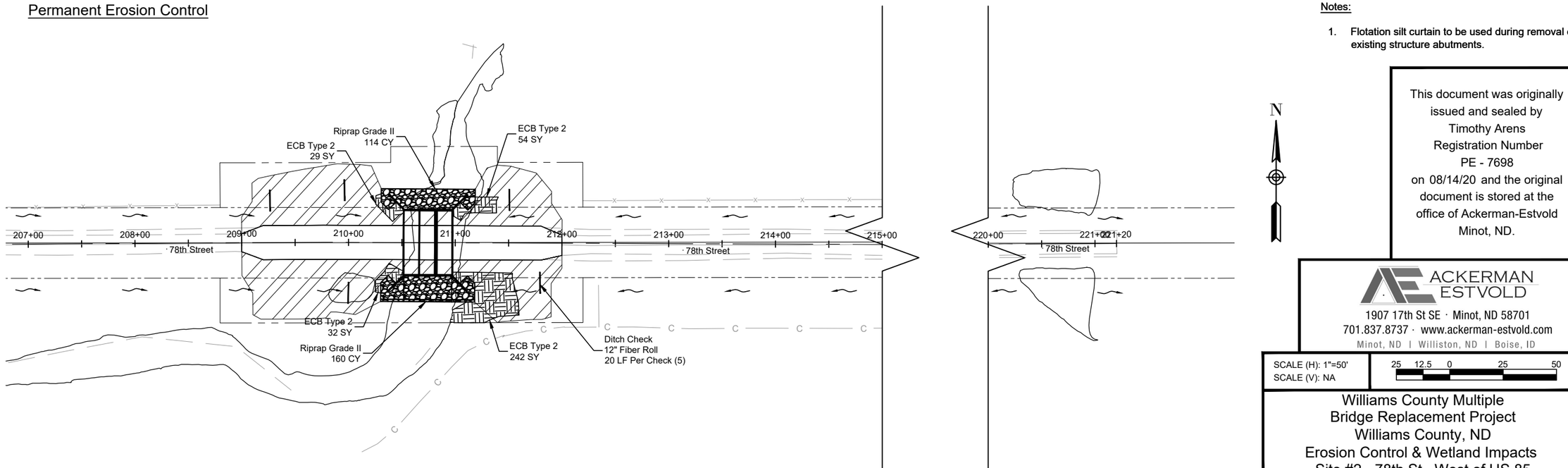
Williams County Multiple Bridge Replacement Project
Williams County, ND
Erosion Control & Wetland Impacts
Site #1 - CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 76 | 2 |

## Temporary Erosion Control




## Permanent Erosion Control




## LEGEND

- Grading Boundary
- Flow Direction
- Fiber Roll 12IN
- Flotation Silt Curtain
- Permanent Wetland Impacts
- Temporary Wetland Impacts
- Seeding Area
- Riprap Grade II
- ECB Type 2 & Seeding Area
- Existing Right of Way
- Permanent Roadway Easement

**Notes:**

1. Flotation silt curtain to be used during removal of existing structure abutments.

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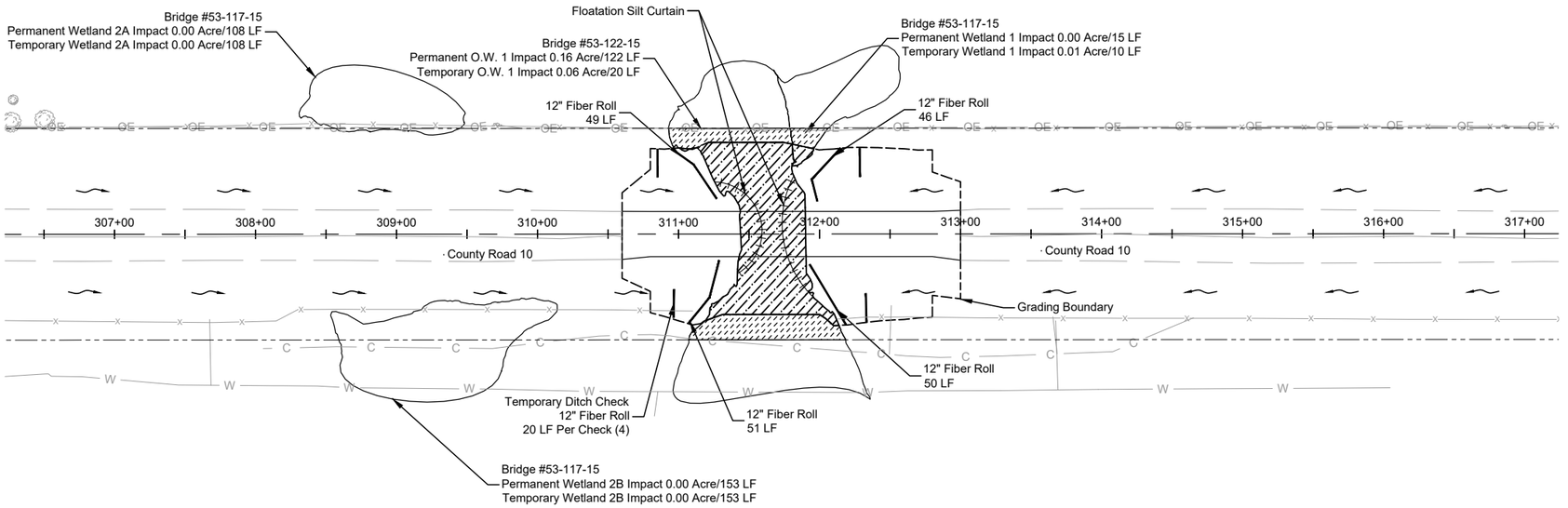
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Erosion Control & Wetland Impacts
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 76 | 3 |

## Temporary Erosion Control

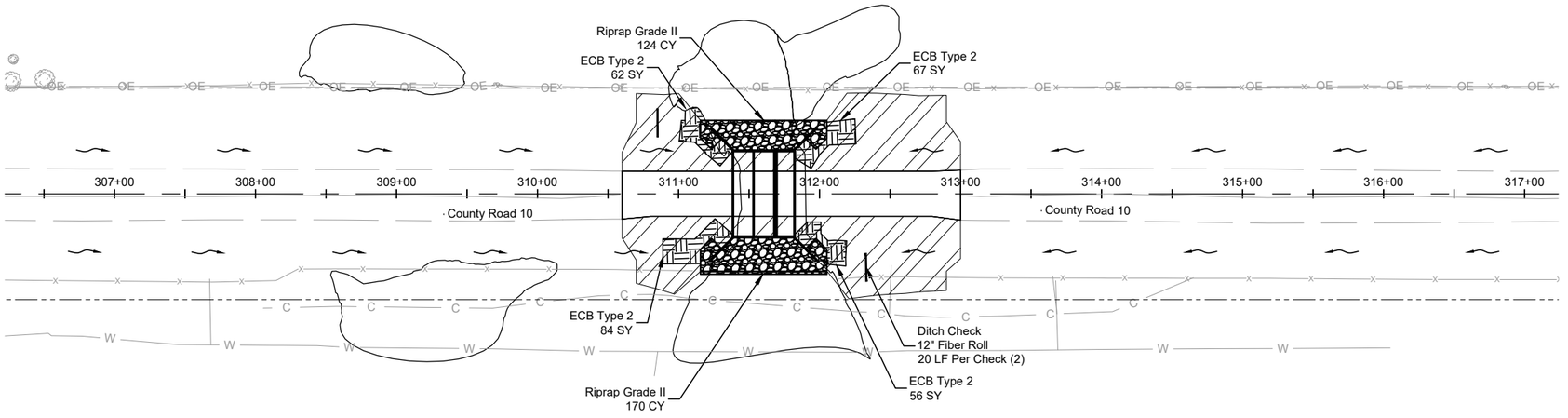




### LEGEND

- Grading Boundary
- Flow Direction
- Fiber Roll 12IN
- Flotation Silt Curtain
- Permanent Wetland Impacts
- Temporary Wetland Impacts
- Seeding Area
- Riprap Grade II
- ECB Type 2 & Seeding Area
- Existing Right of Way

## Permanent Erosion Control





**Notes:**

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SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Erosion Control & Wetland Impacts
Site #3 - CR 10, East of US 85

# PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WILLIAMS COUNTY ROAD 10 & 78th St NW

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 81 | 1 |

## HORIZONTAL ALIGNMENT

| PNT | STATION | NORTHING | EASTING |
|---|---|---|---|
| Williams County Site #1 Design | | | |
| BOP | 100+00.00 | 532945.96 | 1190583.25 |
| PI | 111+22.15 | 532900.28 | 1191704.47 |
| EOP | 123+21.83 | 532851.44 | 1192903.15 |
| | | | |
| Williams County Site #2 Design | | | |
| BOP | 200+00.00 | 579842.39 | 1208999.98 |
| PI | 204+06.70 | 579780.25 | 1209401.89 |
| PI | 209+76.70 | 579760.76 | 1209972.08 |
| PI | 215+39.89 | 579735.68 | 1210534.72 |
| EOP | 221+20.16 | 579714.83 | 1211114.61 |
| | | | |
| Williams County Site #3 Design | | | |
| BOP | 100+00.00 | 532945.96 | 1190583.25 |
| PI | 111+22.15 | 532900.28 | 1191704.47 |
| EOP | 123+21.83 | 532851.44 | 1192903.15 |

## CURVE DATA

ARC DEFINITION

| | | |
|---|---|---|
| Williams County Site #2 Design | | |
| Curve 1 | | |
| PI STA= | 204+06.70 | |
| Delta = | 06° 49' 51" (LT) | |
| Do = | 01° 34' 11" | |
| R = | 3650.00' | |
| T = | 217.84' | |
| L = | 435.16' | |

## US PUBLIC LAND SURVEY DATA

| CORNER | IRN | NORTHING | EASTING |
|---|---|---|---|
| Sec 14 T-157-N R-101-W | | | |
| SW Sec Cor | 9-G | 533007.83 | 1189064.98 |
| SQ Sec Cor | 10-G | 532900.28 | 1191704.47 |
| SE Sec Cor | 11-G | 532792.74 | 1194343.92 |
| | | | |
| Sec 32 T-159-N R-100-W | | | |
| SW Sec Cor | 6-G | 1206841.97 | 579884.37 |
| SQ Sec Cor | 7-G | 1209487.35 | 579779.50 |
| SE Sec Cor | 8-G | 1212072.67 | 579677.39 |
| | | | |
| Sec 16 T-157-N R-100-W | | | |
| SQ Sec Cor | 3-N | 1212784.00 | 532017.85 |
| SE Sec Cor | 4-N | 1215422.71 | 531903.19 |
| | | | |
| Sec 15 T-157-N R-100-W | | | |
| SQ Sec Cor | 5-N | 1218062.63 | 531798.09 |

## SURVEY CONTROL POINTS

| PNT | NORTHING | EASTING | ELEV | STATION | OFFSET | CONTROL POINT DESCRIPTION |
|---|---|---|---|---|---|---|
| PRIMARY CONTROL | | | | | | |
| 100 | 532540.10 | 1198316.69 | 2094.38 | NA | NA | |
| 101 | 532915.30 | 1190420.63 | 2051.11 | NA | NA | |
| 102 | 532939.73 | 1192433.65 | 1995.38 | NA | NA | |
| 103 | 531872.39 | 1215083.72 | 1955.73 | NA | NA | |
| 104 | 531752.59 | 1217755.72 | 1930.27 | NA | NA | |
| 105 | 579921.81 | 1206974.17 | 1993.27 | NA | NA | |
| 106 | 579743.77 | 1211478.48 | 1987.54 | NA | NA | |

NOTES:

Date Survey Completed: 05/23/19

☐ Assumed Coordinates

☒ All coordinates on this sheet are Williams County Ground Coordinates. They are derived from the "North Dakota Coordinate System of 1983", NAD83(Conus), North Zone. Combination Factor (cf) = 0.9998445

All coordinates and measurements on this document derived from the US Survey Foot Definition

INITALIZING BENCH MARK
Midstates VRS Network

☒ NAVD-88
☐ NGVD-29

☒ ENGLISH UNITS
☐ METRIC UNITS

This document was originally issued and sealed by
Jason Main
Registration Number
LS - 8134
on 08/14/20 and the original document is stored at the office of Ackerman-Estvold Minot, ND.

