

FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 1         | 36           |

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

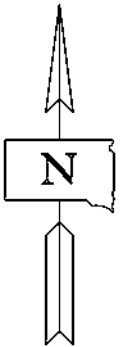
PLANS FOR PROPOSED

PROJECT BRF-B 6399(190)  
PERKINS COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING

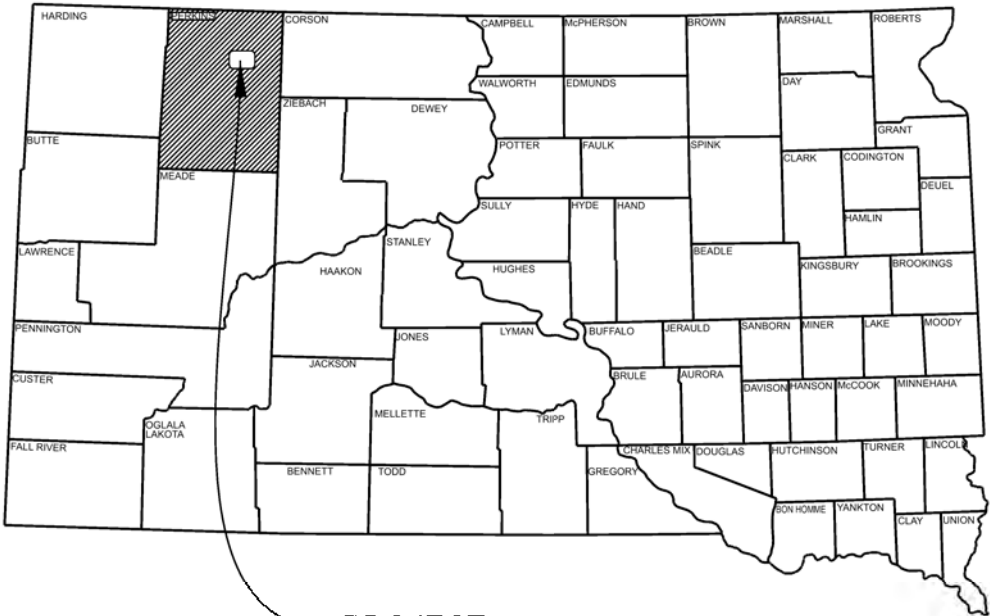
Str. No. 53-281-151

PCN 09M5



INDEX OF SHEETS

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PROJECT

DESIGN DESIGNATION

|            |        |
|------------|--------|
| ADT (2021) | 163    |
| ADT (2041) | 243    |
| DHV        | 36     |
| D          | 50.0%  |
| T DHV      | 1.8%   |
| T ADT      | 4.0%   |
| V          | 55 mph |

STORM WATER PERMIT DATA

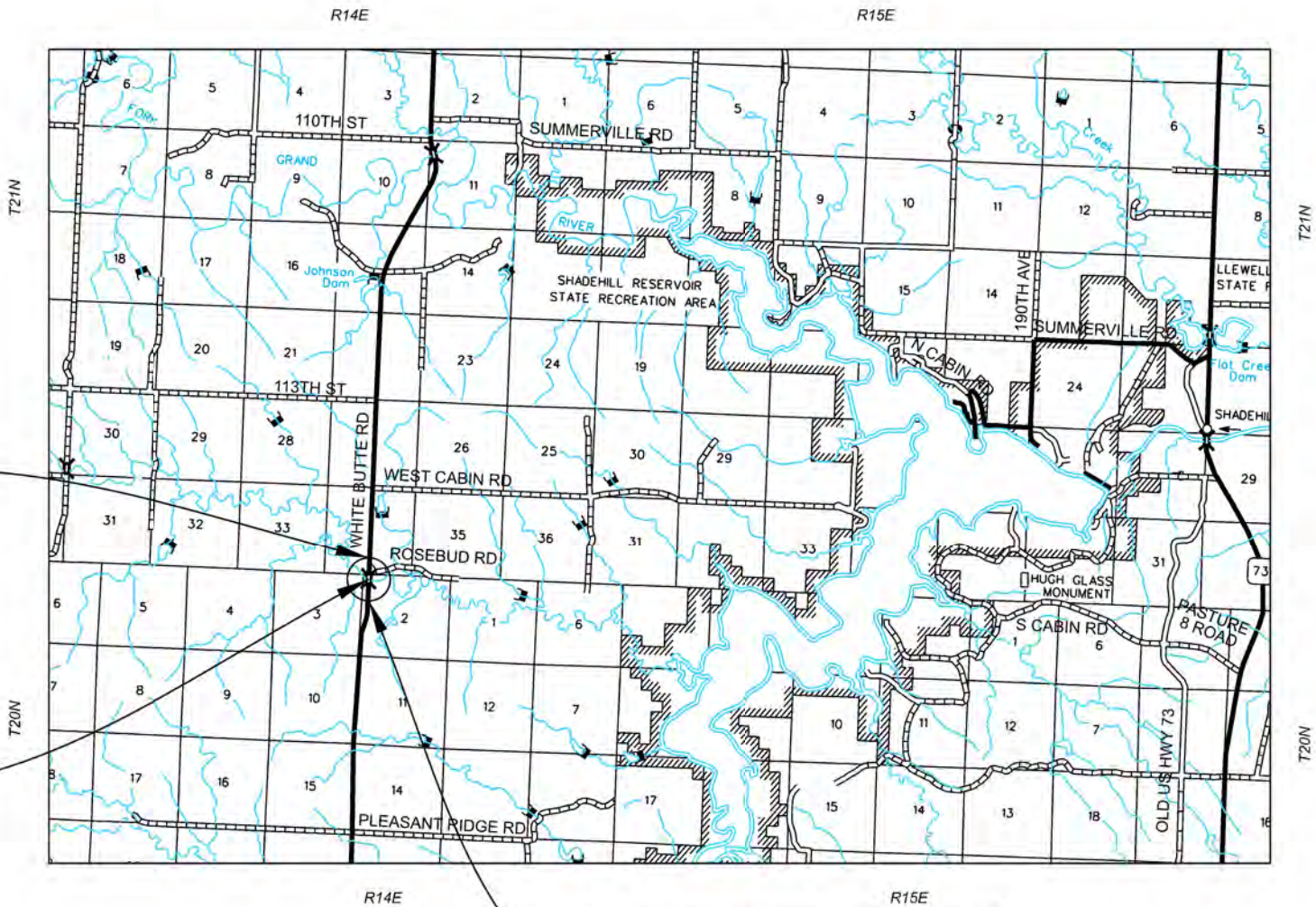
Major Receiving Body of Water: Lodgepole Creek  
Area Disturbed: 1.50 Acres  
Total Project Area: 4.40 Acres  
Latitude: 45° 43' 53.8" N  
Longitude: -102° 22' 24.0" W

END PROJECT BRF-B 6399(190)

At Sta. 14+00.00

304.64' East and 220.90' North  
of the NW Corner of  
Sec. 2 - T20N - R14E

Str. No. 53-281-151



BEGIN PROJECT BRF-B 6399(190)

At Sta. 7+00.00

304.72' East and 478.85' South  
of the NW Corner of  
Sec. 2 - T20N - R14E



2

November 18, 2026

# ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

FOR BIDDING PURPOSES ONLY

Revised:  
8/13/26

STATE OF  
SOUTH  
DAKOTA

PROJECT

BRF-B 6399(190)

SHEET NO.

2

TOTAL SHEETS

36

## Grading

| BID ITEM NUMBER | ITEM                                                         | QUANTITY | UNIT |
|-----------------|--------------------------------------------------------------|----------|------|
| 009E0010        | Mobilization                                                 | Lump Sum | LS   |
| 009E3230        | Grade Staking                                                | 0.104    | Mile |
| 009E3250        | Miscellaneous Staking                                        | 0.104    | Mile |
| 009E3280        | Slope Staking                                                | 0.104    | Mile |
| 009E3290        | Structure Staking                                            | 1        | Each |
| 009E3301        | Engineer Directed Surveying/Staking                          | 20.0     | Hour |
| 009E4200        | Construction Schedule, Category II                           | Lump Sum | LS   |
| 100E0100        | Clearing                                                     | Lump Sum | LS   |
| 110E1690        | Remove Sediment                                              | 1.7      | CuYd |
| 110E1693        | Remove Erosion Control Wattle                                | 175      | Ft   |
| 110E5010        | Salvage Delineator                                           | 20       | Each |
| 110E5020        | Salvage Traffic Sign                                         | 2        | Each |
| 120E0010        | Unclassified Excavation                                      | 6,905    | CuYd |
| 120E0600        | Contractor Furnished Borrow                                  | 7,605    | CuYd |
| 120E6100        | Water for Embankment                                         | 145.5    | MGal |
| 230E0010        | Placing Topsoil                                              | 515      | CuYd |
| 260E1010        | Base Course                                                  | 56.7     | Ton  |
| 260E1050        | Base Course, Salvaged Asphalt Mix                            | 583.3    | Ton  |
| 270E0040        | Salvage and Stockpile Asphalt Mix and Granular Base Material | 583.3    | Ton  |
| 600E0200        | Type II Field Laboratory                                     | 1        | Each |
| 632E2510        | Type 2 Object Marker Back to Back                            | 4        | Each |
| 634E0110        | Traffic Control Signs                                        | 360.2    | SqFt |
| 634E0120        | Traffic Control, Miscellaneous                               | Lump Sum | LS   |
| 634E0275        | Type 3 Barricade                                             | 10       | Each |
| 730E0210        | Type F Permanent Seed Mixture                                | 31       | Lb   |
| 731E0100        | Fertilizing                                                  | 1,779    | Lb   |
| 732E0100        | Mulching                                                     | 5.0      | Ton  |
| 734E0102        | Type 2 Erosion Control Blanket                               | 800      | SqYd |
| 734E0154        | 12" Diameter Erosion Control Wattle                          | 700      | Ft   |
| 734E0165        | Remove and Reset Erosion Control Wattle                      | 175      | Ft   |

## Structure Structure No. 53-281-151

| BID ITEM NUMBER | ITEM                              | QUANTITY | UNIT |
|-----------------|-----------------------------------|----------|------|
| 250E0030        | Incidental Work, Structure        | Lump Sum | LS   |
| 420E0200        | Structure Excavation, Box Culvert | 273      | CuYd |
| 421E0200        | Box Culvert Undercut              | 674      | CuYd |
| 460E0120        | Class A45 Concrete, Box Culvert   | 698.5    | CuYd |
| 480E0100        | Reinforcing Steel                 | 114,939  | Lb   |
| 700E0210        | Class B Riprap                    | 110.3    | Ton  |
| 831E0110        | Type B Drainage Fabric            | 129      | SqYd |
| 831E0300        | Reinforcement Fabric (MSE)        | 985      | SqYd |

## ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <<https://dot.sd.gov/doing-business/environmental/about-environmental/>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

## COMMITMENT A: AQUATIC RESOURCES

### COMMITMENT A1: WETLANDS

All efforts to avoid and minimize wetland impacts from the project have resulted in approximately 0.05 acres of wetlands (includes temporary and permanent) becoming impacted. Refer to the plans for location and boundaries of the impacted wetlands.

#### Table of Impacted Wetlands

| Wetland No. | Station         | Permanent Impact (Acres) | Temporary Impact (Acres) | Total Impact (Acres) |
|-------------|-----------------|--------------------------|--------------------------|----------------------|
| 1           | 9+90 to 10+10 L | 0.026                    | 0.000                    | 0.026                |
| 2           | 9+75 to 10+24 R | 0.028                    | 0.030                    | 0.058                |

#### Action Taken/Required:

Temporary impacts identified in the Table of Impacted Wetlands will not be mitigated as original contours and elevations will be re-established as designated in the plans. Prior to initiating temporary work in wetlands, the Contractor will submit a plan to the Project Engineer in accordance with Section 7.18 D of the Specifications.

The Contractor will notify the Project Engineer if additional easement is needed to complete work adjacent to any wetland. The Contractor will notify the Project Engineer if additional easement is needed to complete work adjacent to any

wetland. The Project Engineer will obtain an appropriate course of action from the Environmental Office before proceeding with construction activities that affect any wetlands beyond the work limits and easements shown in the plans.

## COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.06 acres of stream (includes temporary and permanent) becoming impacted. Refer to plans for location and boundaries of the impacted streams.

#### Table of Impacted Streams

| Stream Name     | Station     | Permanent Impact (Acres) | Temporary Impact (Acres) | Total Impact (Acres) |
|-----------------|-------------|--------------------------|--------------------------|----------------------|
| Lodgepole Creek | 10+00 (L&R) | 0.05                     | 0.01                     | 0.06                 |

#### Action Taken/Required:

Final compensatory mitigation requirements will be determined by the USACE during the Section 404 permitting process

The Contractor will notify the Project Engineer if additional easement is needed to complete work adjacent to any stream. The Project Engineer will obtain an appropriate course of action from the Environmental Office before proceeding with construction activities that affect any streams beyond the work limits and easements shown in the plans.

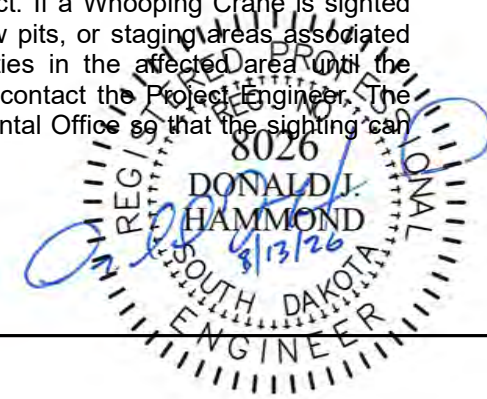
## COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

### COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight, and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

#### Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.



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COMMITMENT C: WATER SOURCE

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins.