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 100 | 1 |

| SIGN NUMBER | SIGN SIZE | DESCRIPTION | AMOUNT REQUIRED | UNITS PER AMOUNT | UNITS SUB TOTAL |
|---|---|---|---|---|---|
| **D1-3-36** | **36"x12"** | **STREET NAME** | **20** | **10** | **200** |
| 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 | | 26 | |
| G20-4-36 | 36"x18" | PILOT CAR FOLLOW ME (Mounted to back of pilot car) | | 18 | |
| G20-10-108 | 108"x48" | CONTRACTOR SIGN | | 70 | |
| 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) | | 10 | |
| 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 | |
| **M1-6-24** | **24"x24"** | **COUNTY ROUTE MARKER (Post and installation only)** | **66** | **10** | **660** |
| M3-1-24 | 24"x12" | NORTH (Mounted on route marker post) | | 7 | |
| **M3-2-24** | **24"x12"** | **EAST (Mounted on route marker post)** | **45** | **7** | **315** |
| M3-3-24 | 24"x12" | SOUTH (Mounted on route marker post) | | 7 | |
| **M3-4-24** | **24"x12"** | **WEST (Mounted on route marker post)** | **41** | **7** | **287** |
| **M4-8-24** | **24"x12"** | **DETOUR (Mounted on route marker post)** | **90** | **7** | **630** |
| 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)** | **28** | **9** | **252** |
| 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)** | **28** | **9** | **252** |
| **M6-3-21** | **21"x15"** | **DIRECTIONAL ARROW UP (Mounted on route marker post)** | **11** | **7** | **77** |
| 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 __ | | 39 | |
| 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)** | **9** | **12** | **108** |
| 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)** | **3** | **15** | **45** |
| 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 | |
| **SS-1** | **30"X24"** | **BLACKTAIL LAKE** | **9** | **15** | **135** |
| 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 | | 26 | |
| 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 | | 35 | |
| 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 | |
| W12-2-48 | 48"x48" | LOW CLEARANCE | | 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 | | 35 | |
| **W20-2-48** | **48"x48"** | **DETOUR AHEAD or __ FT or _ MILE** | **14** | **35** | **490** |
| **W20-3-48** | **48"x48"** | **ROAD or STREET CLOSED AHEAD or __ FT or _ MILE** | **8** | **35** | **280** |
| 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 | |

| SIGN NUMBER | SIGN SIZE | DESCRIPTION | AMOUNT REQUIRED | UNITS PER AMOUNT | UNITS SUB TOTAL |
|---|---|---|---|---|---|
| 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 | |
| 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 | |

**SPECIAL SIGNS**

**SPEC & CODE**

| | | | |
|---|---|---|---|
| **704-1000** | **TRAFFIC CONTROL SIGNS** | **TOTAL UNITS** | **3731** |

| 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** | **12** |
| 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 | |
| 704-1185 | PILOT CAR | HR | |
| 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 | |

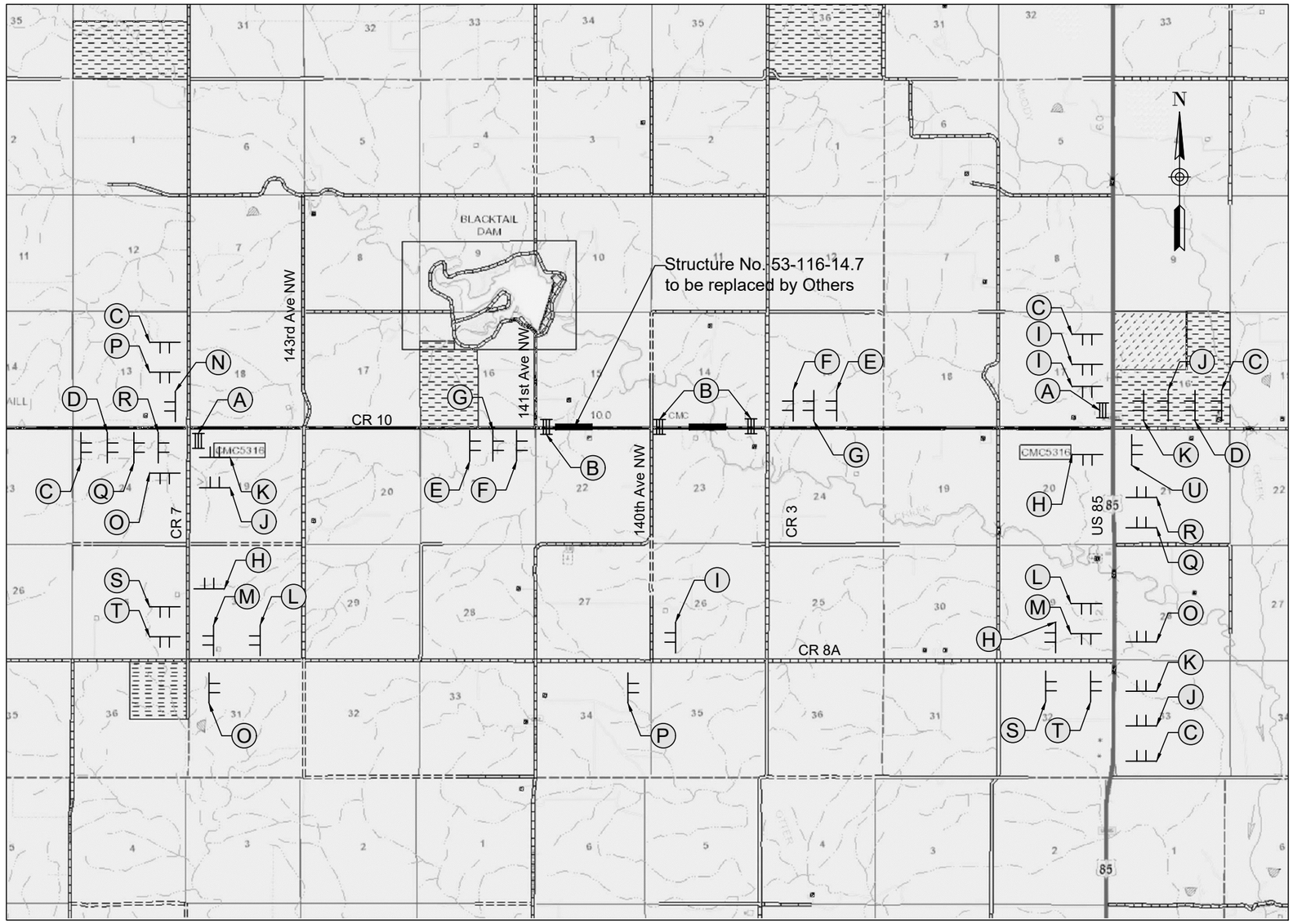
NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
http://www.dot.nd.gov/

This document was originally issued and sealed by Timothy Arens, Registration Number PE-7698, on 8/14/20 and the original document is stored at the office of Ackerman-Estvold Minot, ND.

Traffic Control Devices List
Williams County Multiple Bridge
Replacement Project
Williams County, North Dakota

VERSION: 7.18.2019

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 100 | 2 |




R11-3a-60

A — ROAD CLOSED 3 MILES AHEAD LOCAL TRAFFIC ONLY — TYPE III BARRICADE

R11-2-48

B — ROAD CLOSED — (3) TYPE III BARRICADE

C — DETOUR AHEAD W20-2-48

D — DETOUR 1500 FT W20-2-48

E — ROAD CLOSED AHEAD W20-3-48

F — ROAD CLOSED 500 FT W20-3-48

G — ROAD CLOSED 1000 FT W20-3-48

H — DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24

I — DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M6-3-21

J — DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M5-1L-21

K — DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M6-1L-21

L — DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M5-1R-21

M — DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M6-1R-21

N — WEST M3-4-24 / COUNTY 10 M1-6-24

O — DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24

P — DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M6-3-21

Q — DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M5-1R-21

R — DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M6-1R-21

S — DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M5-1L-21

T — DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M6-1L-21

U — EAST M3-2-24 / COUNTY 10 M1-6-24

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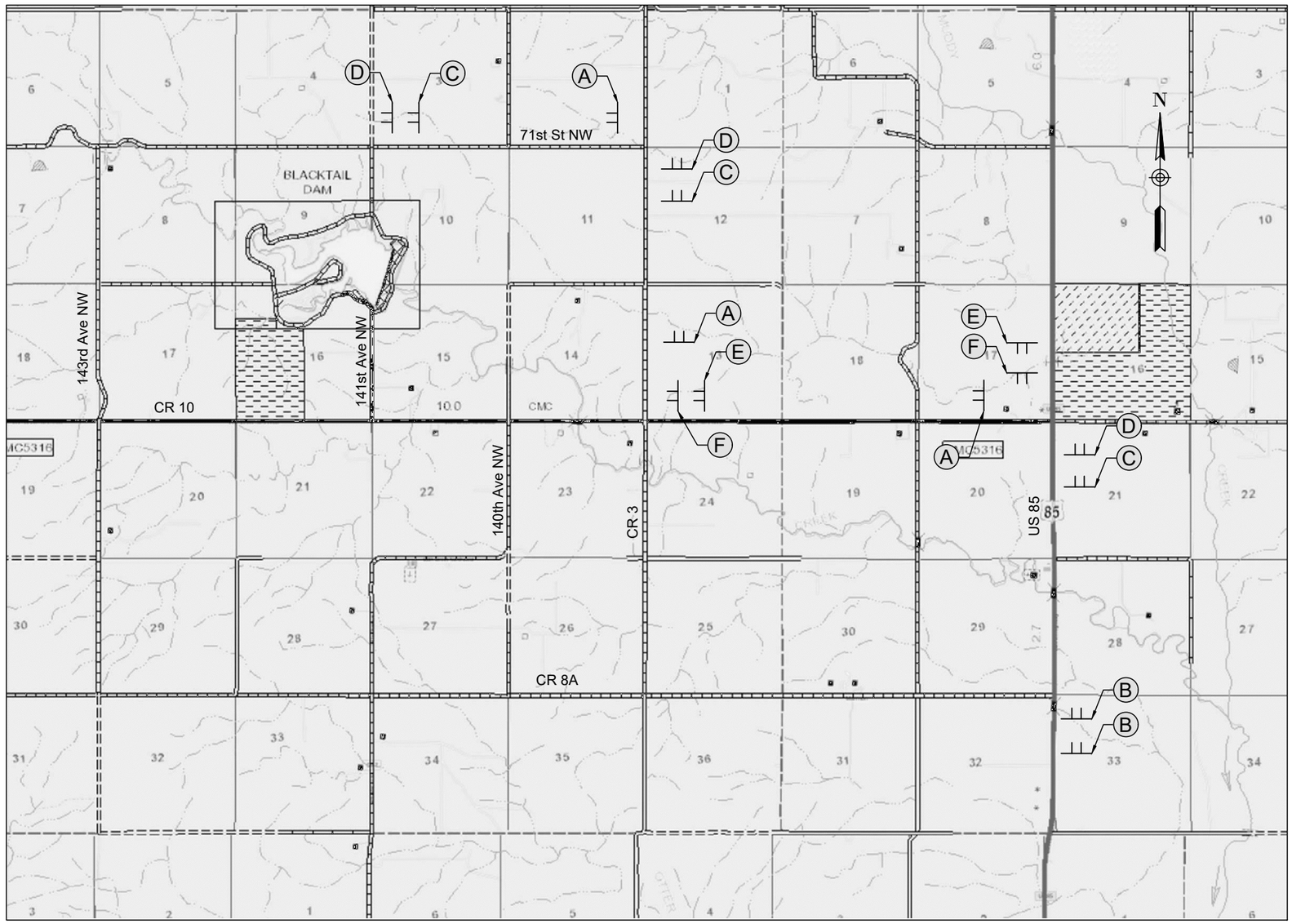
ACKERMAN ESTVOLD
1907 17th St SE · Minot, ND 58701
701.837.8737 · www.ackerman-estvold.com
Minot, ND | Williston, ND | Boise, ID

SCALE (H): N/A
SCALE (V): N/A

# Williams County Multiple Bridge Replacement Project
## Williams County, North Dakota
## Work Zone Traffic Control
## Detour Route - Site #1

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 100 | 3 |




Ⓐ DETOUR M4-8-24
Blacktail Lake SS-1

Ⓑ DETOUR M4-8-24
Blacktail Lake SS-1
M6-3-21

Ⓒ DETOUR M4-8-24
Blacktail Lake SS-1
M5-1L-21

Ⓓ DETOUR M4-8-24
Blacktail Lake SS-1
M6-1L-21

Ⓔ DETOUR M4-8-24
Blacktail Lake SS-1
M5-1R-21

Ⓕ DETOUR M4-8-24
Blacktail Lake SS-1
M6-1R-21

Note: SS-1 sign shall be 30" X 24" sign with black lettering on orange background.

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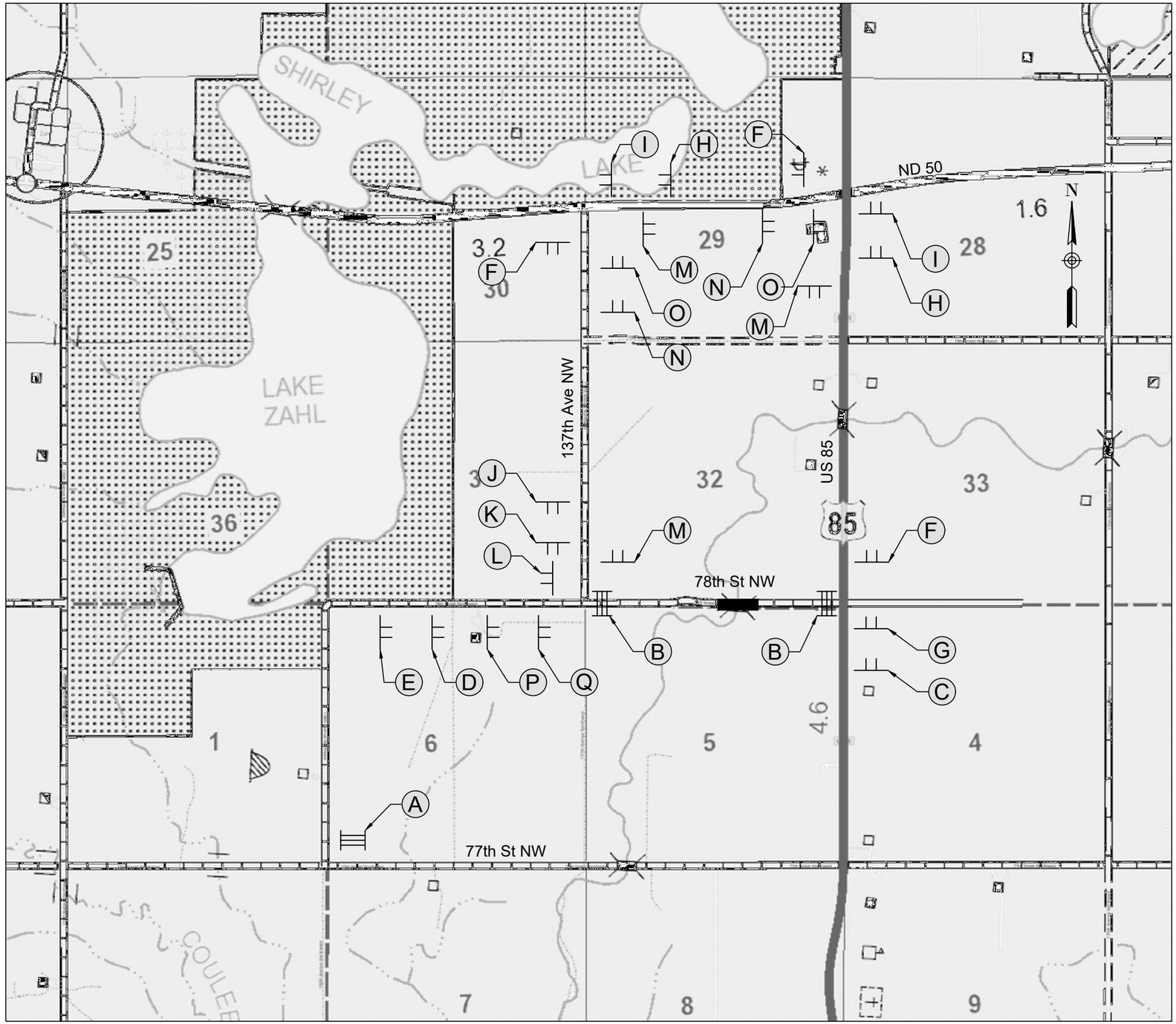
Minot, ND | Williston, ND | Boise, ID

SCALE (H): N/A
SCALE (V): N/A

Williams County Multiple Bridge Replacement Project
Williams County, North Dakota
Work Zone Traffic Control
Detour Route - Blacktail Lake

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 100 | 4 |




A — R11-3a-60: ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY — TYPE III BARRICADE

B — R11-2-48: ROAD CLOSED — (3) TYPE III BARRICADE

C — DETOUR AHEAD W20-2-48

D — DETOUR 1500 FT W20-2-48

E — ROAD CLOSED AHEAD W20-3-48

F — DETOUR M4-8-24 / WEST M3-4-24 / 78TH ST NW D1-3

G — DETOUR M4-8-24 / WEST M3-4-24 / 78TH ST NW D1-3 / M6-3-21

H — DETOUR M4-8-24 / WEST M3-4-24 / 78TH ST NW D1-3 / M5-1L-21

I — DETOUR M4-8-24 / WEST M3-4-24 / 78TH ST NW D1-3 / M6-1L-21

J — DETOUR M4-8-24 / WEST M3-4-24 / 78TH ST NW D1-3 / M5-1R-21

K — DETOUR M4-8-24 / WEST M3-4-24 / 78TH ST NW D1-3 / M6-1R-21

L — WEST M3-4-24 / 78TH ST NW D1-3

M — DETOUR M4-8-24 / EAST M3-2-24 / 78TH ST NW D1-3

N — DETOUR M4-8-24 / EAST M3-2-24 / 78TH ST NW D1-3 / M5-1R-21

O — DETOUR M4-8-24 / EAST M3-2-24 / 78TH ST NW D1-3 / M6-1R-21

P — DETOUR M4-8-24 / EAST M3-2-24 / 78TH ST NW D1-3 / M5-1L-21

Q — DETOUR M4-8-24 / EAST M3-2-24 / 78TH ST NW D1-3 / M6-1L-21

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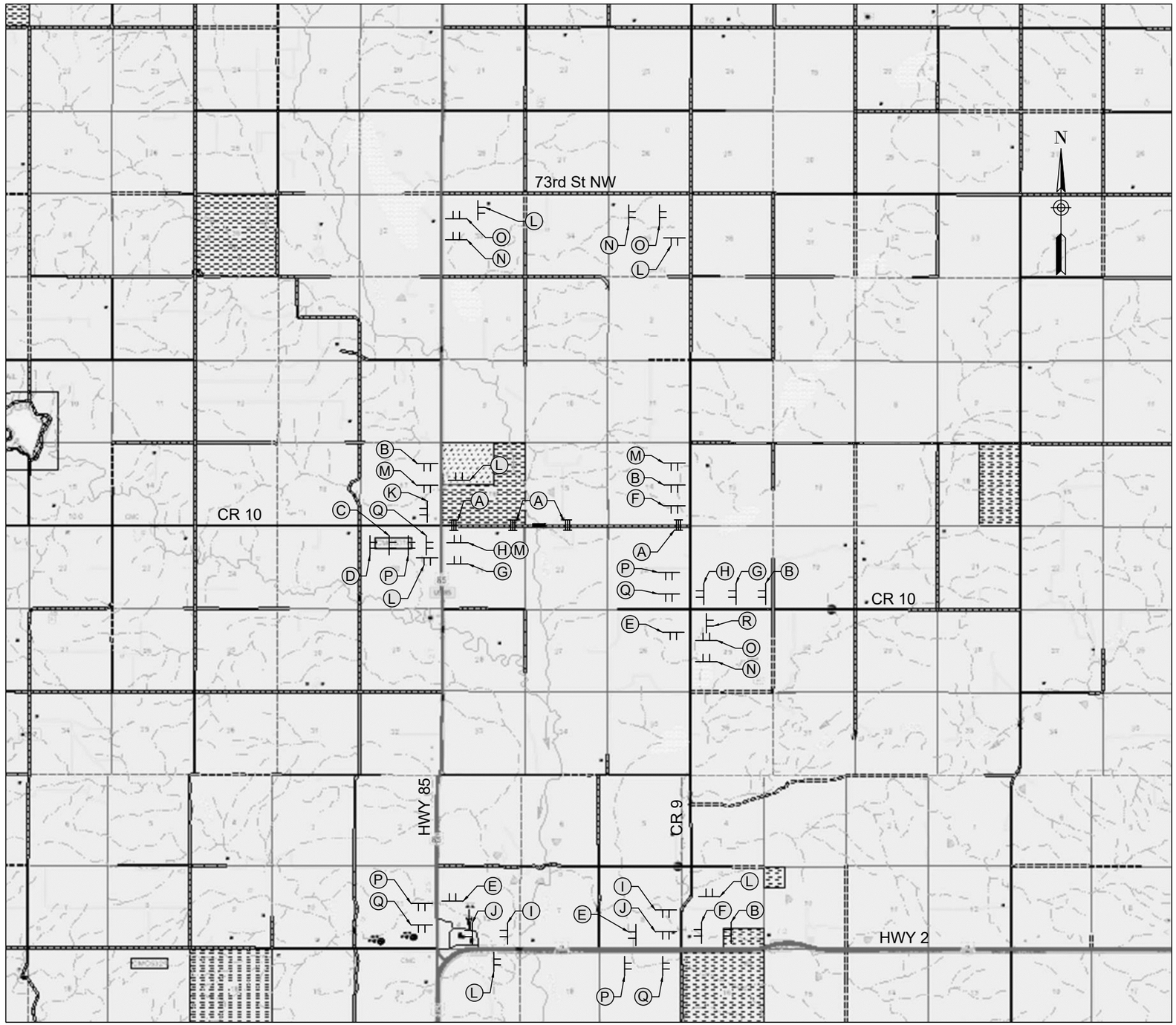
Minot, ND | Williston, ND | Boise, ID

SCALE (H): N/A
SCALE (V): N/A

Williams County Multiple Bridge Replacement Project
Williams County, North Dakota
Work Zone Traffic Control
Detour Route - Site #2

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 100 | 5 |




R11-2-48

A ROAD CLOSED

(3) TYPE III BARRICADE

B DETOUR AHEAD W20-2-48

C DETOUR 1500 FT W20-2-48

D ROAD CLOSED AHEAD W20-3-48

E DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24

F DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M6-3-21

G DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M5-1L-21

H DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M6-1L-21

I DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M5-1R-21

J DETOUR M4-8-24 / WEST M3-4-24 / COUNTY 10 M1-6-24 / M6-1R-21

K WEST M3-4-24 / COUNTY 10 M1-6-24

L DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24

M DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M6-3-21

N DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M5-1R-21

O DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M6-1R-21

P DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M5-1L-21

Q DETOUR M4-8-24 / EAST M3-2-24 / COUNTY 10 M1-6-24 / M6-1L-21

R EAST M3-2-24 / COUNTY 10 M1-6-24

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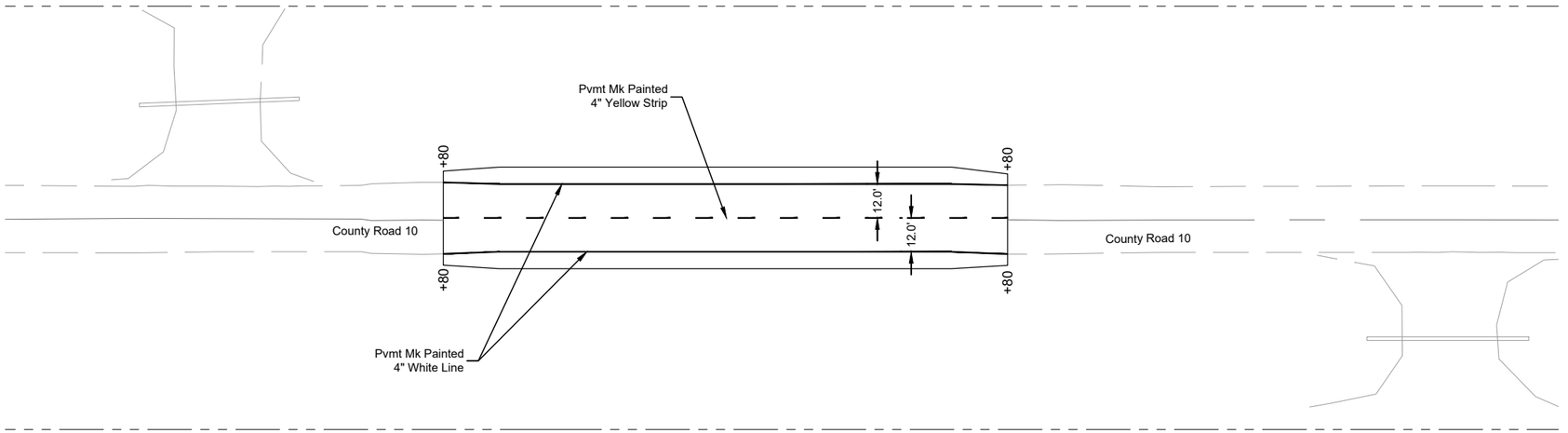
Minot, ND | Williston, ND | Boise, ID

SCALE (H): N/A
SCALE (V): N/A

Williams County Multiple Bridge Replacement Project
Williams County, North Dakota
Work Zone Traffic Control
Detour Route - Site #3