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (SDDANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:  
< <https://sdleastwanted.sd.gov/maps/default.aspx> >

[South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:](https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04)  
<<https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04> >

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

Lodgepole Creek is classified as a warm water, marginal fishery with a total suspended solids standard of less than 150 mg/L 30-day average, less than 263 mg/L daily maximum.

This project may be in the vicinity of multiple streams and wetlands. These waters are considered waters of the state and are protected under Administrative Rules of South Dakota (ARSD) Chapter 74:51. Special construction measures may have to be taken to ensure that this water body is not impacted.

Action Taken/Required:

The Contractor is advised that the South Dakota Surface Water Quality Standards, administered by the South Dakota Department of Agriculture and Natural Resources (DANR), apply to this project. Special construction measures will be taken to ensure the above standard(s) of the surface waters are maintained and protected.

COMMITMENT D2: SURFACE WATER DISCHARGE

The DANR General Permit for Temporary Discharge Activities is required for temporary dewatering and discharges to waters of the state. The effluent limit for total suspended solids will be 90 mg/L 30-day average. The effluent limit applies to discharges to all waters of the state except discharges to waters classified as coldwater permanent fish life propagation waters according to the ARSD 74:51:01:45. For discharges to waters of the state classified as coldwater permanent fish life propagation waters, the effluent limit for total suspended solids will be 53 mg/L daily maximum.

The permittee has the option of completing effluent testing or implementing a pollution prevention plan for compliance with this permit. If the permittee develops a pollution prevention plan instead of total suspended solids sampling, the plan must be developed and implemented prior to discontinuing total suspended solids sampling. Refer to Section 4.0 of the permit. If any pollutants are suspected of being discharged, a sample must be taken for those parameters listed in Section 3.4 of the permit.

Refer to Commitment D1: Surface Water Quality for stream classification.

Action Taken/Required:

If construction dewatering is required and this project is currently covered under a General Permit for Stormwater Discharges Associated with Construction Activities, the contractor will need to submit the dewatering information to the SDDANR using the following form:  
<[https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR\\_AddTemplnfoFillable.pdf](https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_AddTemplnfoFillable.pdf) >

The Contractor will provide a copy of the approved permit or the submitted dewatering information to the Project Engineer prior to proceeding with any dewatering activities. The approved permit or submitted dewatering information must be kept on-site and as part of the project records.

Effluent monitoring, as a result of dewatering activities, will be summarized for each month and recorded on a separate Discharge Monitoring Report (DMR) and submitted to DANR monthly. Additional information can be found at:  
<<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/swdpermitting/Ereporting.aspx> >

COMMITMENT E: STORM WATER

Construction activities constitute 1 acre or more of earth disturbance and/or work in a waterway.

Action Taken/Required:

The DANR General Permit for Stormwater Discharges Associated with Construction Activities is required for construction activity disturbing one or more acres of earth and work in a waterway. The SDDOT is the owner of this permit and will submit the NOI to DANR 15 days prior to project start in order to obtain coverage under the General Permit. Work can begin once the DANR letter of approval is received.

The Contractor must adhere to the “Special Provision Regarding Storm Water Discharges to Waters of the State.”

The Contractor will complete the DANR Contractor Certification Form prior to the pre-construction meeting. The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the permit for this project. Work may not begin on this project until this form is signed and submitted to DANR.

The form can be found at:  
<[https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR\\_CGPAAppendixCCA2023Fillable.pdf](https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPAAppendixCCA2023Fillable.pdf) >

The Contractor is advised that permit coverage may also be required for off-site activities, such as borrow and staging areas, which are the responsibility of the Contractor.

Storm Water Pollution Prevention Plan

The Storm Water Pollution Prevention Plan (SWPPP) will be developed prior to the submittal of the NOI and will be implemented for all construction activities for compliance with the permit. The SWPPP must be kept on-site and updated as site conditions change. Erosion control measures and best management practices will be implemented in accordance with the SWPPP.

The DOT 298 Form will be used for site inspections and to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents and retained for a minimum of three years.

The inspection will include disturbed areas of the construction site that have not been finally stabilized, areas used for storage materials, structural control measures, and locations where vehicles enter or exit the site. These areas will be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP will be observed to ensure that they are operating correctly, and sediment is not tracked off the site.

Information on storm water permits and SWPPPs are available on the following websites:

SDDOT: < <https://dot.sd.gov/doing-business/environmental/stormwater> >

DANR:<<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater> >

EPA: < <https://www.epa.gov/npdes> >

|                             |                 |           |              |
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COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

- 1) Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, “No Dumping Allowed”.
- 2) Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06. Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 150 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

COMMITMENT J: CONSTRUCTION PRACTICES FOR TEMPORARY WORKS IN WATERWAYS OF THE U.S.

The Contractor is advised that special construction measures must be taken to ensure that the waterways of the U.S. are not impacted.

Action Taken/Required:

Excavation will not occur below the ordinary high-water elevation in waterways outside of caissons, cribs, cofferdams, steel piling, or sheeting. The natural streambed will not be disturbed unless specified by the plans and under the observation of the Project Engineer. Refer to the Table of U.S. Waterways to Protect for ordinary high-water elevations. Any structure work over or within the waterway will be constructed according to Section 7.18 C of the Specifications.

All dredged or excavated materials will be placed at a site above the ordinary high-water elevation in a confined area (not classified as a wetland) that is a minimum of 50 feet away from concentrated flows of storm water, drainage courses, and inlets to prevent return of such material to the waterway.

The construction of temporary work platforms, crossings, or berms below the ordinary high-water elevation will be allowed if all material placed below the ordinary high-water elevation consists of Class B or larger riprap.

All temporary caissons, cribs, cofferdams, steel piling, sheeting, work platforms, crossings, and berms will be removed with minimal disturbance to the streambed. Proper construction practices will be used to minimize increases in suspended solids and turbidity in the waterway.

Bridge berms, wing dams, traffic diversions, channel reconstruction, stream diversions, grading, etc. will be constructed in close conformity with the plans to ensure that the hydraulic capacity of the waterway is not changed.

Temporary waterway crossings required for the Contractor’s construction operations will be constructed with an adequate drainage structure size and minimum fill height to reduce the potential for upstream flooding. The Contractor will be responsible for sizing the temporary drainage structure for these crossings.

All temporary works in waterways of the US are required to be covered in the Corp of Engineers 404 Permit. At the time of the preconstruction meeting, the Contractor will submit documentation for all temporary works for the purpose of complying with the 404 Permit requirements in accordance with Section 423.3 A of the Specifications.

If an on-site construction crossing is used at Sta. 10+00 the temporary crossing will need to be designed so it will not increase the Q<sub>100</sub> water surface elevation. The Contractor will submit the proposed temporary crossing geometric layout and structure size at Sta. 10+00 to the Project Engineer during the preconstruction meeting. This information will be forwarded to the Engineer for review. Construction of the temporary crossing is not allowed until approval of the proposal is obtained from the Engineer.

Table of U.S. Waterways to Protect

| Station | Waterway        | Ordinary High-Water Elevation |
|---------|-----------------|-------------------------------|
| 10+00   | Lodgepole Creek | 2362.3                        |

Stream channel excavation within “Waters of the US” is subject to USACE regulatory jurisdiction. Stream channel excavation cannot exceed the permitted quantities and/or surface area. The 404 Permit is included in the Special Provisions.

The Contractor will take all precautions necessary to prevent any incidental discharges associated with the excavation and hauling of material from the stream channel. This pertains to any excavation operations such as, foundation, pier, or abutment excavation, channel cleanout, excavation for riprap protection, and removal of any temporary fill associated with construction activities.

COMMITMENT N: SECTION 404 PERMIT

The SDDOT has obtained a Section 404 Permit from the USACE for the permanent actions associated with this project.

Action Taken/Required:

The Contractor will comply with all requirements contained in the Section 404 Permit.

The Contractor will also be responsible for obtaining a Section 404 Permit for any dredge, excavation, or fill activities associated with material sources, storage areas, waste sites, and Contractor work sites outside the plan work limits that affect wetlands, floodplains, or waters of the United States.

PERKINS COUNTY REQUIREMENTS

The County will be responsible for the following items without federal participation:

- 1) Right of way acquisition.
- 2) Temporary and permanent easements.
- 3) Coordination of any utility adjustments.
- 4) Furnish and install final surfacing.
- 5) Furnish and install permanent signing.
- 6) Furnish and install temporary and/or permanent fencing.
- 7) Remove silt fence in permanently seeded areas.
- 8) Wetland mitigation.
- 9) Maintenance of existing off-site detour.

Detour Signing

The Contractor will be aware that there are existing Detour Route Signs that require modification to the layout shown in these plans. The existing truck detour route along Haynes Road and 113<sup>th</sup> Street will be upgraded for all traffic. There are advance warning signs 14.5 miles north at the intersection of SD Highway 12 and 5.3 miles north at intersection of Summerville Rd. There are Truck Detour direction indicators at the intersection of White Butte Rd. and 113<sup>th</sup> St, and 113<sup>th</sup> St and Haynes Rd.

MACHINE CONTROL GRADING & MODEL INFORMATION

Electronic design files are made available by the SDDOT Bid Letting Office through the SDDOT's SharePoint Directory for Contractors. The roadway subgrade model(s) xml file(s) provided for this project includes the following highway features: intersecting roads and entrances, inslope transitions at pipes and box culverts.

Highway features not included in the roadway subgrade model(s) xml file(s) are the following: undercutting, muck excavation, and unstable excavation.

These files are provided for informational purposes only. The information shown in the plans will govern over the provided electronic information. The Contractor assumes the risk of error if the information is used for any purposes for which the information was not intended. The Contractor assumes all risk of any assumptions or manipulations made of the electronic information.

SHRINKAGE FACTOR: Embankment 35%

INSLOPE TRANSITIONS

Inslope transitions will be required at the Reinforced Box Culvert. Refer to standard plate 120.05 for details.

TYPE II FIELD LABORATORY

The Contractor will provide high-speed broadband internet connection to the field lab. The multiport internet connection may be hardwired, through a cellular method, or other approved service that allows Wi-Fi connection. Prior to obtaining the internet connection, the Contractor will submit the internet connection's technical data to the Area Office to check for compatibility with the state's computer equipment. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. The internet service will be incidental to the contract unit price per each for "Type II Field Laboratory".

UTILITIES

The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor will contact each utility owner and confirm the status of all existing and new utility facilities.

SD 1 Call: 1-800-781-7474

The Perkins County Highway Superintendent is Cody Green: 1-605-244-5629

Grand Electric Coop Inc.  
801 Coleman Avenue  
P.O. Box 39  
Bison, South Dakota 57620  
Office (605) 244-5211  
After Hours Outages (877) 244-5211

West River Cooperative Telephone  
801 Coleman Avenue  
P.O. Box 39  
Bison, South Dakota 57620  
(605) 244-5213

Perkins County Rural Water System  
Inc.  
104 West Main Street  
P.O. Box 160  
Bison, SD 57620  
(605) 244-5608



GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste.

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks, and approaches are included in the earthwork balance notes on the profile sheets.

Special ditch grades and other sections of the roadway different than the typical section will be constructed to the limits shown on the cross sections. If

significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

Generally, all shallow inlet and outlet ditches as noted on the plan sheets will be cut with a 10-foot wide bottom with 5:1 backslopes. However, the Engineer may direct the Contractor to adjust the ditch width for proper alignment with the drainage structure.

Temporary fence and/or permanent fence will be placed ahead of the grading operation unless otherwise directed by the Engineer.

CLEARING

Before clearing activities begin, the Contractor will contact the Engineer to determine the limits of clearing for the project. If the trees or shrubs that are supposed to remain within the limits of work are damaged or destroyed by the Contractor, the Contractor will replace them with the same size and type at the Contractor's expense.

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

When plan quantities are used for payment, the Unclassified Excavation quantity will be used for final payment and the plans quantity of Topsoil and salvaged surfacing items listed in the Table of Unclassified Excavation will not be adjusted according to field measurements.

The following paragraphs are general earthwork information and information in regard to computing the Unclassified Excavation quantity when final cross sections are taken in the field:

The Unstable Material Excavation quantity is included in the Excavation quantity listed in the Table of Unclassified Excavation. When finaling a project, the Unstable Material Excavation quantity will be added to the Excavation quantity to compute the Unclassified Excavation quantity.

The Topsoil quantity in the Table of Unclassified Excavation is an estimate. When finaling a project, the total quantity of field measured Topsoil will be used in place of the estimated Topsoil quantity. The quantity of Topsoil from the cuts will be paid for twice as Unclassified Excavation, as it will be in both the Excavation and Topsoil quantities. This will be full compensation for Excavation, which includes necessary undercutting to provide space for placement of topsoil.

The Excavation quantities from individual balances and the Table of Unclassified Excavation have been reduced by the volume of in place surfacing that will be removed and/or salvaged.

Salvaged Asphalt Mix and Granular Base Material will be paid for at the contract unit price per ton and is also included in and paid for once as Unclassified Excavation. As shown in the Table of Unclassified Excavation, the estimated quantity of 303 cubic yards of Salvaged Asphalt Mix and Granular Base Material from fill sections will be added to the Excavation quantity to determine the Unclassified Excavation quantity. The quantity of Salvaged Asphalt Mix and Granular Base Material from cut sections will not be added to the Excavation quantity as it is already in the cuts on the final cross sections.

TABLE OF UNCLASSIFIED EXCAVATION

|                                                               |        |
|---------------------------------------------------------------|--------|
|                                                               | (CuYd) |
| Excavation                                                    | 214    |
| Topsoil                                                       | 515    |
| Exc. for RCBC Installation                                    | 5873   |
| Salvaged and Stockpile Asphalt Mix and Granular Base Material | 303    |
| Total:                                                        | 6905   |

CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor will provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material will be approved by the Engineer. "Contractor Furnished Borrow Excavation" will be paid for at the contract unit price for "Contractor Furnished Borrow Excavation" The "Contractor Furnished Borrow Excavation" quantity is an estimate. When finaling a project, the total quantity of provided material will be used in place of the estimated quantity.