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 120 | 1 |




N

LEGEND

Existing Right of Way

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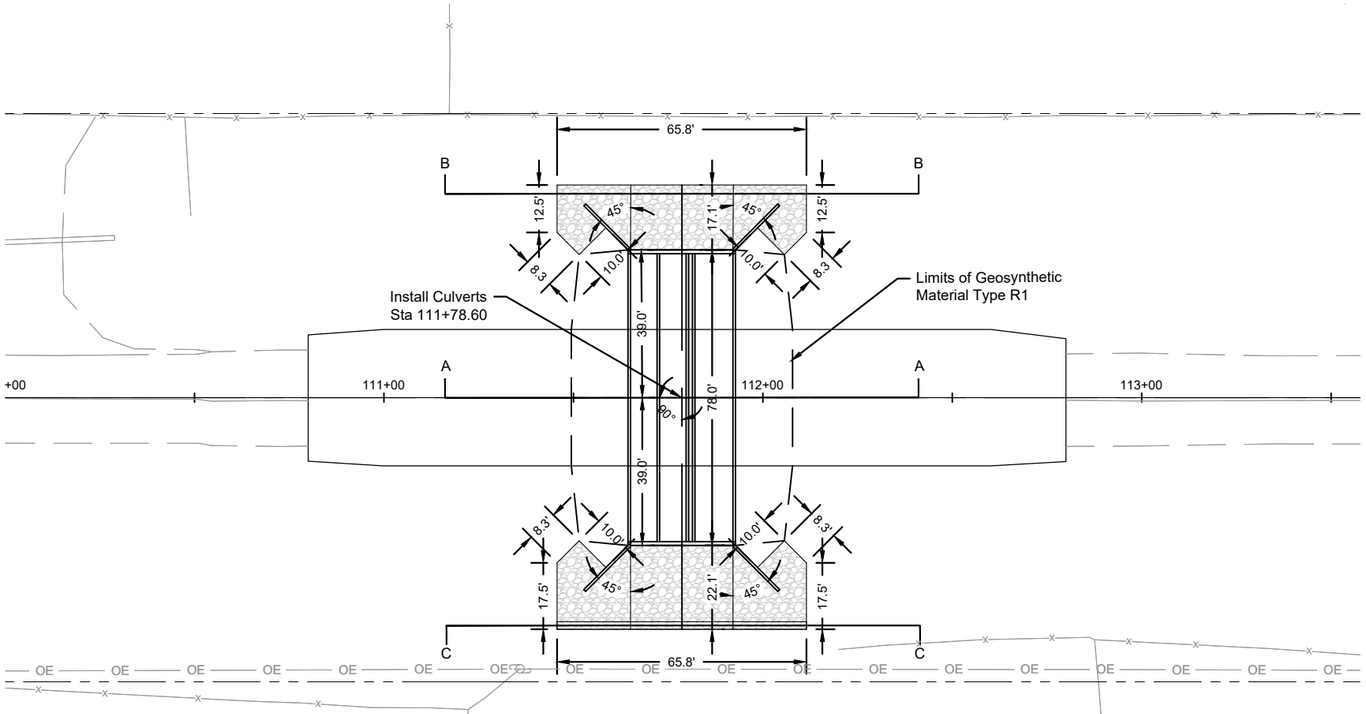
SCALE (H): 1"=50'
SCALE (V): NA

25 12.5 0 25 50

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Pavement Markings
CR 10, West of US 85 - Site #1

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 170 | 1 |




## LEGEND

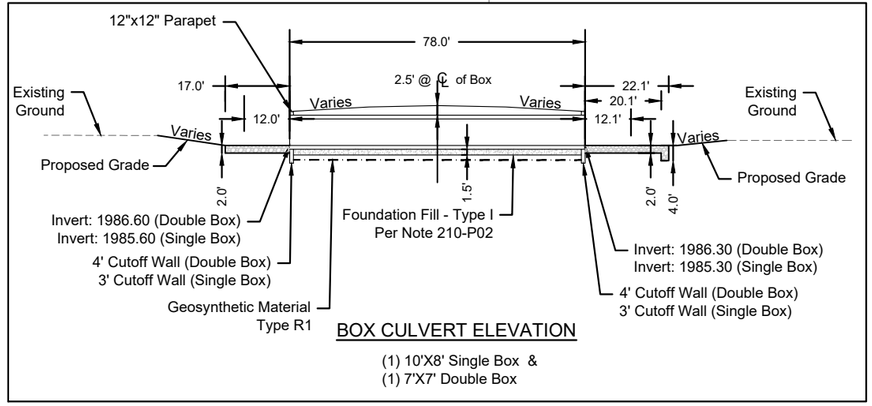
Existing Right of Way

Permanent Roadway Easement

## HYDRAULIC DATA

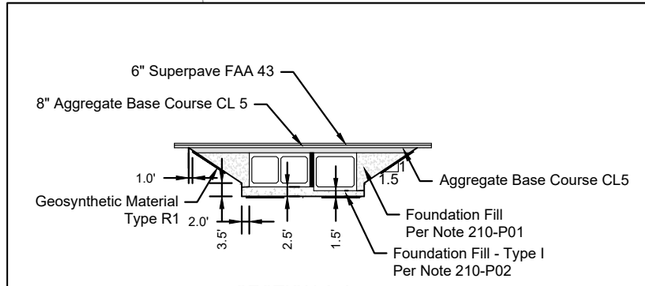
Drainage Area: 36.47 mi²
Design Frequency: 25 year
Design Discharge: 894 cfs
Design Headwater Stage: 1993.45 ft.
Design Tailwater Stage: 1992.63 ft.
Velocity Through Culvert: 6.13 fps
100-yr Frequency Discharge: 1365 cfs
100-yr Frequency Headwater: 1994.96 ft.
Overtopping Stage: 1996.83 ft.
Overtopping Discharge: 1820 cfs

| SPEC | CODE | ITEM DESCRIPTION | UNIT | QUANTITY |
|---|---|---|---|---|
| 210 | 0112 | Class 2 Excavation-Site 1 | EA | 1 |
| 210 | 0202 | Foundation Preparation-Site 1 | EA | 1 |
| 210 | 0209 | Foundation Fill | TON | 908 |
| 210 | 0225 | Foundation Fill - Type I | TON | 849 |
| 256 | 0200 | Riprap Grade II | CY | 187 |
| 606 | 1008 | 10FT X 8FT Precast RCB Culvert | LF | 78 |
| 606 | 2707 | DBL 7FT X 7FT Precast RCB Culvert | LF | 78 |
| 606 | 6707 | DBL 7FT X 7FT Precast RCB End Section | EA | 2 |
| 709 | 0151 | Geosynthetic Material Type R1 | SY | 592 |
| 709 | 0155 | Geosynthetic Material Type RR | SY | 264 |

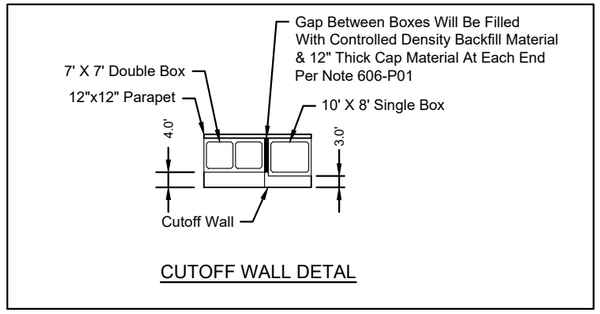



BOX CULVERT ELEVATION

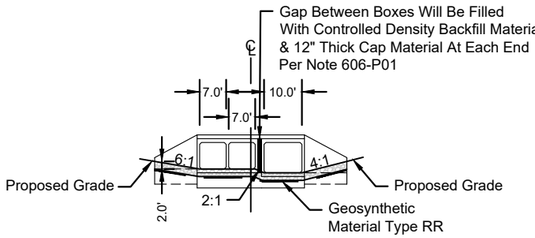
(1) 10'X8' Single Box &
(1) 7'X7' Double Box



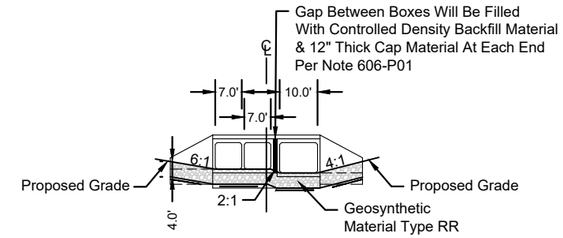

SECTION A-A




CUTOFF WALL DETAL




SECTION B-B




SECTION C-C

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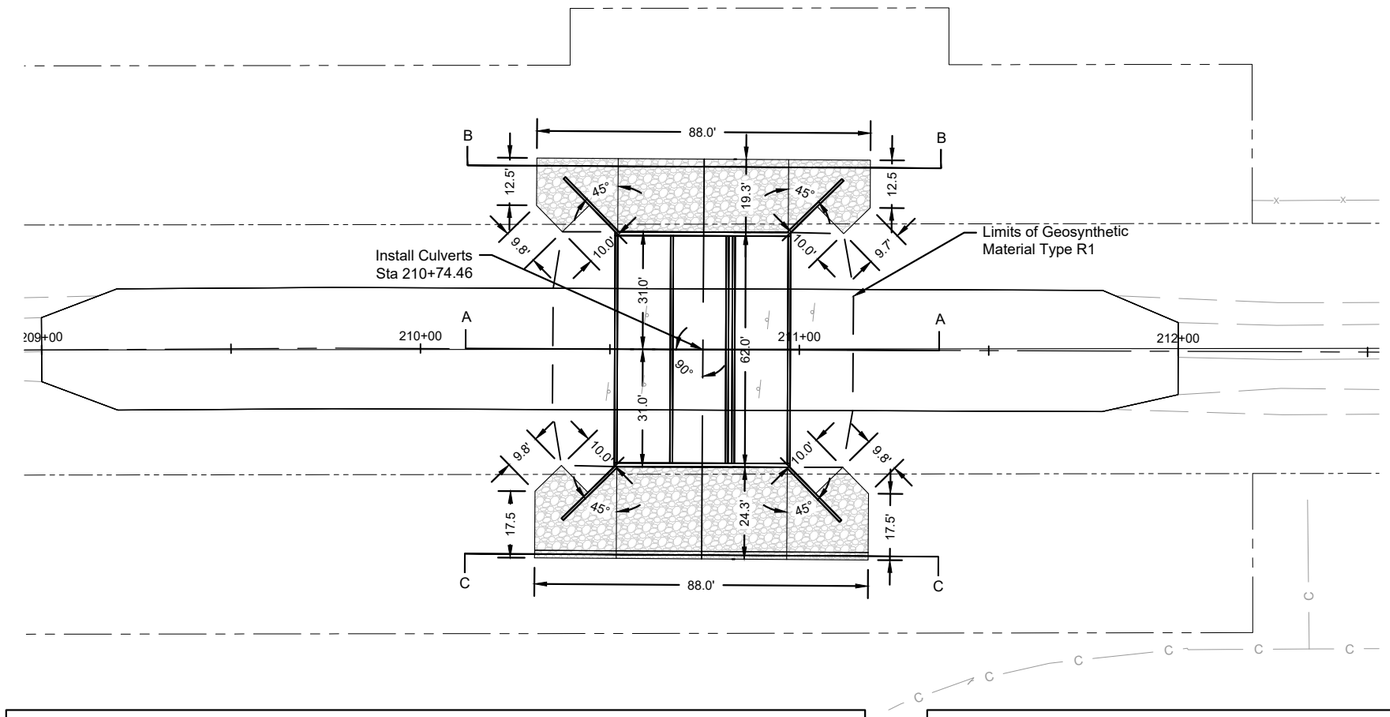
Minot, ND | Williston, ND | Boise, ID

SCALE (H): 1"=40'
SCALE (V): NA

20 10 0 20 40

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Box Culvert Detail
Site #1 - CR 10 West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 170 | 2 |




## LEGEND

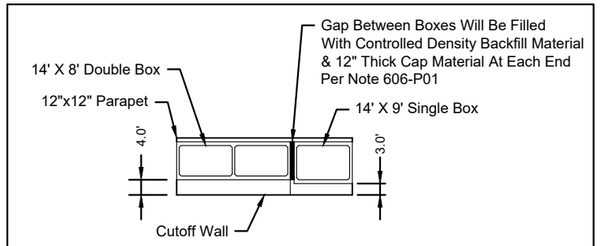
Existing Right of Way

Permanent Roadway Easement

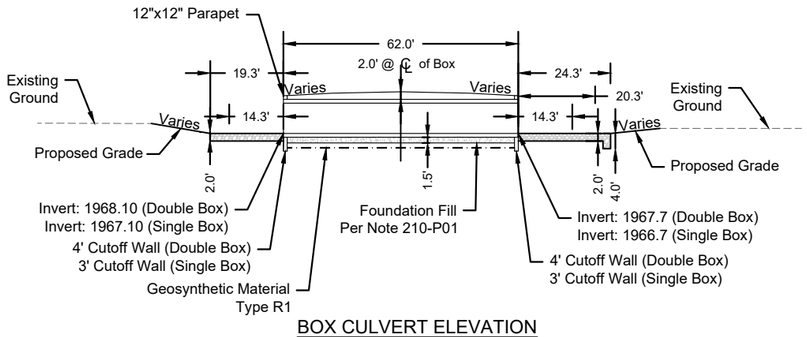
## HYDRAULIC DATA

Drainage Area: 210.24 $mi^2$
Design Frequency: 25 year
Design Discharge: 2015 cfs
Design Headwater Stage: 1976.12 ft.
Design Tailwater Stage: 1975.39 ft.
Velocity Through Culvert: 6.24 fps
100-yr Frequency Discharge: 3166 cfs
100-yr Frequency Headwater: 1977.12 ft.
Overtopping Stage: 1976.31 ft.
Overtopping Discharge: 2030 cfs

| SPEC | CODE | ITEM DESCRIPTION | UNIT | QUANTITY |
|---|---|---|---|---|
| 210 | 0113 | Class 2 Excavation-Site 2 | EA | 1 |
| 210 | 0203 | Foundation Preparation-Site 2 | EA | 1 |
| 210 | 0209 | Foundation Fill | TON | 1,464 |
| 210 | 0225 | Foundation Fill - Type I | TON | 0 |
| 256 | 0200 | Riprap Grade II | CY | 274 |
| 606 | 1409 | 14FT X 9FT Precast RCB Culvert | LF | 62 |
| 606 | 3408 | DBL 14FT X 8FT Precast RCB Culvert | LF | 62 |
| 606 | 7408 | DBL 14FT X 8FT Precast RCB End Section | EA | 2 |
| 709 | 0151 | Geosynthetic Material Type R1 | SY | 614 |
| 709 | 0155 | Geosynthetic Material Type RR | SY | 389 |