Restoration of the Contractor furnished borrow excavation site will be the responsibility of the Contractor.

TABLE OF CONTRACTOR FURNISHED BORROW

|                             |        |
|-----------------------------|--------|
|                             | (CuYd) |
| Contractor Furnished Borrow | 7605   |
| Total:                      | 7605   |

SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

An estimated 583 tons (303 Cubic Yards) of asphalt mix and granular base material will be salvaged from the entire length of the existing highway and stockpiled.

The quantity of salvage asphalt mix and granular base material may vary from the plans. The cost for all labor, materials, and equipment required to process, remove, haul, and stockpile of the salvaged surfacing will be included in the contract unit price per ton for "Salvage and Stockpile Asphalt Mix and Granular Base Material". No adjustment will be made to the contract unit price for variations of the quantity of "Salvage and Stockpile Asphalt Mix and Granular Base Material." The quantity will be adjusted to the quantity that is scaled and placed on the roadway as base course salvaged asphalt mix.

The rate of salvageable material is based on a 4 inch depth of asphalt mix and a 6 inch depth of granular base. The salvaged asphalt mix and granular mix are to be uniformly blended to the satisfaction of the Engineer prior to or during the stockpiling process.

"Base Course, Salvaged Asphalt Mix" will be obtained from the Salvaged and Stockpiled Asphalt Mix and Granular Base Material and may be used without further testing.

The cost for all labor, materials, and equipment needed to haul, install, and compact the salvaged surfacing will be included in the contract unit price per ton for "Base Course, Salvaged Asphalt Mix". Plan's quantity will be used for this contract item without further field measurement.

If the quantity of salvaged material needs to be weighed or measured in the stockpile by the Engineer then the conversion from Tons to CuYd is 1.875 Tons per Cubic Yard.

New Base Course will be installed on top of Salvaged material.

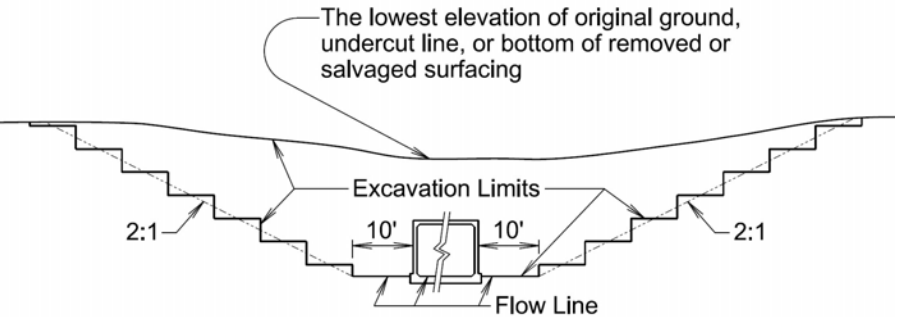
The County will be responsible for the proper and timely placement of final surfacing on the completed placed salvaged asphalt mix and base course. Subgrade damaged caused by either improper or delayed surfacing by the county will be the responsibility of the County.

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Included in the quantity of "Unclassified Excavation" are 5873 cubic yards of excavation for installation of reinforced concrete box culverts.

All work necessary to excavate a trench for installation of reinforced concrete box culverts including labor, equipment, and incidentals will be incidental to the contract unit price per cubic yard for "Unclassified Excavation". Payment for excavation of reinforced concrete box culverts will be based only on plans quantity and measurement of these excavation quantities during construction will not be performed.

The excavation quantities for installation of reinforced concrete box culverts are not included with the earthwork balance quantities on the plans profile sheets. The quantities computed for excavation of the reinforced concrete box culverts are based on the limits shown in the drawing below.



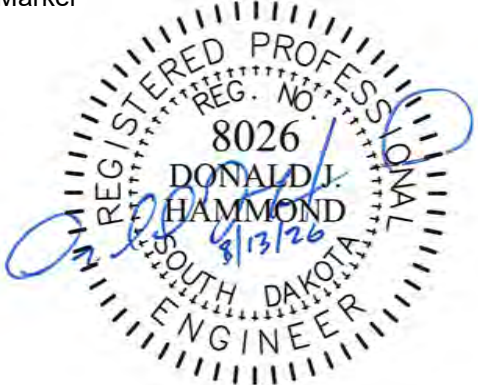
SALVAGE DELINEATORS

All delineators listed for salvage in the Table of Salvage Delineators will become property of Perkins County and will have the existing posts, bases, and signs dismantled and stockpiled within the right-of-way. The Contractor will contact the Perkins County Highway Superintendent, Cody Green, at 605-244-5629 for pick-up of salvaged materials. All bolts, nuts, and washers will be placed in individual containers. Wooden posts will be stockpiled separately from steel posts. All delineators listed for salvage will be handled with care so that the signs are not damaged during removal or transport. The Contractor will replace and pay for any salvaged delineators damaged in their care.

All costs for labor and equipment necessary to remove, dismantle, and stockpile delineators within the right-of-way will be incidental to the contract unit price per each for Salvaged Delineator. The quantity of delineators to be salvaged is shown in the Table of Salvage Delineators. The plans quantity is shown as per assembly. Payment for salvaging delineators will be paid per assembly at the contract unit price per each for "Salvage Delineator".

TABLE OF SALVAGE DELINEATORS

|                      |                      |
|----------------------|----------------------|
| Sta. 7+34 – 12' Lt.  | Delineator           |
| Sta. 7+34 – 13' Rt.  | Delineator           |
| Sta. 7+84 – 12' Lt.  | Delineator           |
| Sta. 7+84 – 13' Rt.  | Delineator           |
| Sta. 8+34 – 12' Lt.  | Delineator           |
| Sta. 8+34 – 13' Rt.  | Delineator           |
| Sta. 8+84 – 12' Lt.  | Delineator           |
| Sta. 8+84 – 13' Rt.  | Delineator           |
| Sta. 9+33 – 12' Lt.  | Type 3 Object Marker |
| Sta. 9+33 – 13' Rt.  | Type 3 Object Marker |
| Sta. 10+69 – 13' Lt. | Type 3 Object Marker |
| Sta. 10+69 – 13' Rt. | Type 3 Object Marker |
| Sta. 11+18 – 13' Lt. | Delineator           |
| Sta. 11+18 – 13' Rt. | Delineator           |
| Sta. 11+68 – 13' Lt. | Delineator           |
| Sta. 11+68 – 13' Rt. | Delineator           |
| Sta. 12+18 – 13' Lt. | Delineator           |
| Sta. 12+18 – 13' Rt. | Delineator           |
| Sta. 12+68 – 13' Lt. | Delineator           |
| Sta. 12+68 – 13' Rt. | Delineator           |



TEMPORARY FENCE

The Contractor will verify the location of the temporary fence with the landowner prior to installation of the fence.

PLACING TOPSOIL

The thickness will be approximately 4 inches within the right-of-way and 6 inches on temporary easements.

The estimated amount of topsoil to be placed is as follows:

|         |    |         |                |
|---------|----|---------|----------------|
| Station | to | Station | Topsoil (CuYd) |
| 7+50    |    | 13+00   | 515            |
| Total:  |    |         | 515            |

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include a minimum 25% the fungal species *Rhizophagus intraradices*. The remaining 75% may include other endomycorrhizal fungal species.

MYCORRHIZAL INOCULUM (Contd.)

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

The Mycorrhizal Inoculum provided will be from the approved product list. The approved product list may be viewed at the following internet site:

<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application. The Fertilizer provided will be from the approved product list. The approved product list may be viewed at the following internet site:

<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

MULCHING (GRASS HAY OR STRAW)

An additional 2 tons of Grass Hay or Straw Mulch has been added to the Estimate of Quantities for temporary erosion control on areas determined by the Engineer during construction.

TABLE OF CONSTRUCTION STAKING FOR PROJECT BRF-B 6399(190)

| Roadway and Description                 | Begin Station | End Station | Number of Lanes | Length (Ft) | Grade Staking |             |                 |                                 | Miscellaneous Staking Quantity (Mile) | Slope Staking Quantity (Mile) | Structure Staking Quantity (Each) |
|-----------------------------------------|---------------|-------------|-----------------|-------------|---------------|-------------|-----------------|---------------------------------|---------------------------------------|-------------------------------|-----------------------------------|
|                                         |               |             |                 |             | Length (Mile) | Lane Factor | *Sets of Stakes | **Grade Staking Quantity (Mile) |                                       |                               |                                   |
| White Butte Road (2 Lanes Asphalt Road) | 7+50.00       | 13+00.00    | 2               | 550         | 0.104         | 1g          | 1               | 0.104                           | 0.104                                 | 0.104                         | -                                 |
| Structure No. 53-281-151 (CIP RCBC)     | 9+78.88       | 10+21.13    | -               | -           | -             | -           | -               | -                               | -                                     | -                             | 1                                 |
| Totals:                                 |               |             |                 |             |               |             |                 | 0.104                           | 0.104                                 | 0.104                         | 1                                 |

\* 1 = Top of Subgrade Blue Top Stakes Only (AC Pavement)  
\*\* Grade Staking Quantity = (Length) x (Lane Factor) x (Sets of Stakes)

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways, temporary easements under cultivation, and areas designated to be sod.

Type F Permanent Seed Mixture will consist of the following:

| Grass Species                                                                     | Variety                                 | Pure Live Seed (PLS) (Pounds/Acre) |
|-----------------------------------------------------------------------------------|-----------------------------------------|------------------------------------|
| Western Wheatgrass                                                                | Arriba, Flintlock, Rodan, Rosana, Walsh | 7                                  |
| Green Needlegrass                                                                 | Lodorm, AC Mallard Ecovar               | 4                                  |
| Sideoats Grama                                                                    | Butte, Pierre                           | 3                                  |
| Blue Grama                                                                        | Bad River                               | 2                                  |
| Oats or Spring Wheat: April through May;<br>Winter Wheat: August through November |                                         | 10                                 |
| Total:                                                                            |                                         | 26                                 |

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment will be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

An estimated quantity of erosion control wattles will remain on the project until vegetation has been established. It is estimated that some of the erosion control wattles will remain on the project to decompose.

An additional quantity of 12" Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control in highway ditch channels and as an alternative to low flow or high flow silt fence at wetland areas adjacent to the highway.

The erosion control wattle provided will be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

TABLE OF EROSION CONTROL WATTLE

| Station              | Location            | Diameter (Inch) | Quantity (Ft) |
|----------------------|---------------------|-----------------|---------------|
| 8+73 to 9+62 R       | Inslope             | 12              | 100           |
| 8+85 to 9+71 L       | Inslope             | 12              | 100           |
| 10+31 to 11+20 R     | Inslope             | 12              | 100           |
| 10+39 to 11+24 R     | Inslope             | 12              | 100           |
| *10+65 to 11+24 L&R  | Stockpile Perimeter | 12              | 180           |
| Additional Quantity: |                     | 12              | 120           |
| *Temporary           |                     | Total:          | 700           |

EROSION CONTROL BLANKET

Erosion control blanket will be installed 16 feet wide at the locations noted in the table and at locations determined by the Engineer during construction.

The erosion control blanket provided will be from the approved product list. The approved product list for erosion control blanket may be viewed at the following internet site:

<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

An additional quantity of Type 2 Erosion Control Blanket has been added to the Estimate of Quantities for temporary erosion control.

TABLE OF EROSION CONTROL BLANKET

| Station              | Location    | Type | Quantity (SqYd) |
|----------------------|-------------|------|-----------------|
| 9+26 to 9+70 L       | SW Quadrant | 2    | 160             |
| 9+29 to 9+73 R       | SE Quadrant | 2    | 160             |
| 10+26 to 10+70 R     | NE Quadrant | 2    | 160             |
| 10+30 to 10+74 L     | NW Quadrant | 2    | 160             |
| Additional Quantity: |             | 2    | 160             |