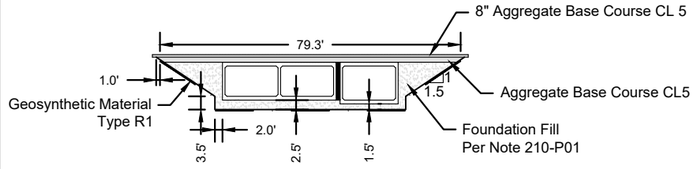



CUTOFF WALL DETAL

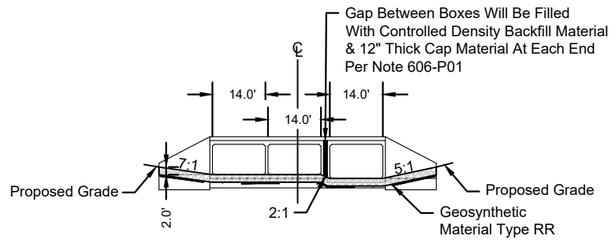



BOX CULVERT ELEVATION

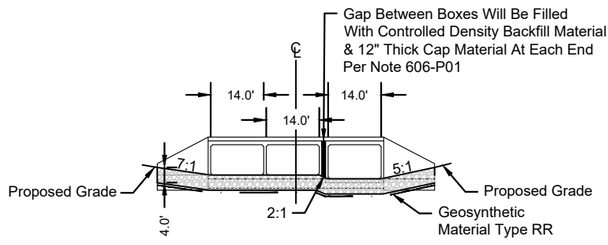
(1) 14'X9' Single Box &
(1) 14'X8' Double Box




SECTION A-A




SECTION B-B




SECTION C-C

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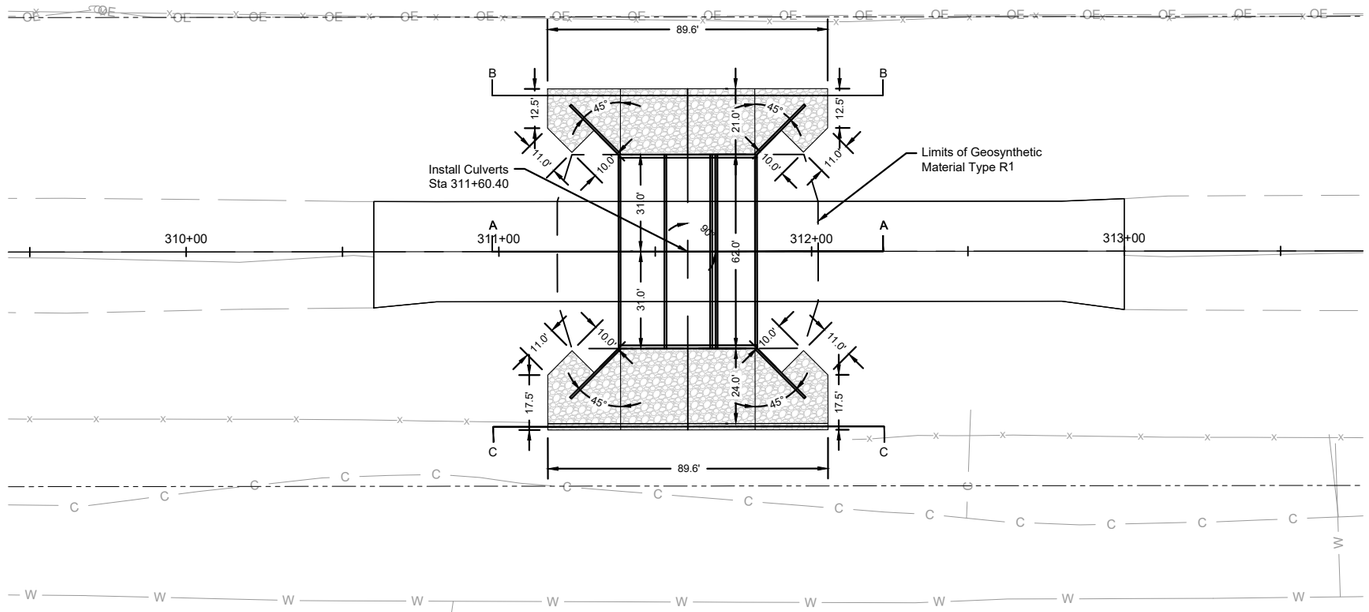
SCALE (H): 1"=40'
SCALE (V): NA

20 10 0 20 40

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Box Culvert Detail
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 170 | 3 |




## LEGEND

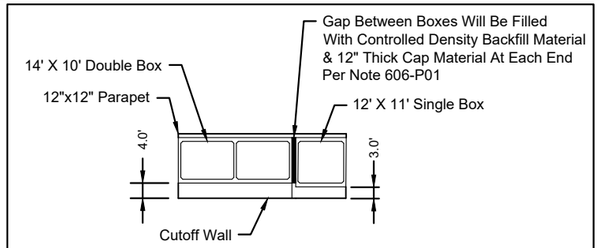
Existing Right of Way

Permanent Roadway Easement

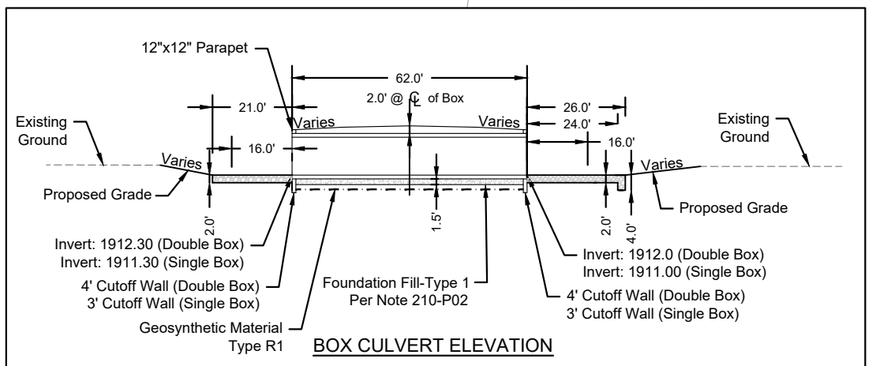
## HYDRAULIC DATA

Drainage Area: 360.66 mi²
Design Frequency: 25 year
Design Discharge: 2732 cfs
Design Headwater Stage: 1923.01 ft.
Design Tailwater Stage: 1921.90 ft.
Velocity Through Culvert: 7.04 fps
100-yr Frequency Discharge: 4273 cfs
100-yr Frequency Headwater: 1924.84 ft.
Overtopping Stage: 1923.96 ft.
Overtopping Discharge: 3300 cfs

| SPEC | CODE | ITEM DESCRIPTION | UNIT | QUANTITY |
|---|---|---|---|---|
| 210 | 0114 | Class 2 Excavation-Site 3 | EA | 1 |
| 210 | 0204 | Foundation Preparation-Site 3 | EA | 1 |
| 210 | 0209 | Foundation Fill | TON | 1,244 |
| 210 | 0225 | Foundation Fill - Type I | TON | 1,093 |
| 256 | 0200 | Riprap Grade II | CY | 294 |
| 606 | 1211 | 12FT X 11FT Precast RCB Culvert | LF | 62 |
| 606 | 3410 | DBL 14FT X 10FT Precast RCB Culvert | LF | 62 |
| 606 | 7410 | DBL 14FT X 10FT Precast RCB End Section | EA | 2 |
| 709 | 0151 | Geosynthetic Material Type R1 | SY | 654 |
| 709 | 0155 | Geosynthetic Material Type RR | SY | 420 |

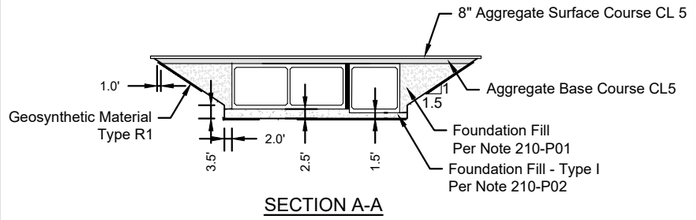



CUTOFF WALL DETAL

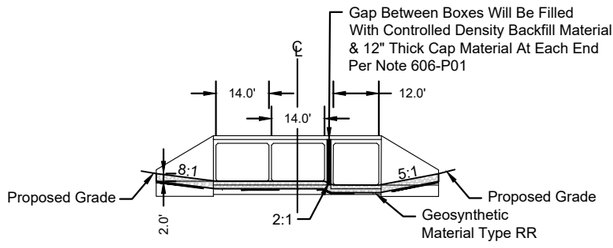



BOX CULVERT ELEVATION

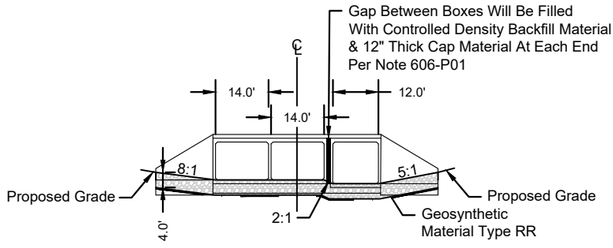
(1) 12'X11' Single Box &
(1) 14'X10' Double Box




SECTION A-A




SECTION B-B




SECTION C-C

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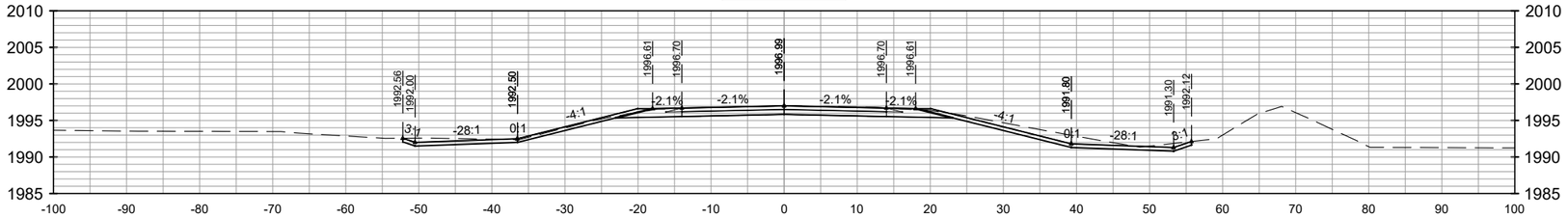
SCALE (H): 1"=40'
SCALE (V): NA

20 10 0 20 40

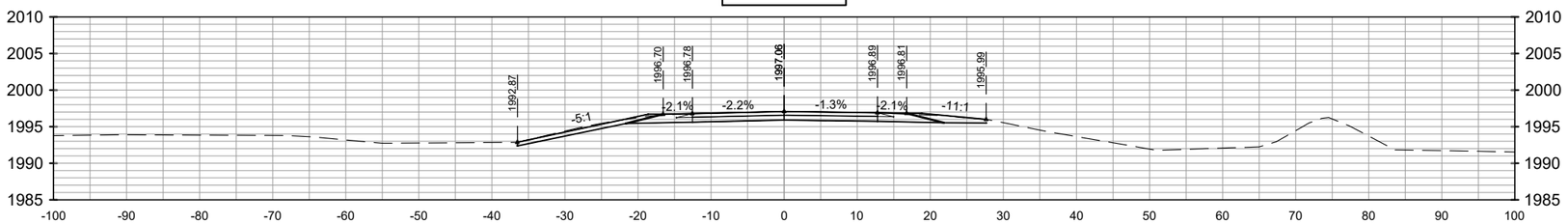
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Box Culvert Detail
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 1 |

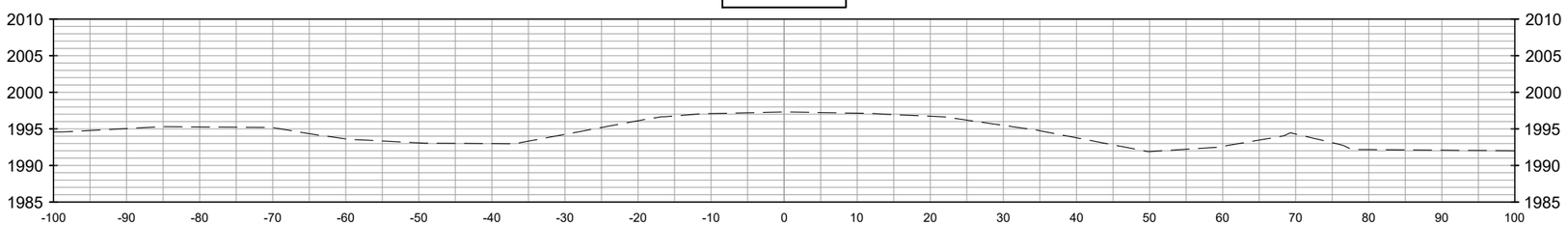
**111+00.00**




**110+80.00**




**110+50.00**

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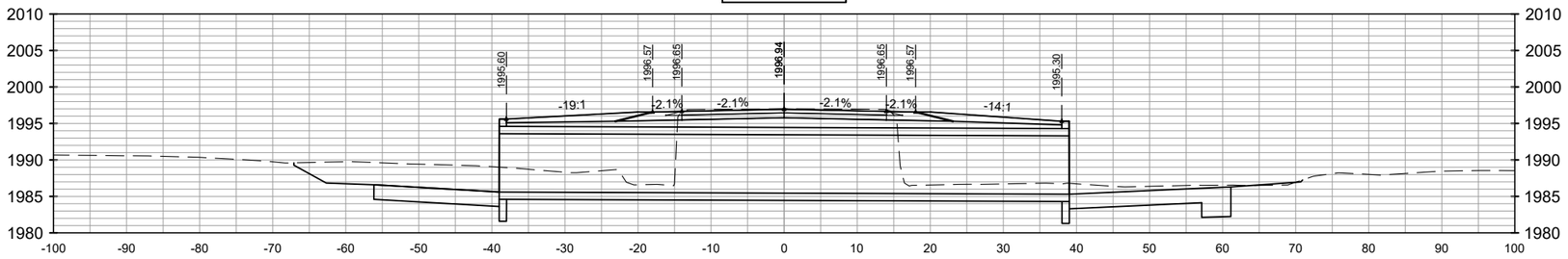
SCALE (H): 1"=10'
SCALE (V): 1"=10'

10 5 0 10 20

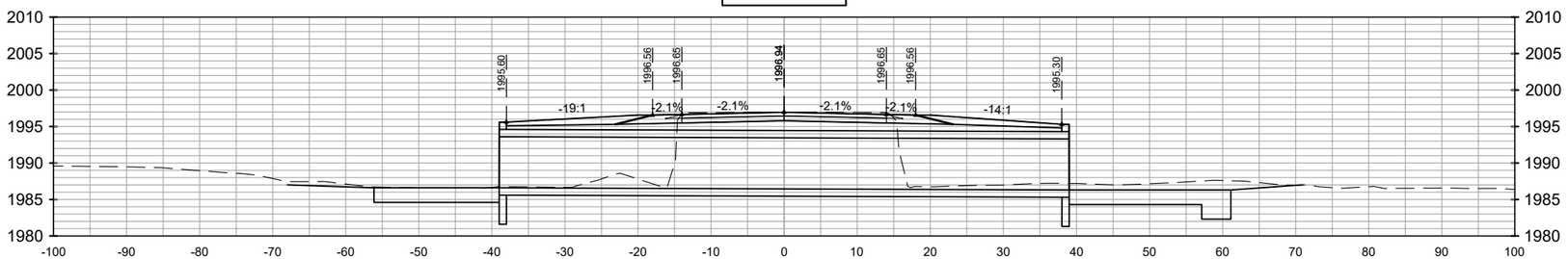
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #1 - CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 2 |

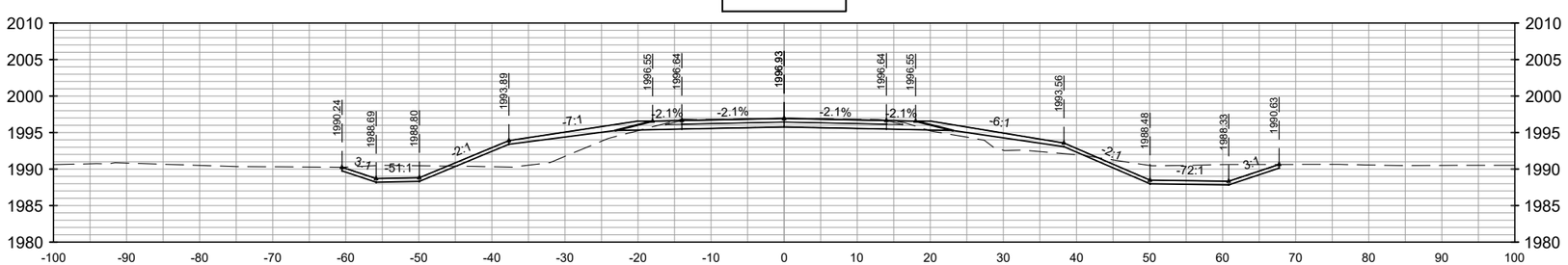
**111+83.00**




**111+75.50**




**111+50.00**





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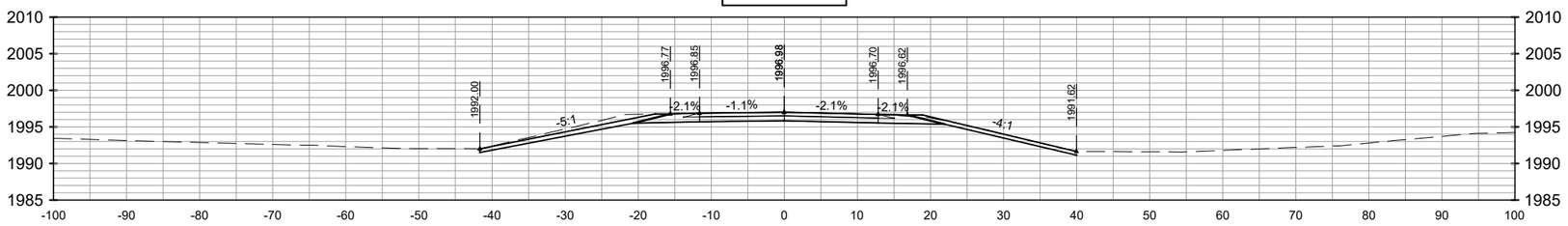
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

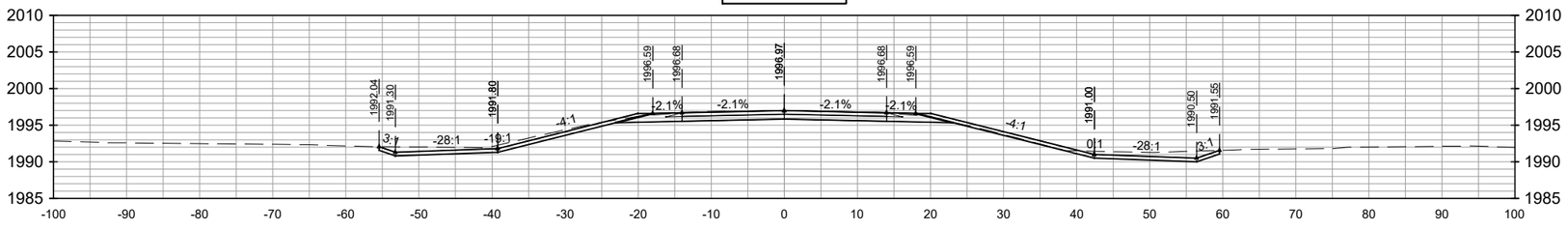
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #1 - CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 3 |

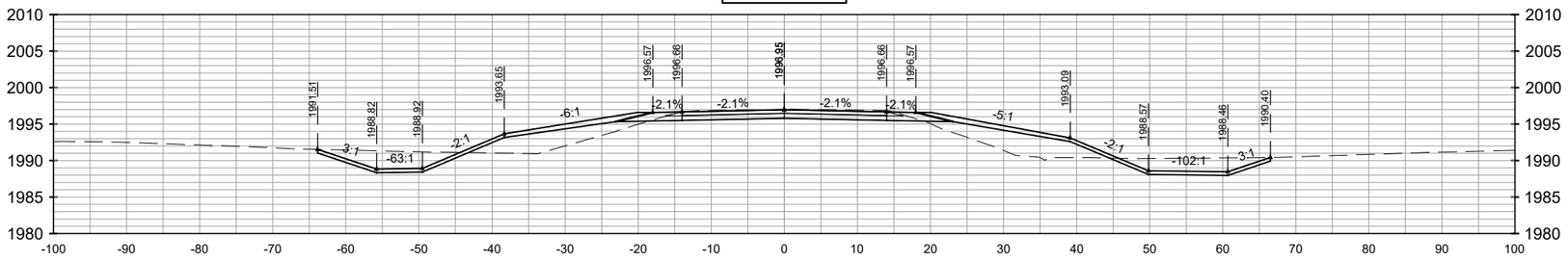
**112+80.00**




**112+60.00**




**112+10.00**

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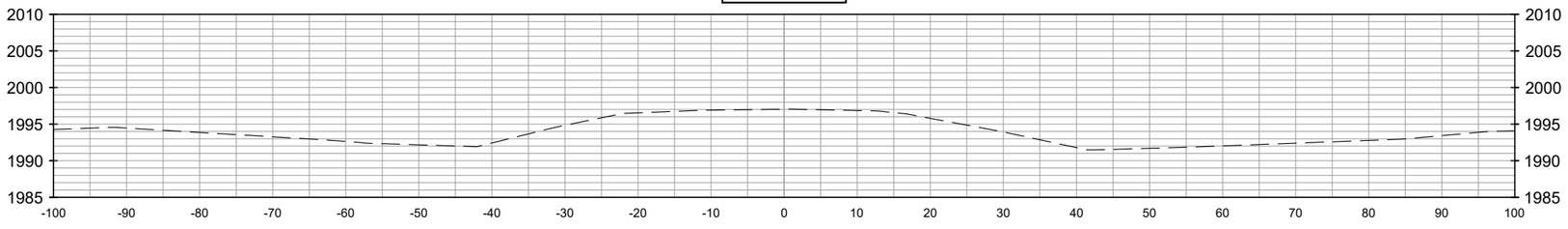
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #1 - CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 4 |

**113+00.00**

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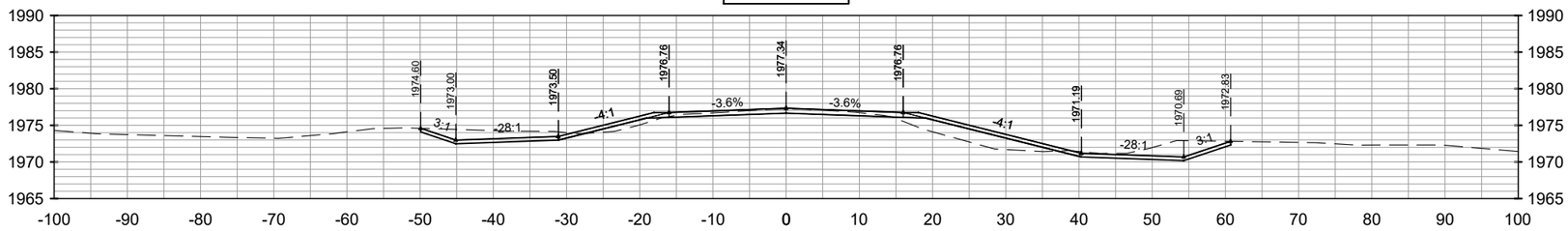
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

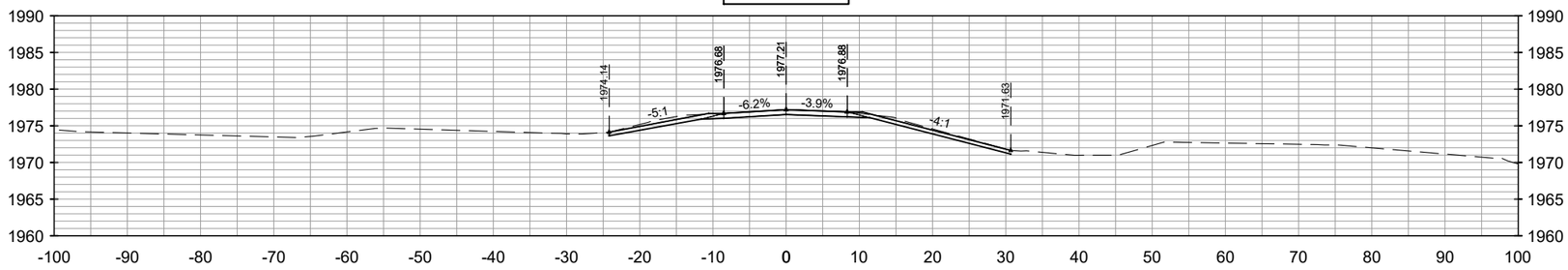
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #1 - CR 10, West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 5 |