Total Type 2 Erosion Control Blanket: 800

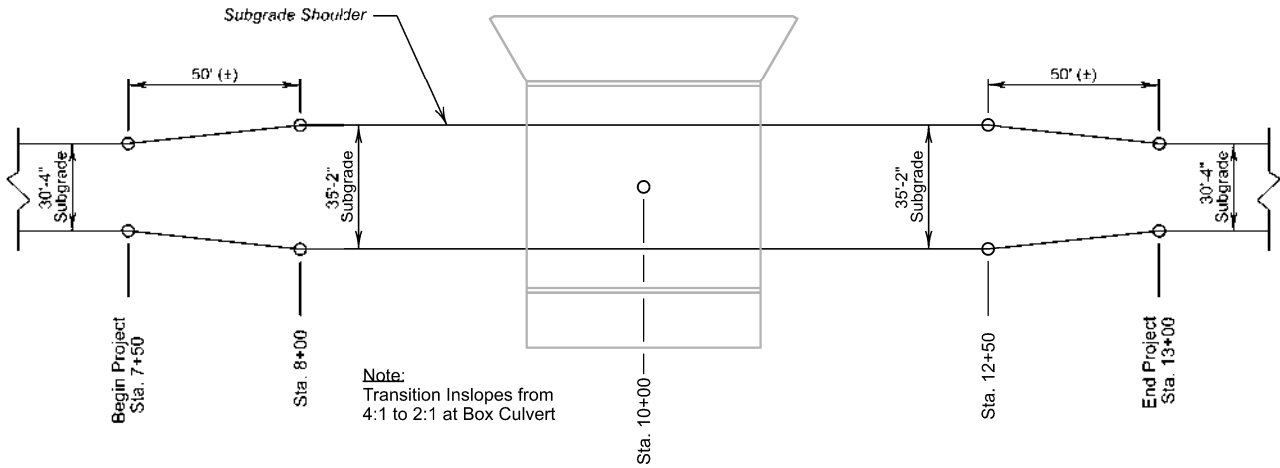
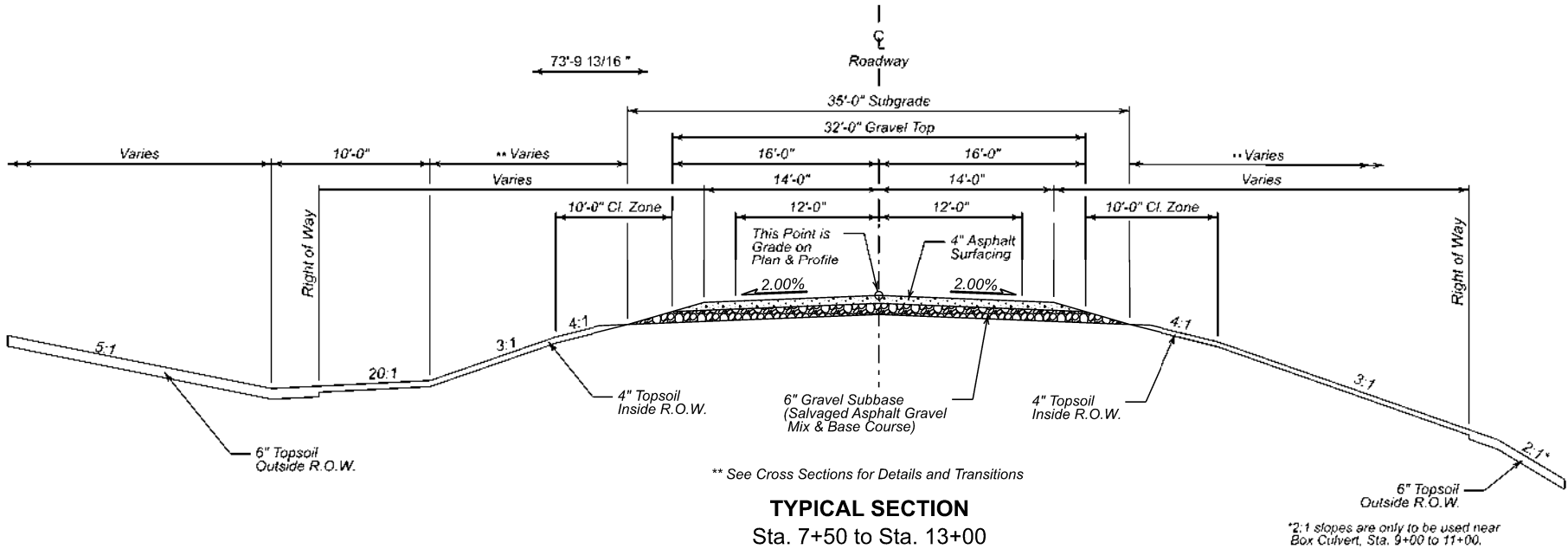


| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 8         | 36           |

| HORIZONTAL ALIGNMENT |          |           |            |                   |
|----------------------|----------|-----------|------------|-------------------|
| Element              | Station  | Northing  | Easting    | Tangent Direction |
| POB                  | -4+77.09 | 699590.89 | 1362458.37 |                   |
|                      |          |           |            | N 01°48'36" E     |
| POE                  | 32+82.65 | 703348.75 | 1362577.15 |                   |

The coordinates shown on this sheet are based on the South Dakota  
State Plane Coordinate System, North Zone (NAD 88) SF = 0.999946710

TYPICAL SECTION AND ALIGNMENT DATA

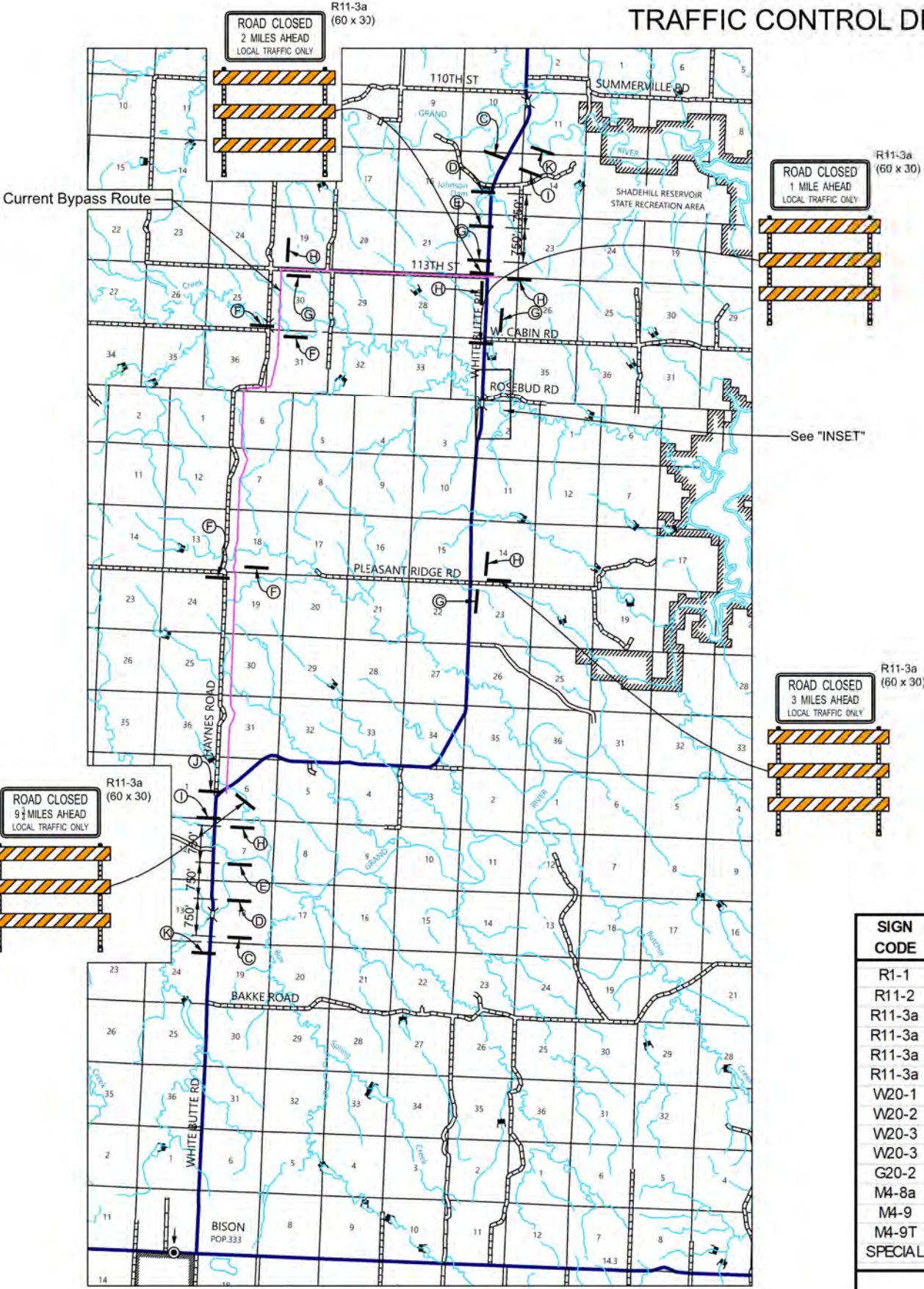


**TYPICAL ROADWAY TRANSITION DETAIL**  
(Not to Scale)

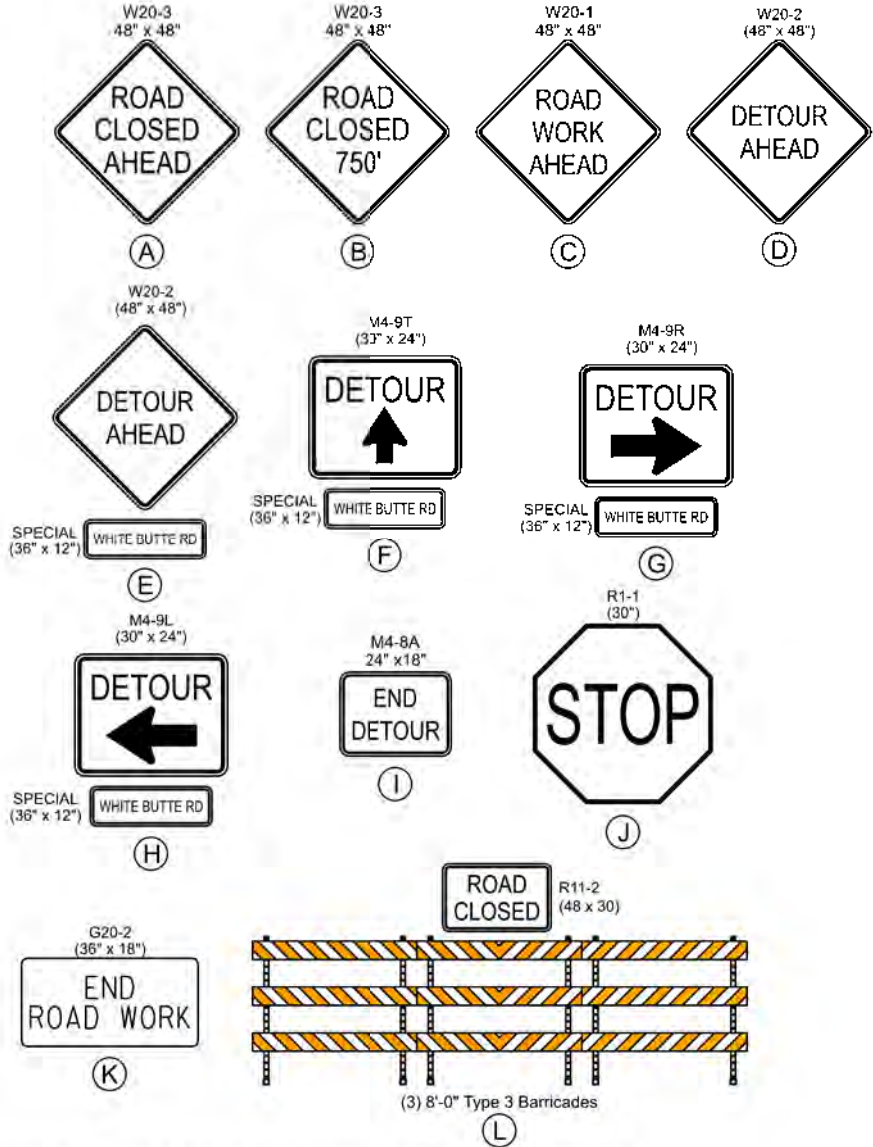


| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 9         | 36           |

TRAFFIC CONTROL DETAILS



AREA MAP



ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

| SIGN CODE | SIGN DESCRIPTION                                 | CONVENTIONAL ROAD                            |           |               |      |
|-----------|--------------------------------------------------|----------------------------------------------|-----------|---------------|------|
|           |                                                  | NUMBER                                       | SIGN SIZE | SQFT PER SIGN | SQFT |
| R1-1      | STOP                                             | 1                                            | 30"       | 5.2           | 5.2  |
| R11-2     | ROAD CLOSED                                      | 2                                            | 48" x 30" | 10.0          | 20.0 |
| R11-3a    | ROAD CLOSED 9 3/4 MILES AHEAD LOCAL TRAFFIC ONLY | 1                                            | 60" x 30" | 12.5          | 12.5 |
| R11-3a    | ROAD CLOSED 3 MILES AHEAD LOCAL TRAFFIC ONLY     | 1                                            | 60" x 30" | 12.5          | 12.5 |
| R11-3a    | ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY     | 1                                            | 60" x 30" | 12.5          | 12.5 |
| R11-3a    | ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY      | 1                                            | 60" x 30" | 12.5          | 12.5 |
| W20-1     | ROAD WORK AHEAD                                  | 2                                            | 48" x 48" | 16.0          | 32.0 |
| W20-2     | DETOUR AHEAD                                     | 4                                            | 48" x 48" | 16.0          | 64.0 |
| W20-3     | ROAD CLOSED AHEAD                                | 2                                            | 48" x 48" | 16.0          | 32.0 |
| W20-3     | ROAD CLOSED 750'                                 | 2                                            | 48" x 48" | 16.0          | 32.0 |
| G20-2     | END ROAD WORK                                    | 2                                            | 36" x 18" | 4.5           | 9.0  |
| M4-8a     | END DETOUR                                       | 2                                            | 24" x 18" | 3.0           | 6.0  |
| M4-9      | DETOUR (ARROW L or R)                            | 9                                            | 30" x 24" | 5.0           | 45.0 |
| M4-9T     | DETOUR (ARROW T)                                 | 4                                            | 30" x 24" | 5.0           | 20.0 |
| SPECIAL   | WHITE BUTTE RD                                   | 15                                           | 36" x 12" | 3.0           | 45.0 |
|           |                                                  | CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT |           |               |      |
|           |                                                  | 360.2                                        |           |               |      |