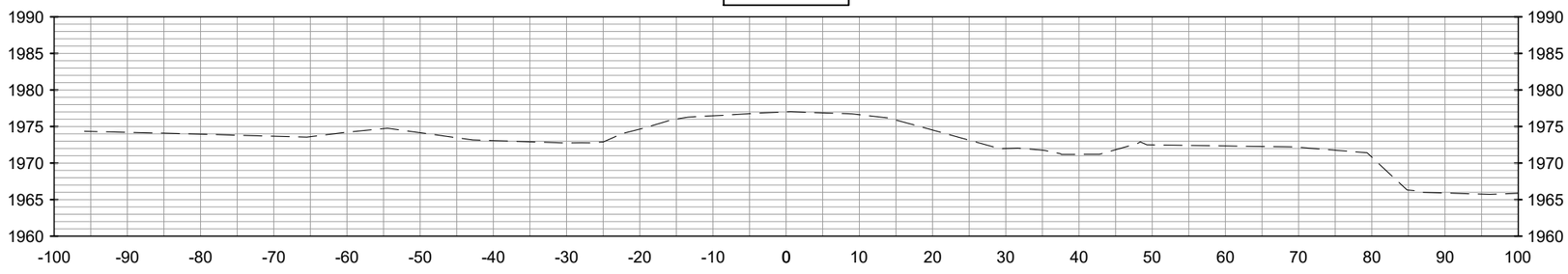
**209+20.00**




**209+00.00**




**208+50.00**

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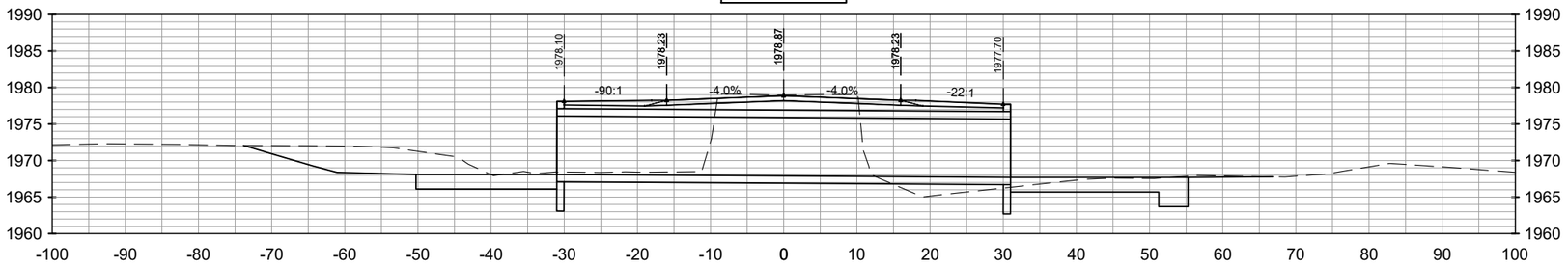
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

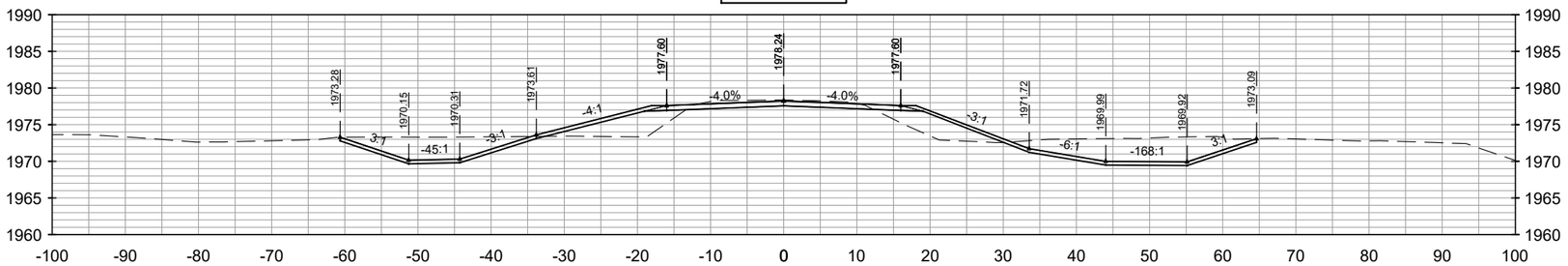
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 6 |

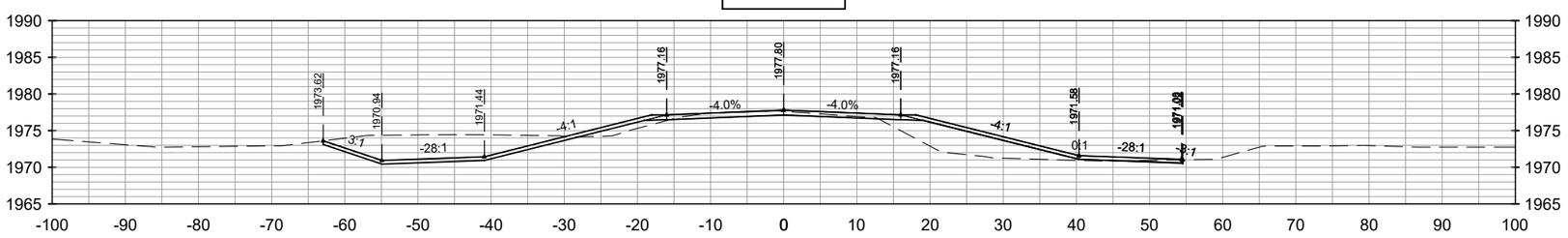
**210+70.00**




**210+30.00**




**209+89.21**





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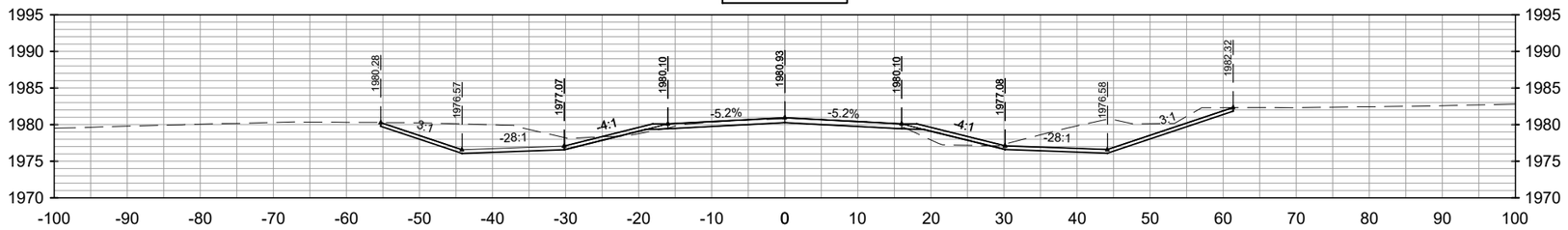
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

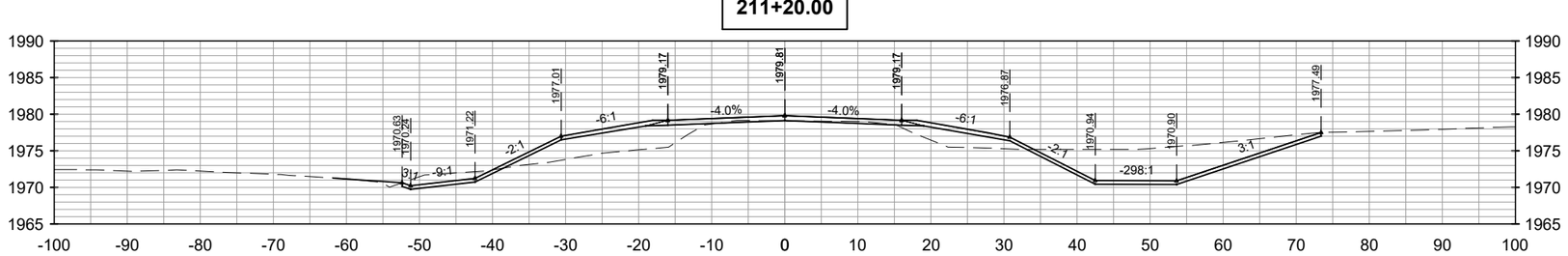
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 7 |

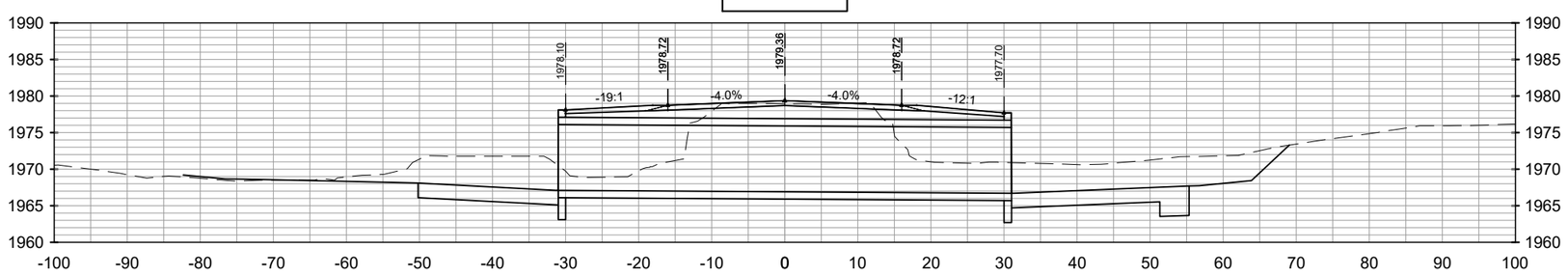
**211+80.00**




**211+20.00**




**210+96.00**

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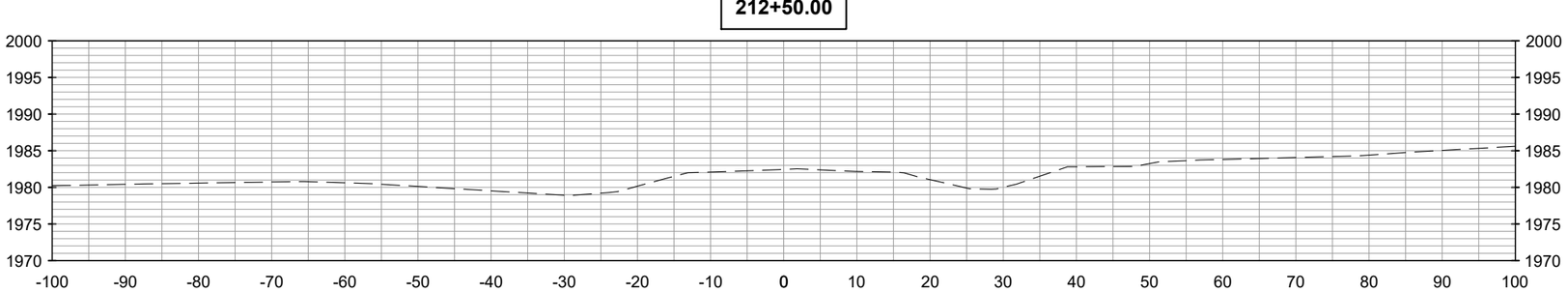
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

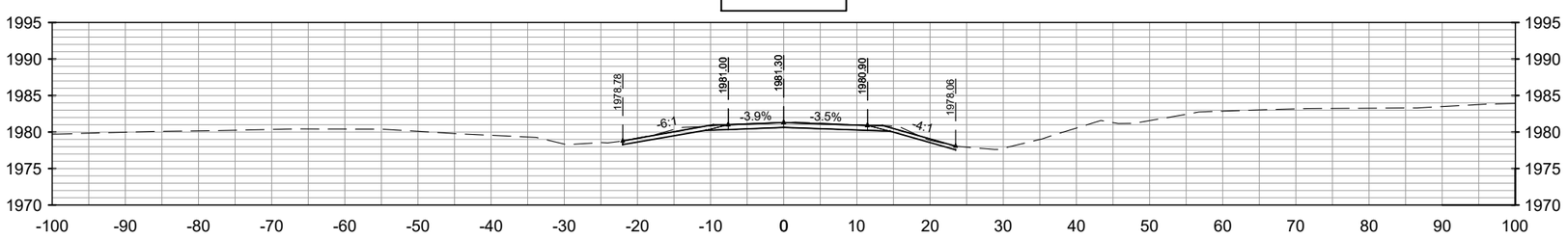
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 8 |

**212+50.00**




**212+00.00**

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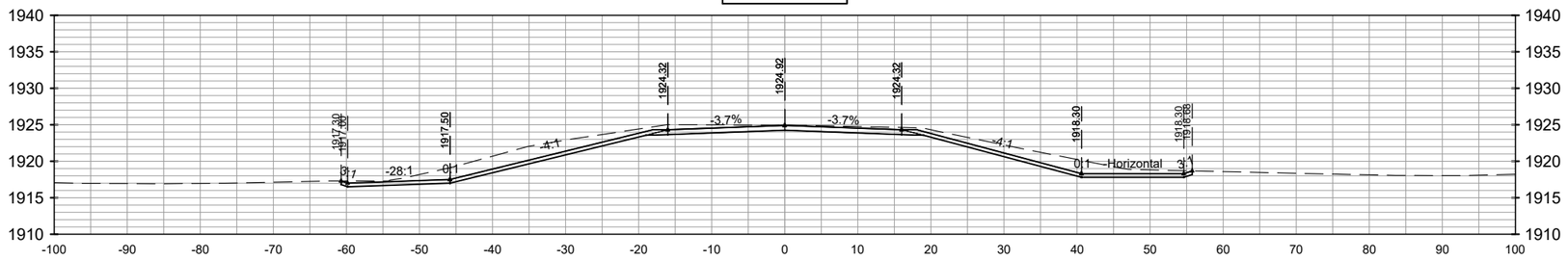
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