INSET

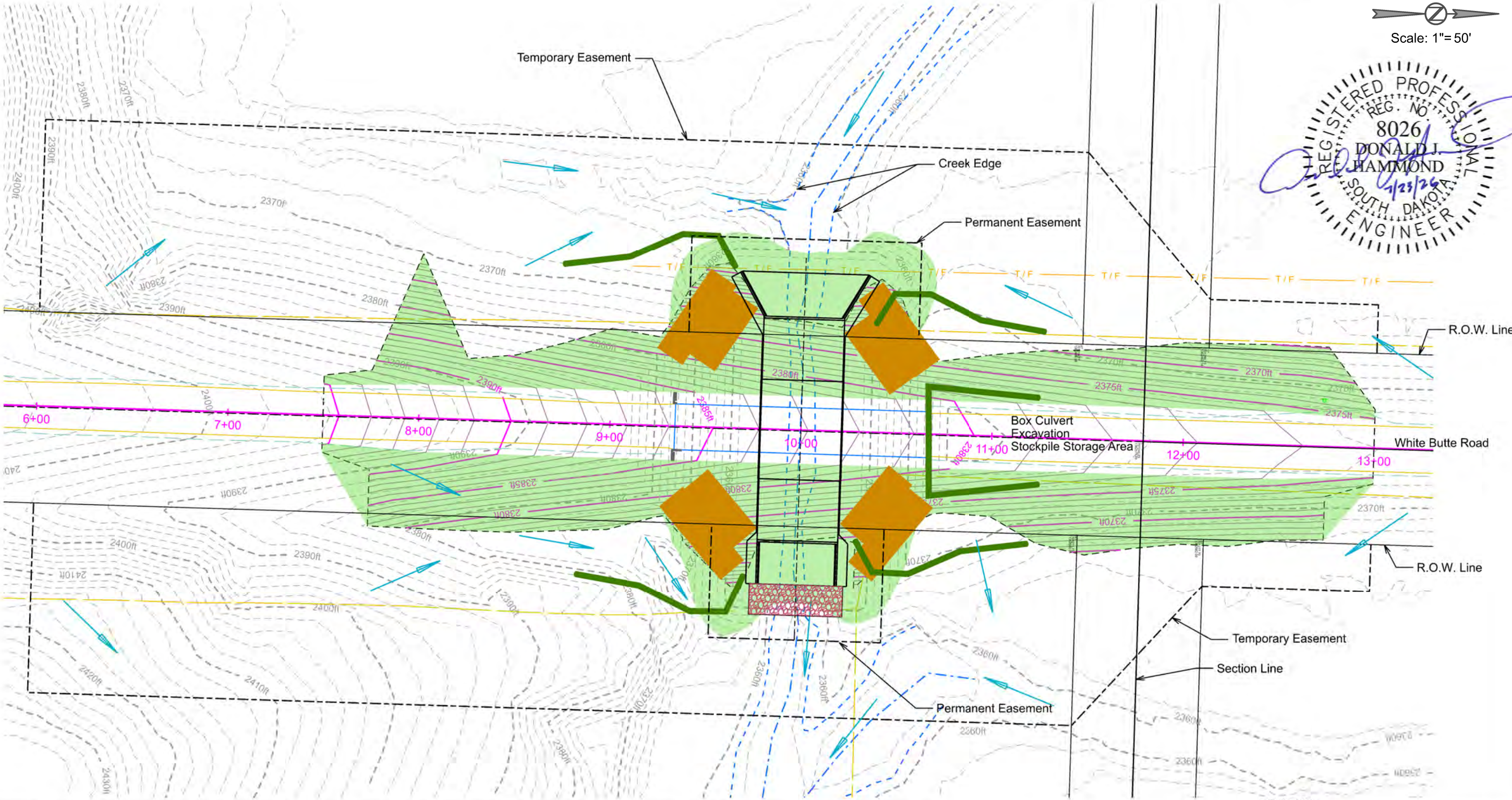


EROSION AND SEDIMENT CONTROL DETAILS - WHITE BUTTE ROAD

FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 10        | 36           |

Scale: 1"= 50'



Erosion Control Wattles - Temporary

| Station | L/R   | Dia (In.) | Location            | Quantity (Ft.) |
|---------|-------|-----------|---------------------|----------------|
| 10+65   | L & R | 12        | Stockpile Perimeter | 180            |
|         |       |           | Additional Quantity | 40             |
|         |       |           | Total:              | 220            |

Erosion Control Wattles - Permanent

| Station | L/R | Dia (In.) | Location            | Quantity (Ft.) |
|---------|-----|-----------|---------------------|----------------|
| 8+75    | L   | 12        | Ditch Bottom        | 100            |
| 8+85    | R   | 12        | Ditch Bottom        | 100            |
| 10+30   | R   | 12        | Ditch Bottom        | 100            |
| 10+40   | L   | 12        | Ditch Bottom        | 100            |
|         |     |           | Additional Quantity | 80             |
|         |     |           | Total:              | 480            |

Erosion Control Blanket

| Station to Station | L/R | Location            | Quantity (Sq. Yd.) |
|--------------------|-----|---------------------|--------------------|
| 9+23 to 9+75       | L   | SW Quadrant         | 160                |
| 9+27 to 9+78       | R   | SE Quadrant         | 160                |
| 10+21 to 10+71     | R   | NE Quadrant         | 160                |
| 10+22 to 10+70     | L   | NW Quadrant         | 160                |
|                    |     | Additional Quantity | 160                |
|                    |     | Total:              | 800                |

LEGEND:

- 12" Dia. Erosion Control Wattles
- Type F Permanent Seed Mixture
- Class B Riprap
- Type 2 Erosion Control Blanket

Note: Any areas disturbed within the temporary easement areas will be seeded as necessary.

**STORMWATER POLLUTION PREVENTION PLAN CHECKLIST**  
*(The numbers left of the title headings are **reference numbers** to the **GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES** (Stormwater Permit))*

**5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION**

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

**5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES**

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
  - ☐ Clearing and grubbing
  - ☒ Excavation/borrow
  - ☒ Grading and shaping
  - ☒ Filling
  - ☐ Other (describe):
- **5.3 (3b): Total Project Area** 4.40 Acres
- **5.3 (3b): Total Area to be Disturbed** 1.50 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 1.50 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** 95
- **5.3 (3d): Description of Vegetative Cover** Prairie/Pasture Grasses, small trees and/or shrubs.
- **5.3 (3e): Soil Properties:** AASHTO Soil Classification A-2, A-4, A-6 Stratified loamy fine sand to loam; silt loam.
- **5.3 (3f): Name of Receiving Water Body/Bodies** Lodgepole Creek
- **5.3 (3g): Location of Construction Support Activity Areas** On-Site

**5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES**

The Contractor will enter the Estimated Start Date.

| Description                                              | Estimated Start Date |
|----------------------------------------------------------|----------------------|
| Install perimeter protection where runoff may exit site. |                      |
| Install channel and ditch bottom protection.             |                      |
| Clearing and grubbing.                                   |                      |
| Salvage and Stockpile Asphalt and Granular Base          |                      |
| Remove and stockpile topsoil.                            |                      |
| Install perimeter protection around stockpiles.          |                      |
| Stabilize disturbed areas.                               |                      |
| Install RCBC and rough grade roadway.                    |                      |
| Final grading.                                           |                      |
| Final paving.                                            |                      |
| Install riprap for RCBC                                  |                      |
| Removal of protection devices.                           |                      |
| Reseed areas disturbed by removal activities.            |                      |

**5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES**  
All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

| Perimeter Controls (See Detail Plan Sheets)                                |                      |
|----------------------------------------------------------------------------|----------------------|
| Description                                                                | Estimated Start Date |
| <input type="checkbox"/> Natural Buffers (within 50 ft of Waters of State) |                      |
| <input type="checkbox"/> Silt Fence                                        |                      |
| <input checked="" type="checkbox"/> Erosion Control Wattles                |                      |
| <input type="checkbox"/> Temporary Berm / Windrow                          |                      |
| <input type="checkbox"/> Floating Silt Curtain                             |                      |
| <input type="checkbox"/> Stabilized Construction Entrances                 |                      |
| <input type="checkbox"/> Entrance/Exit Equipment Tire Wash                 |                      |
| <input type="checkbox"/> Other:                                            |                      |

| Structural Erosion and Sediment Controls                                   |                      |
|----------------------------------------------------------------------------|----------------------|
| Description                                                                | Estimated Start Date |
| <input type="checkbox"/> Silt Fence                                        |                      |
| <input type="checkbox"/> Temporary Berm/Windrow                            |                      |
| <input checked="" type="checkbox"/> Erosion Control Wattles                |                      |
| <input type="checkbox"/> Temporary Sediment Barriers                       |                      |
| <input type="checkbox"/> Erosion Bales                                     |                      |
| <input type="checkbox"/> Temporary Slope Drain                             |                      |
| <input type="checkbox"/> Turf Reinforcement Mat                            |                      |
| <input checked="" type="checkbox"/> Riprap                                 |                      |
| <input type="checkbox"/> Gabions                                           |                      |
| <input type="checkbox"/> Rock Check Dams                                   |                      |
| <input type="checkbox"/> Sediment Traps/Basins                             |                      |
| <input type="checkbox"/> Culvert Inlet Protection                          |                      |
| <input type="checkbox"/> Transition Mats                                   |                      |
| <input type="checkbox"/> Median/Area Drain Inlet Protection                |                      |
| <input type="checkbox"/> Curb Inlet Protection                             |                      |
| <input type="checkbox"/> Interceptor Ditch                                 |                      |
| <input type="checkbox"/> Concrete Washout Facility                         |                      |
| <input type="checkbox"/> Work Platform                                     |                      |
| <input type="checkbox"/> Temporary Water Barrier                           |                      |
| <input type="checkbox"/> Temporary Water Crossing                          |                      |
| <input type="checkbox"/> Permanent Stormwater Ponds                        |                      |
| <input type="checkbox"/> Permanent Open Vegetated Swales                   |                      |
| <input type="checkbox"/> Natural Depressions to allow for Infiltration     |                      |
| <input type="checkbox"/> Sequential Systems that combine several practices |                      |
| <input type="checkbox"/> Other:                                            |                      |

FOR BIDDING PURPOSES ONLY

|                             |                 |           |              |
|-----------------------------|-----------------|-----------|--------------|
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| Dust Controls                                            |                      |
|----------------------------------------------------------|----------------------|
| Description                                              | Estimated Start Date |
| <input type="checkbox"/> Tarps & Wind impervious fabrics |                      |
| <input type="checkbox"/> Watering                        |                      |
| <input type="checkbox"/> Stockpile location/orientation  |                      |
| <input type="checkbox"/> Dust Control Chlorides          |                      |
| <input type="checkbox"/> Other                           |                      |

| Dewatering BMPs                                      |                      |
|------------------------------------------------------|----------------------|
| Description                                          | Estimated Start Date |
| <input type="checkbox"/> Sediment Basins             |                      |
| <input type="checkbox"/> Dewatering bags             |                      |
| <input type="checkbox"/> Weir tanks                  |                      |
| <input type="checkbox"/> Temporary Diversion Channel |                      |
| <input type="checkbox"/> Other:                      |                      |

**Stabilization Practices (See Detail Plan Sheets)**  
(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (**3.18**))

| Description                                                                 | Estimated Start Date |
|-----------------------------------------------------------------------------|----------------------|
| <input type="checkbox"/> Vegetation Buffer Strips                           |                      |
| <input type="checkbox"/> Temporary Seeding (Cover Crop Seeding)             |                      |
| <input checked="" type="checkbox"/> Permanent Seeding                       |                      |
| <input type="checkbox"/> Sodding                                            |                      |
| <input type="checkbox"/> Planting (Woody Vegetation for Soil Stabilization) |                      |
| <input checked="" type="checkbox"/> Mulching (Grass Hay or Straw)           |                      |
| <input type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)                  |                      |
| <input type="checkbox"/> Soil Stabilizer                                    |                      |
| <input type="checkbox"/> Bonded Fiber Matrix                                |                      |
| <input type="checkbox"/> Fiber Reinforced Matrix                            |                      |
| <input checked="" type="checkbox"/> Erosion Control Blankets                |                      |
| <input type="checkbox"/> Surface Roughening (e.g. tracking)                 |                      |
| <input type="checkbox"/> Other:                                             |                      |

**Wetland Avoidance**  
Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☒ No ☐ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

|                             |                 |           |              |
|-----------------------------|-----------------|-----------|--------------|
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5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure’s capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor’s Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in “DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES” above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

- **Material Management**
  - Housekeeping
    - Only needed products will be stored on-site by the Contractor.
    - Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
    - Products must be stored in original containers and labeled.
    - Material mixing will be conducted in accordance with the manufacturer’s recommendations.
    - When possible, all products will be completely used before properly disposing of the container off-site.
    - The manufacturer’s directions for disposal of materials and containers will be followed.
    - The Contractor’s site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
    - Dust generated will be controlled in an environmentally safe manner.
  - Hazardous Materials
    - Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
    - Original labels and material safety data sheets will be retained in a safe place to relay important product information.

- If surplus product must be disposed of, manufacturer’s label directions for disposal will be followed.
- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➤ **Spill Control Practices**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer’s recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor’s site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

➤ **Spill Response**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor’s site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.

- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent’s designee will be responsible for completing the spill reporting form and for reporting the spill to SDDANR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor’s site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

- **Waste Disposal**
  - All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.
- **Hazardous Waste**
  - All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.
- **Sanitary Waste**
  - Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

|                             |                 |           |              |
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5.3 (9): CONSTRUCTION SITE POLLUTANTS

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the heading “POLLUTION PREVENTION PROCEDURES” (check all that apply).

- ☒ Concrete and Portland Cement
- ☐ Detergents
- ☐ Paints
- ☒ Metals
- ☒ Bituminous Materials
- ☒ Petroleum Based Products
- ☐ Diesel Exhaust Fluid
- ☐ Cleaning Solvents
- ☐ Wood
- ☒ Cure
- ☐ Texture
- ☒ Chemical Fertilizers
- ☐ Other:

Product Specific Practices

- **Petroleum Products**  
All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- **Fertilizers**  
Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.
- **Paints**  
All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer’s instructions and any applicable state and local regulations.
- **Concrete Trucks**  
Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater discharges are anticipated during the course of this project (check all that apply).

- ☐ Discharges from water line flushing.
- ☐ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- ☒ Uncontaminated ground water associated with dewatering activities.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: SPILL NOTIFICATION

In the event of a spill, the Contractor’s site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDANR immediately **if any one of the following** conditions exists:
  - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
  - The release or spill causes an immediate danger to human health or safety
  - The release or spill exceeds 25 gallons
  - The release or spill causes a sheen on surface water
  - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
  - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
  - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
  - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.
- To report a release or spill, call SDDANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDANR within 14 days of the discharge.

5.4: SWPPP CERTIFICATIONS

➤ Certification of Compliance with Federal, State, and Local Regulations

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➤ South Dakota Department of Transportation

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature (See the General Permit, Section 7.4 (1))

➤ Prime Contractor

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

➤ Contractor Information:

- Prime Contractor Name: \_\_\_\_\_
- Contractor Contact Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- \_\_\_\_\_
- City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- Office Phone: \_\_\_\_\_ Field: \_\_\_\_\_
- Cell Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

➤ Erosion Control Supervisor

- Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- \_\_\_\_\_
- City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- Office Phone: \_\_\_\_\_ Field: \_\_\_\_\_
- Cell Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

➤ SDDOT Project Engineer

- Name: \_\_\_\_\_
- Business Address: \_\_\_\_\_
- Job Office Location: \_\_\_\_\_
- City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- Office Phone: \_\_\_\_\_ Field: \_\_\_\_\_
- Cell Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

➤ SDDANR Contact Spill Reporting

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➤ SDDANR Contact for Hazardous Materials.

- (605) 773-3153

➤ National Response Center Hotline

- (800) 424-8802.

➤ SDDANR Stormwater Contact Information

- SDDANR Stormwater (800) 737-8676
- Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

➤ 5.5 (1): Conditions Requiring SWPPP Modification

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part the SWPPP begins work on the site.
- When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SDDANR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

➤ 5.5 (2): Deadlines for SWPPP Modification

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

➤ 5.5 (3): Documentation of Modifications to the Plan

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

➤ 5.5 (4): Certification Requirements

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.

➤ 5.5 (5): Required Notice to Other Operators

If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the SDDOT Environmental Section in accordance with the DOT 298 Form.

FOR BIDDING PURPOSES ONLY

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PLAN

Sta. 7+50.0 Lt. & Rt. to Sta. 13+00.0 Lt. & Rt.  
Remove all Trees and Stumps  
within 75' of Centerline or Inside of the Right of Way  
(Clearing)

Sta. 9+34.2 to 10+66.0  
Remove 134'-0" Three Span  
Composite Girder Bridge  
(Incidental Work, Structure)

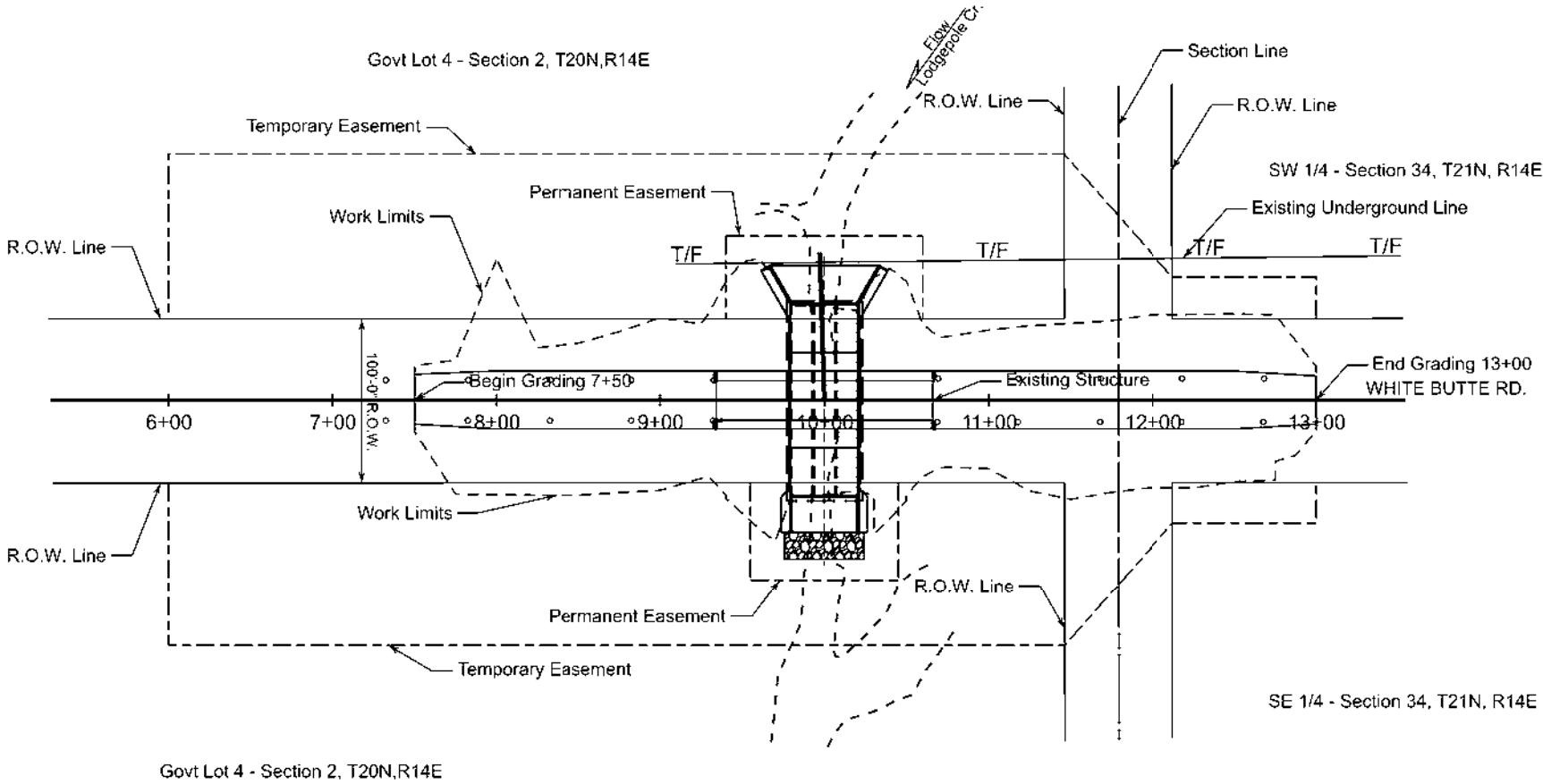
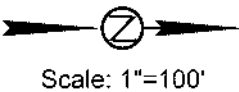
Sta. 8+58.37.17' Rt and 12+73.5 24' Lt  
Remove and Salvage Weight Limit Signs  
Near the Existing Bridge, 2 Total  
(Salvage Traffic Sign)

Sta. 7+34.2 to 12+66.0 Lt. & Rt.  
Salvage and Stockpile all Delineators  
Near the Existing Bridge, 16 Total  
(Salvage Delineator)

Sta. 10+00.00  
Install 3-13'x12'x118"  
Box Culvert (C.I.P.)  
DA = 76.3 Sq.Miles  
(See Structure Sheets)

Sta. 9+34.2 Lt. & Rt. and Sta. 10+66.0 Lt. & Rt.  
Salvage and Stockpile  
Type 3 Object Markers, 4 Total  
(Salvage Delineator)

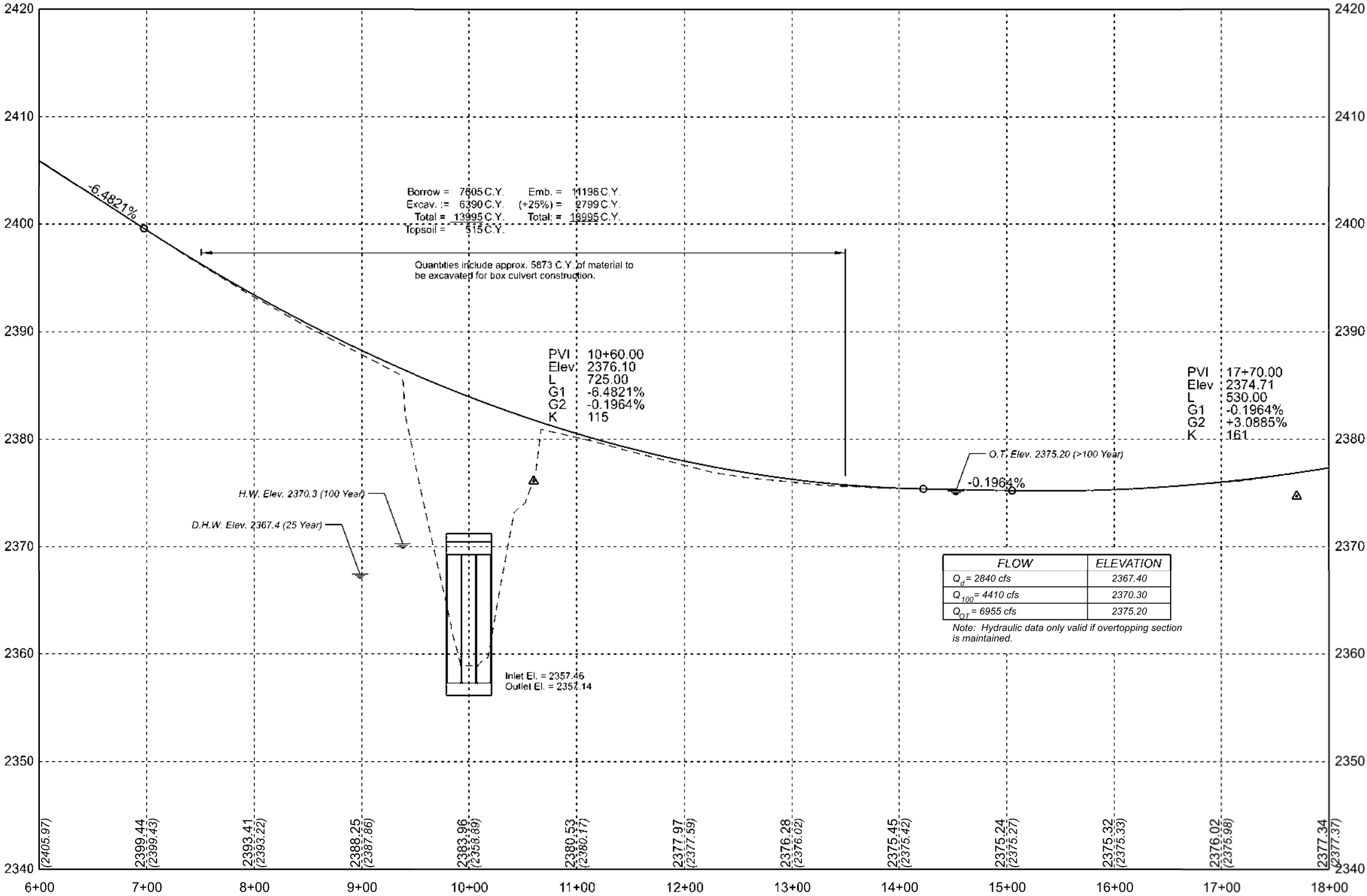
Sta. 9+75.8 to 10+24.2 Rt.  
Install Class B Riprap &  
Type B Drainage Fabric  
(See Structure Sheets)



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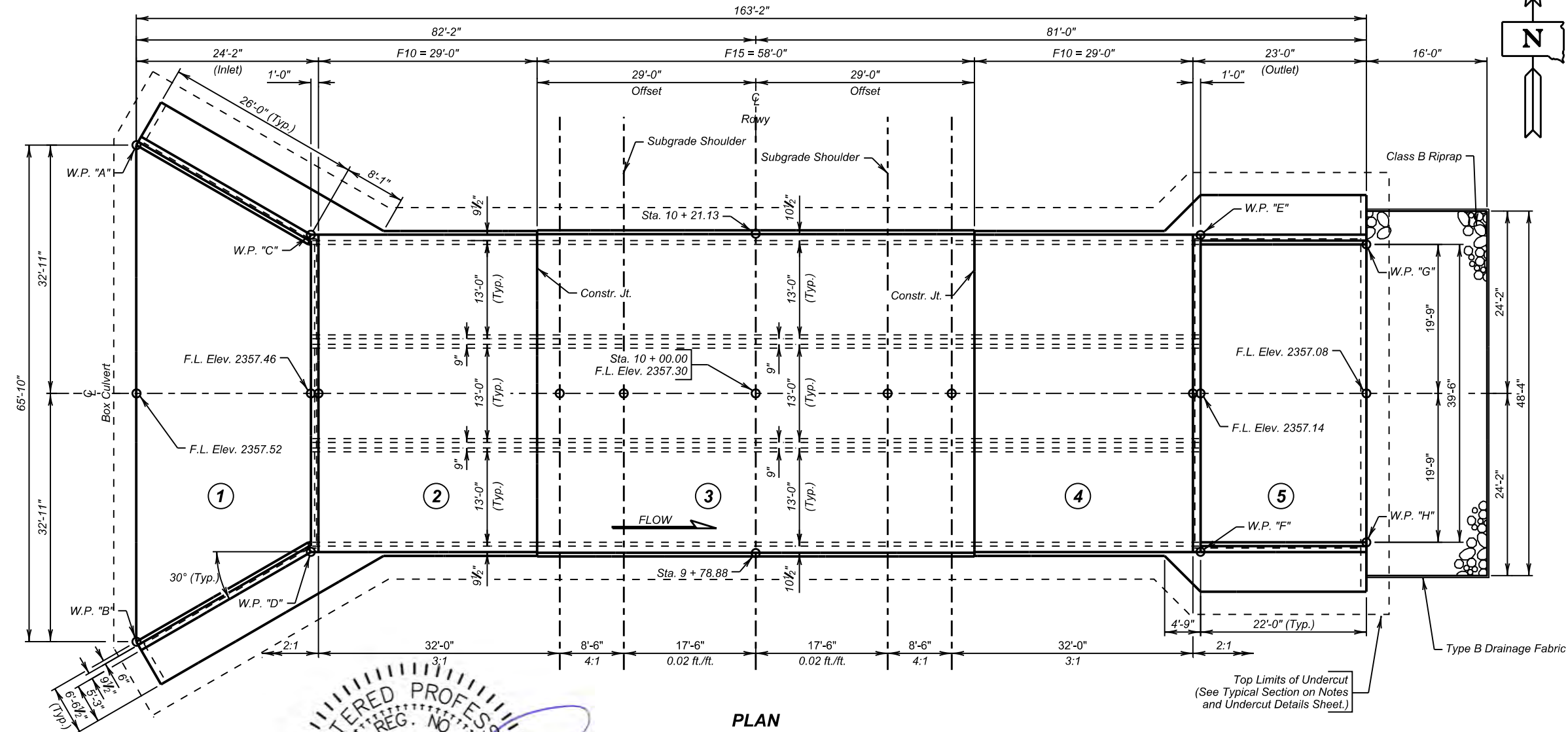
PROFILE