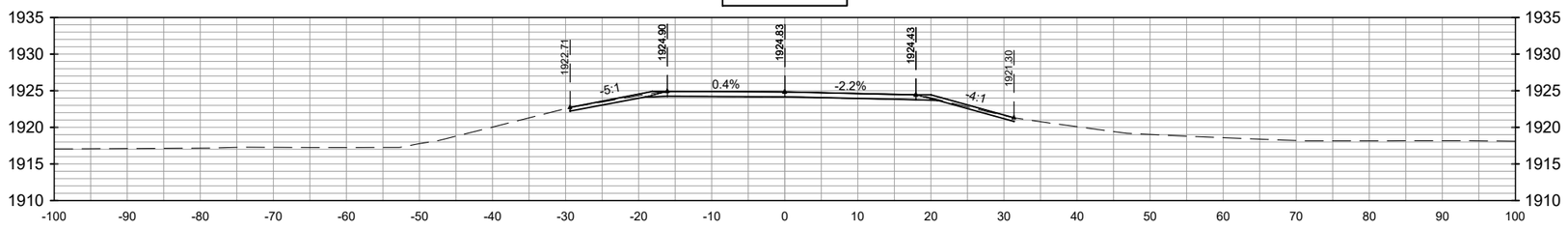
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #2 - 78th St., West of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 9 |

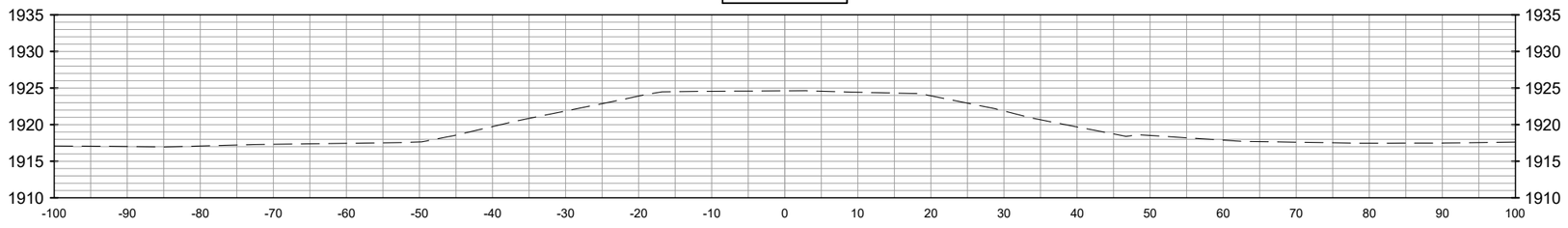
**310+80.00**




**310+60.00**




**310+00.00**

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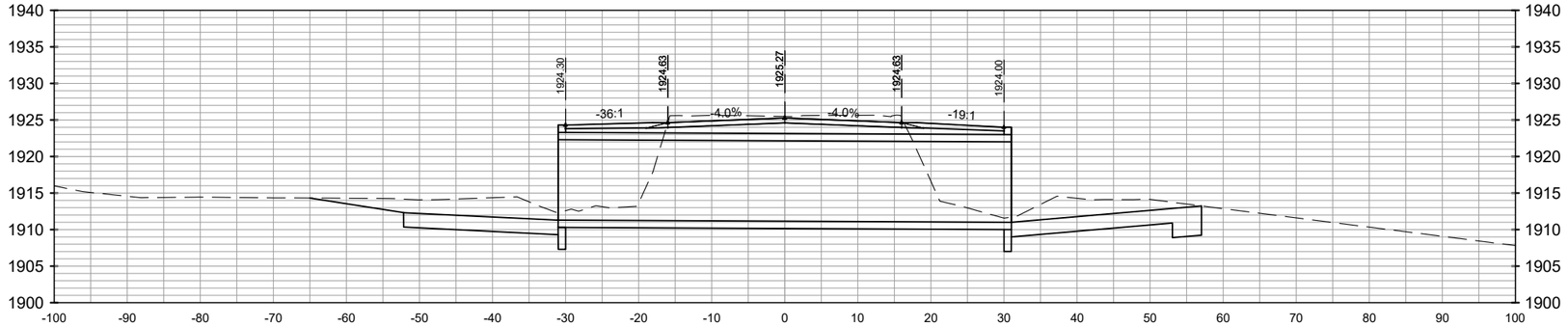
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

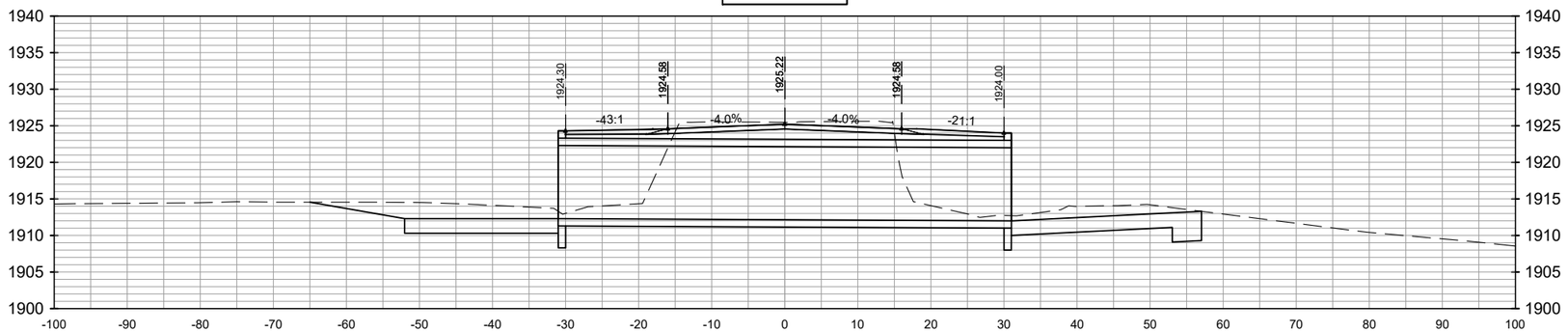
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 10 |

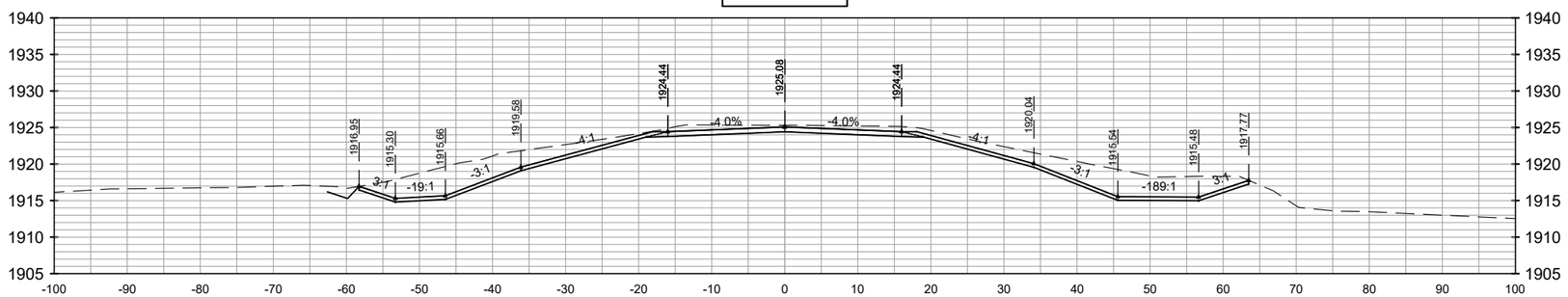
**311+70.00**




**311+50.00**




**311+15.73**

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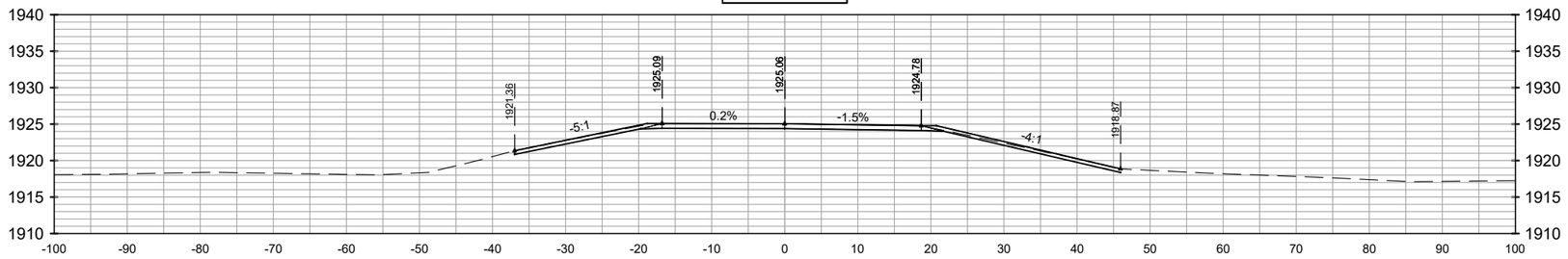
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

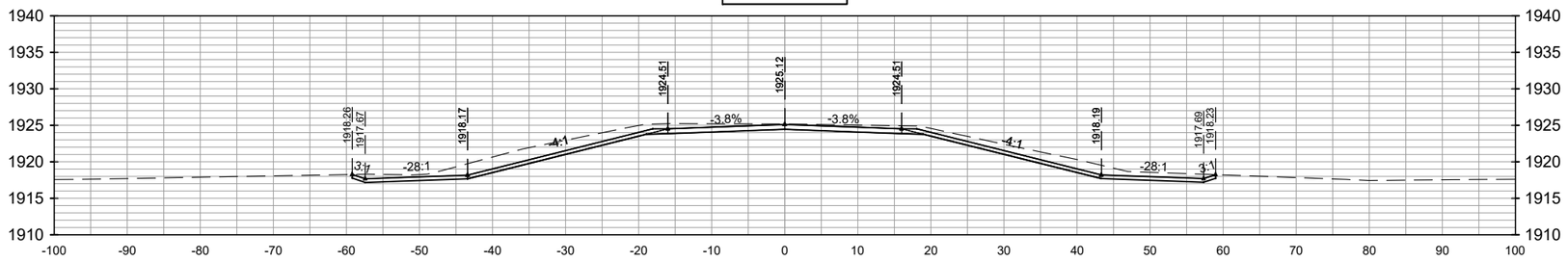
Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 11 |

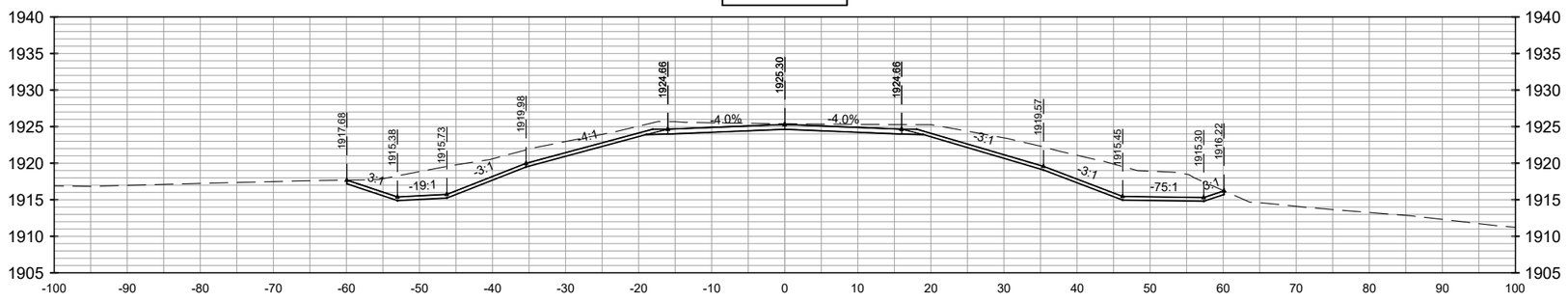
**313+00.00**




**312+80.00**




**312+04.59**

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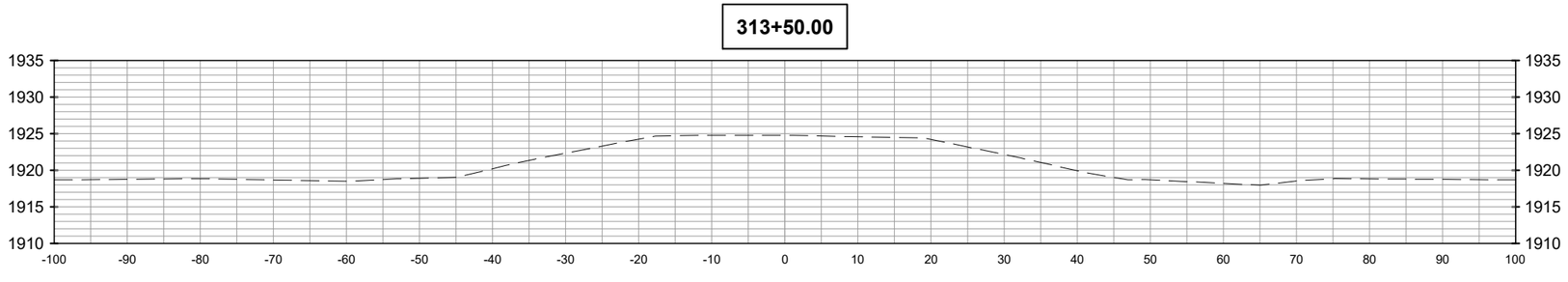
SCALE (H): 1"=20'
SCALE (V): 1"=20'

10 5 0 10 20

Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #3 - CR 10, East of US 85

| STATE | PROJECT NO. | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | BRR-0053(053) | 200 | 12 |

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SCALE (V): 1"=20'

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Williams County Multiple
Bridge Replacement Project
Williams County, ND
Cross Sections
Site #3 - CR 10, East of US 85