The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

FOR BIDDING PURPOSES ONLY

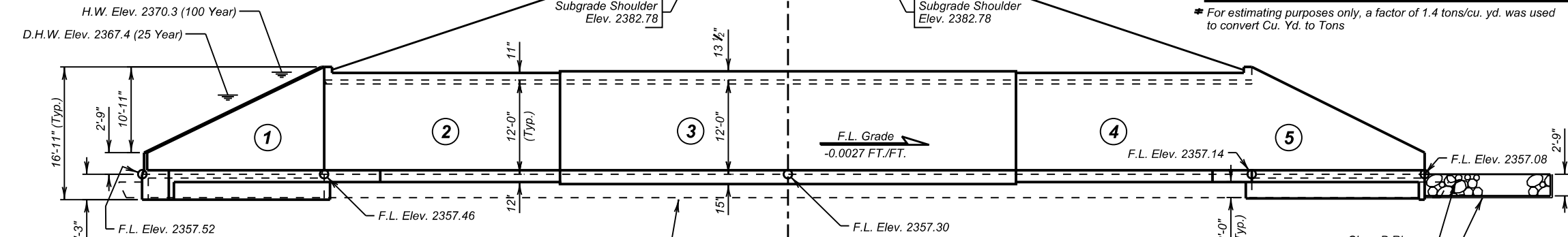
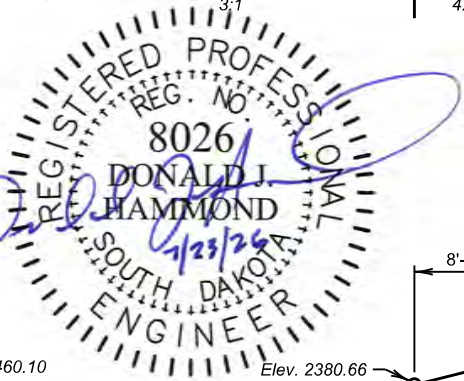
| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
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PLAN

**-X028-  
INDEX OF CULVERT SHEETS**

Sheet No. 1 - General Drawing and Quantities  
Sheet No. 2 - Notes and Undercut Details  
Sheet No. 3 - Inlet Details  
Sheet No. 4 - Outlet Details  
Sheet No. 5 - F10 Barrel End Section Details (29'-0")  
Sheet No. 6 - F15 Barrel Interior Section Details (58'-0")  
Sheet No. 7 - Details of Standard Plate No's. 460.02 & 460.10  
Sheet No. 8 - Details of Standard Plate No's. 620.12



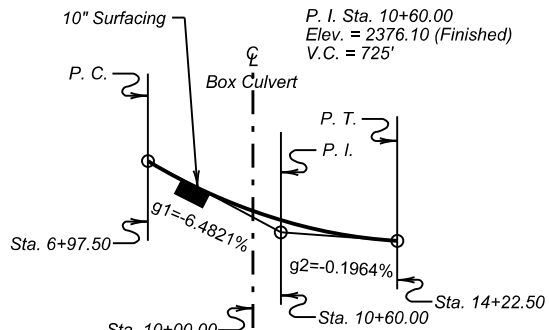
ELEVATION

NOTE:  
Box culvert flow line has been depressed 1' - 0" below channel flow line to accommodate aquatic organisms. The 1' - 0" depression will be allowed to fill in naturally over time.

Bottom Limits of Undercut  
(See Typical Section on Notes  
and Undercut Details Sheet.)

| ESTIMATED QUANTITIES              |         |          |
|-----------------------------------|---------|----------|
| ITEM                              | UNIT    | QUANTITY |
| Incidental Work, Structure        | L.S.    | L.S.     |
| Structure Excavation, Box Culvert | Cu. Yd. | 273      |
| Box Culvert Undercut              | Cu. Yd. | 674      |
| Class A45 Concrete, Box Culvert   | Cu. Yd. | 698.5    |
| Reinforcing Steel                 | Lb.     | 114939   |
| Class B Riprap                    | Ton     | 110.3    |
| Type B Drainage Fabric            | Sq. Yd. | 129      |
| Reinforcement Fabric (MSE)        | Sq. Yd. | 985      |

\* For estimating purposes only, a factor of 1.4 tons/cu. yd. was used to convert Cu. Yd. to Tons



VERTICAL CURVE DATA

| TABLE OF WORKING POINTS |            |          |
|-------------------------|------------|----------|
| W.P.                    | STATION    | OFFSET   |
| "A"                     | 10 + 32.92 | 82.17' L |
| "B"                     | 9 + 67.08  | 82.17' L |
| "C"                     | 10 + 21.00 | 59.00' L |
| "D"                     | 9 + 78.96  | 59.00' L |
| "E"                     | 10 + 21.00 | 59.00' R |
| "F"                     | 9 + 79.00  | 59.00' R |
| "G"                     | 10 + 19.75 | 81.00' R |
| "H"                     | 9 + 80.25  | 81.00' R |

HYDRAULIC DATA

|           |           |
|-----------|-----------|
| $Q_d$     | 2480 cfs  |
| $A_d$     | 323 sq ft |
| $V_d$     | 7.7 fps   |
| $Q_F$     | 2480 cfs  |
| $Q_{100}$ | 4410 cfs  |
| $Q_{OT}$  | 6955 cfs  |
| $V_{Max}$ | 13.0 fps  |

$Q_d$  = Design discharge for the proposed culvert based on 25 year frequency. El. 2367.4.

$Q_{OT}$  = Overtopping discharge and frequency >100 year recurrence interval. El. 2375.2 at Station 15+60.

$Q_F$  = Designated peak discharge for the basin approaching proposed project based on 25 year frequency.

$Q_{100}$  = Computed discharge for the basin approaching proposed project based on 100 year frequency. El. 2370.3.

$V_{Max}$  = Maximum computed outlet velocity for the proposed culvert based on 100 year frequency.

Note: The hydraulic data contained in these plans is valid only if the overflow section is maintained. Alteration of the overflow section will require re-analysis of the hydraulics at the site to determine its effect on public safety.

**GENERAL DRAWING AND QUANTITIES**  
FOR  
**3 - 13' X 12' BOX CULVERT**  
LODGEPOLE CREEK  
STA 10+00.00  
STR. NO. 53-281-151  
PCN 09M5  
0° SKEW  
GOV. LOT 4  
BRF-B 6399(190)  
HL-93

PERKINS COUNTY  
S. D. DEPT. OF TRANSPORTATION  
JULY 2026  
- X028 -

|                   |                   |                  |                 |
|-------------------|-------------------|------------------|-----------------|
| DESIGNED BY<br>DH | CK. DES. BY<br>SD | DRAFTED BY<br>ZW | BRIDGE ENGINEER |
|-------------------|-------------------|------------------|-----------------|

Plans By:  
Brosz Engineering, Inc.  
Consulting Engineers

NOTE:  
No suitable habitat for Topeka Shiner.

SPECIFICATIONS

1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 9th Edition.
2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-7-26 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at: <https://dot.sd.gov/doing-business/contractors/standard-specifications>.

INCIDENTAL WORK, STRUCTURE

1. The in-place structure is a 134'-0" three span steel composite beam bridge with reinforced concrete deck with 12"x12" reinforced concrete curb. There is painted steel channel beam bridge guardrail on steel I-beam posts mounted on the back side of the curbs. The abutments and two column bents consist of reinforced concrete. Existing plans indicate that the bents and abutments are pile founded. Abutment pile are steel 8PB36 and the bent pile are timber. The Contractor will remove the in-place structure. The bent and abutments will be removed 1' below the bottom of the undercut. All items will be properly disposed of by the Contractor.
2. The foregoing is a general description of the in-place structure and should not be considered complete in all details. Before preparing a bid, it is the Contractor's responsibility to make a visual inspection of the structure to verify the extent of work and materials involved.
3. All costs associated with the aforementioned work will be incidental to the contract lump sum price for "Incidental work, Structure".

GENERAL NOTES

1. Design Live Load: HL-93 and construction load consisting of one 7'-6" gage axle with gross weight = 95,850 lbs. The construction load shall not be applied until a minimum of 4 feet of fill has been placed over the box culvert. Other construction loads in excess of legal load must be submitted through proper channels to the Office of Bridge Design for analysis.
2. The design of the barrel section is based on a minimum fill height of 2 feet and includes all subsequent fill heights up to and including the maximum fill height of 10 feet (F10) and 15 feet (F15).
3. Design Material Strengths: Concrete  $f'_c = 4,500$  psi  
Reinforcing Steel  $f_y = 60,000$  psi
4. High sulfate levels are likely to be encountered on this project. All concrete will be Class A45 Concrete, Box Culvert conforming to Section 460 of the Construction Specifications, with the following modifications: the type of cement will be either a Type V or Type II with 20 to 25% Class F Modified Fly Ash substituted for cement in accordance with Section 605 of the Construction Specifications.
5. All reinforcing steel will conform to ASTM A615 Grade 60.
6. All lap splices shown are contact lap splices unless noted otherwise.
7. All exposed concrete corners and edges will be chamfered 3/4-inch unless noted otherwise in the plans.
8. Use 1-inch clear cover on all reinforcing steel EXCEPT as shown.
9. The Contractor will imprint on the structure the date of construction as specified and detailed on Standard Plate 460.02.
10. Care will be taken to establish Working Points (W.P.) as shown on the wings.
11. Circled numbers in PLAN and ELEVATION views on the General Drawing are section I.D. Numbers (see SDDOT Materials Manual).
12. Cost of Prefomed Expansion Joint Filler used in apron construction will be incidental to the other contract items.
13. Soils below the bottom of the proposed RCBC consist predominantly of soft gray clay silt with sand.
14. Dewatering will be required to construct the box culvert. All cost incurred for dewatering will be incidental to other contract items.
15. Compaction of earth embankment and box culvert backfill material will be governed by the Specified Density method.

REINFORCEMENT FABRIC (MSE)

1. A layer of Reinforcement Fabric (MSE) will be placed at the bottom of the undercut prior to backfilling with granular material.

GEOTEXTILE SPECIFICATION

1. Reinforcement Fabric (MSE) will conform to Section 831. The Reinforcement Fabric (MSE) provided will be on the Approved Products List or will be certified by the supplier to meet this specification prior to installation.
2. Reinforcement Fabric (MSE) will be paid for at the contract unit price per sq. yd. for Reinforcement Fabric (MSE). Payment will be full compensation for furnishing and installing the Reinforcement Fabric (MSE) only. Granular backfill materials will be paid for as part of the Box Culvert Undercut bid item.

| AASHTO Soil Classification | USDA Textural Classification                  | Average Liquid Limit | Shrink-Swell Potential | Frost Action Potential | Steel Corrosivity | Steel Corrosivity |
|----------------------------|-----------------------------------------------|----------------------|------------------------|------------------------|-------------------|-------------------|
| A-2, A-4, A-6              | Stratified loamy fine sand to loam; silt loam | 32                   | High                   | Moderate               | High              | High              |

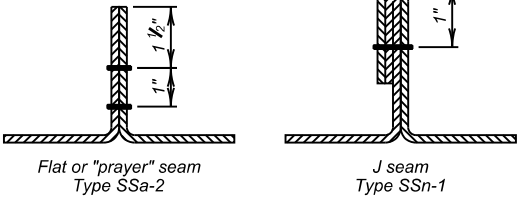
GEOTEXTILE INSTALLATION PROCEDURE

1. Place the Reinforcement Fabric (MSE) on as level and smooth of a surface as possible. Any protrusions that might damage the geotextile will be removed prior to placing the geotextile. All seams in the geotextile will be stitched in accordance with the seaming procedure and as shown on the detail labeled "Seam Types." No equipment will be allowed on the geotextile until the granular backfill material is in place. The geotextile will be kept as taut as possible prior to backfilling. Granular backfill material will be dumped behind the leading edge of the fill and pushed into place with a loader or dozer.

GEOTEXTILE SEAMING PROCEDURE

1. The sewn seams will consist of two parallel rows of stitching ("prayer" seam, Type SSa-2), or a J-seam (Type SSn-1), using a single row of stitching. The stitching will be a lock type stitch.
2. If the Type SSa-2 seam is used, the two rows of stitching will be 1" apart with a tolerance of plus or minus 0.5" and will not cross, except for restitching. The minimum seam allowance, i.e., minimum distance from the geotextile edge to the stitch line nearest to that edge, will be 1.5".
3. If the J seam (Type SSn-1) is used, the minimum seam allowance will be 1".
4. The seam, stitch type, and the equipment used to perform the stitching will be as recommended by the manufacturer of the geotextile and approved by the Engineer. The seams will be sewn in such a manner that the seam can be readily inspected by the Engineer.
5. The thread used will be high-strength polypropylene, polyester, or Kevlar thread. Nylon threads will not be allowed.

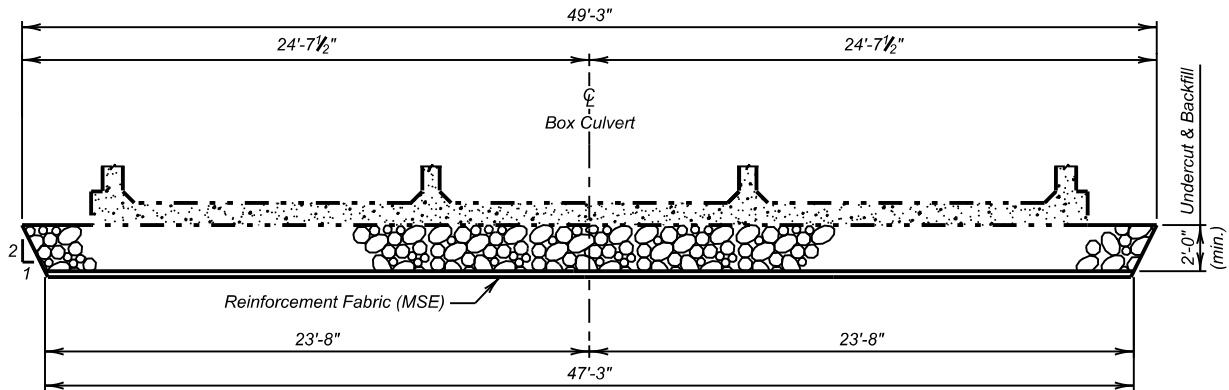
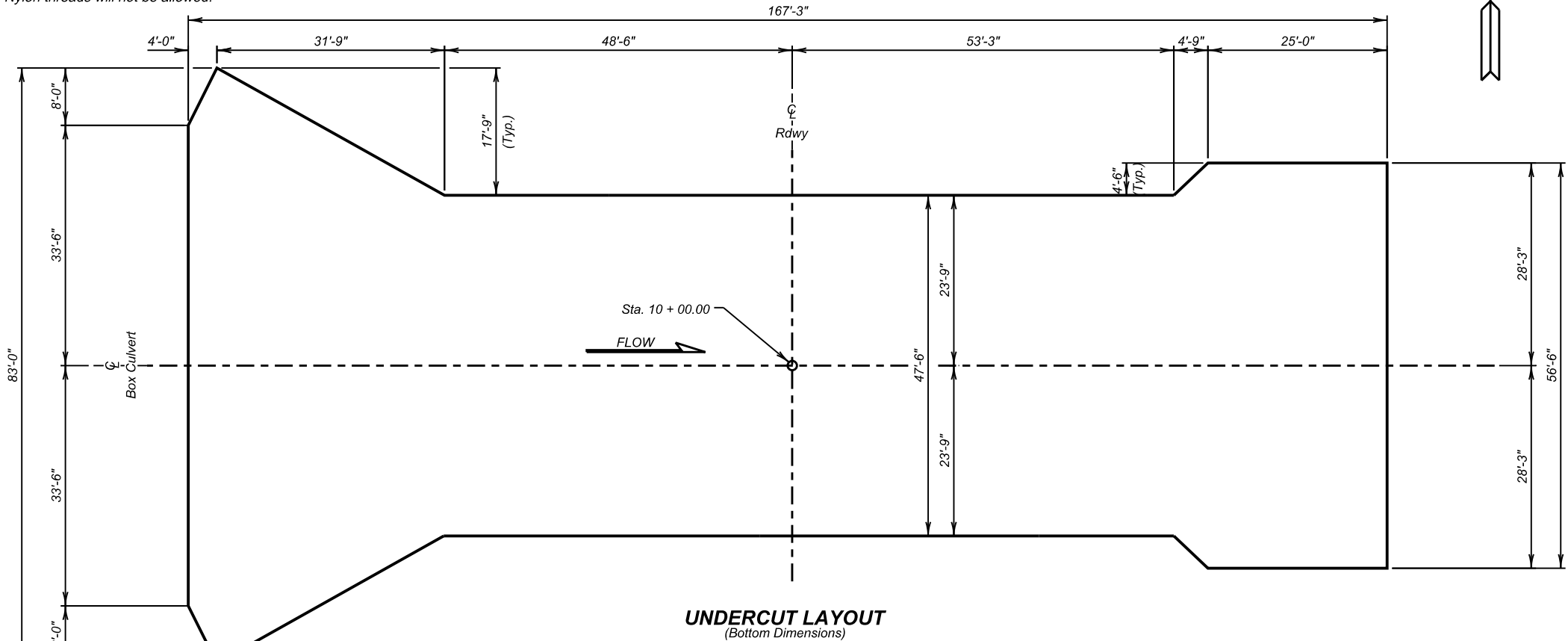
FOR BIDDING PURPOSES ONLY



GEOTEXTILE SEAM TYPES

| ESTIMATED QUANTITIES       |         |          |
|----------------------------|---------|----------|
| ITEM                       | UNIT    | QUANTITY |
| Box Culvert Undercut       | Cu. Yd. | 674      |
| Reinforcement Fabric (MSE) | Sq. Yd. | 985      |

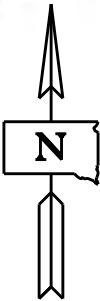
For payment, quantity is based on plan shown undercut dimensions and will not be measured unless the Engineer orders a change.



TYPICAL SECTION  
(For Limits of Undercut)

Revised: 8-31-2026

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 18        | 36           |



NOTES AND UNDERCUT DETAILS

FOR  
3 - 13' X 12' BOX CULVERT  
LODGEPOLE CREEK 0° SKEW  
STA 10+00.00 GOV. LOT 4  
STR. NO. 53-281-151 BRF-B 6399(190)  
PCN 09M5 HL-93

PERKINS COUNTY  
S. D. DEPT. OF TRANSPORTATION

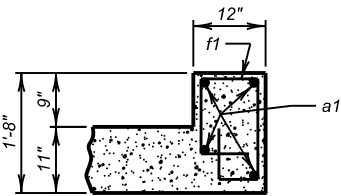
- X028 -

JULY 2026

2 OF 8

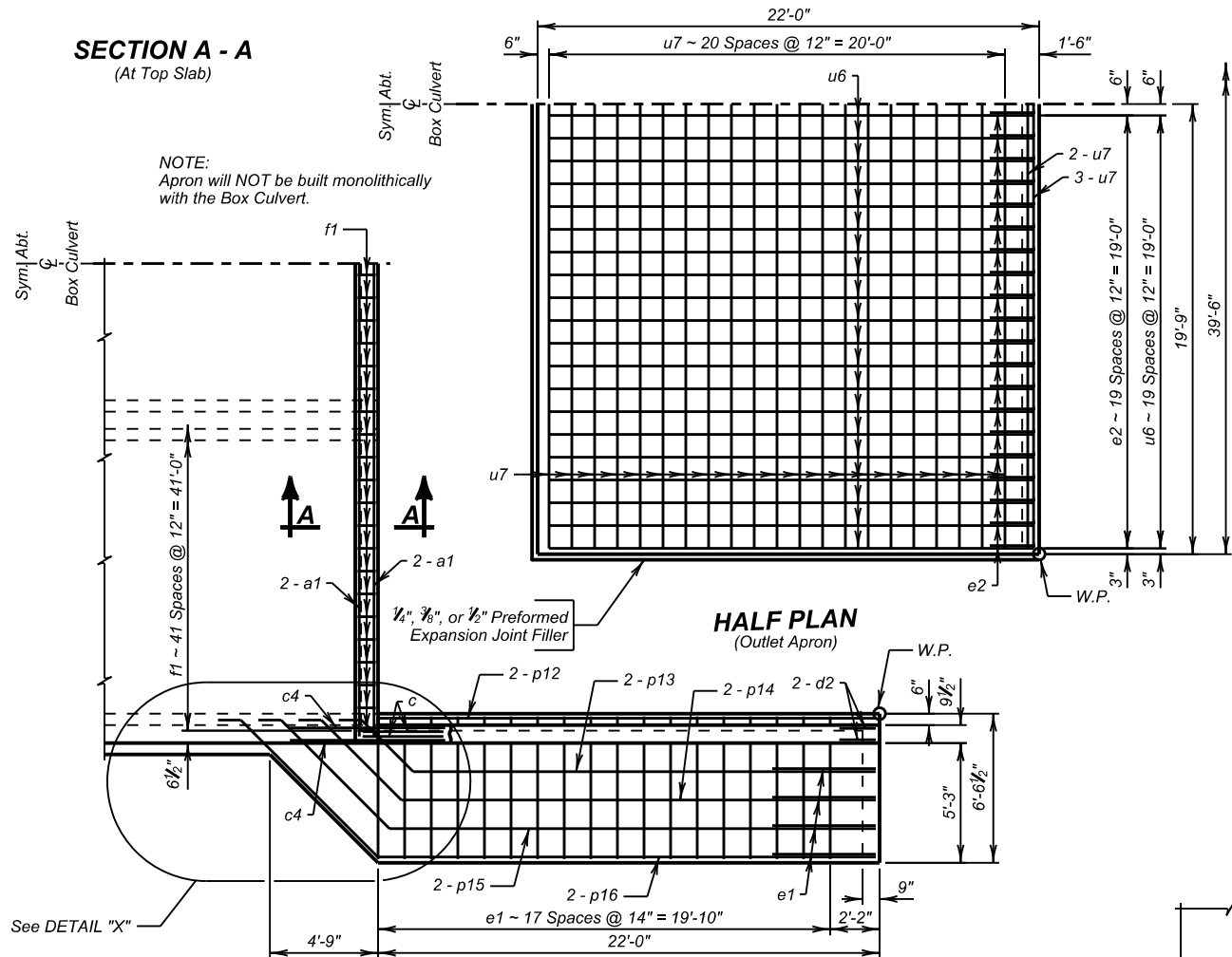
|                   |                   |                  |                 |
|-------------------|-------------------|------------------|-----------------|
| DESIGNED BY<br>DH | CK. DES. BY<br>SD | DRAFTED BY<br>ZW | BRIDGE ENGINEER |
|-------------------|-------------------|------------------|-----------------|



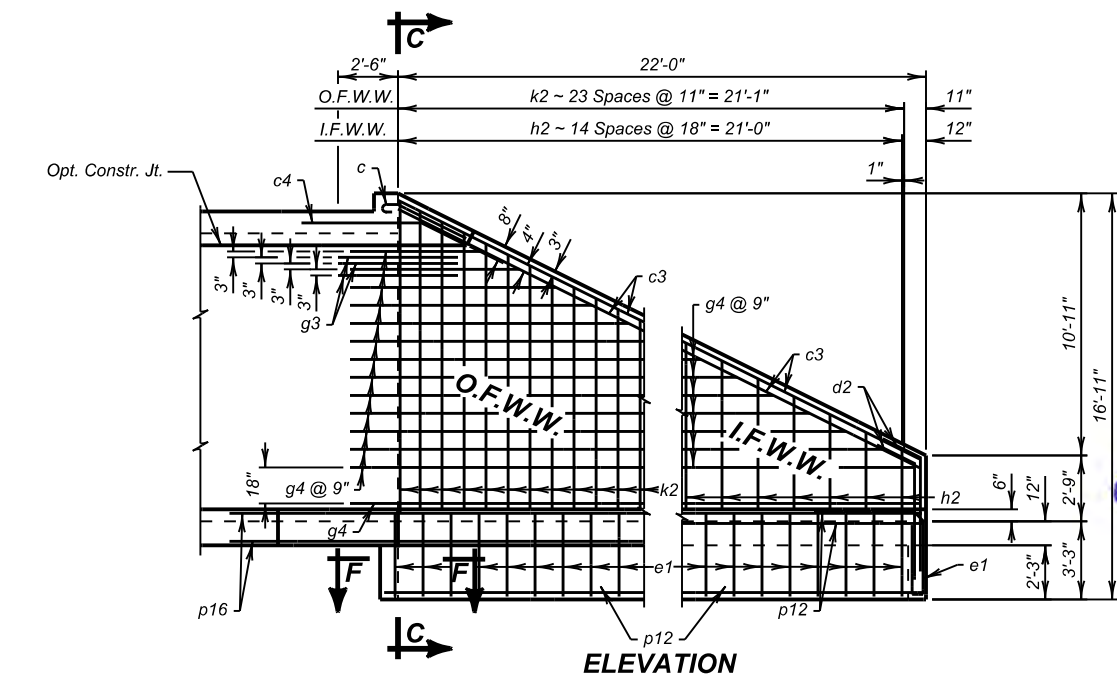


SECTION A - A  
(At Top Slab)

NOTE:  
Apron will NOT be built monolithically  
with the Box Culvert.

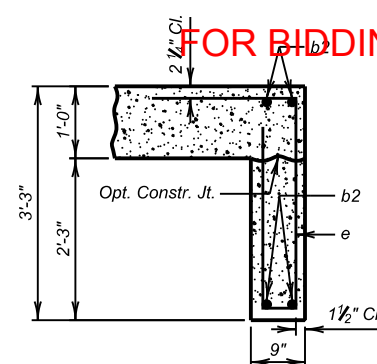


HALF PLAN

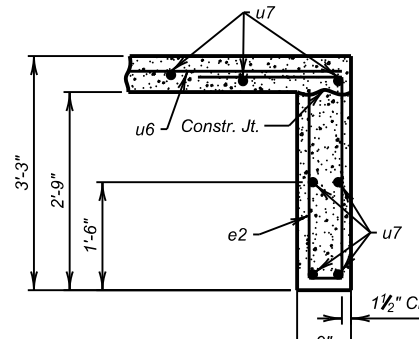


ELEVATION

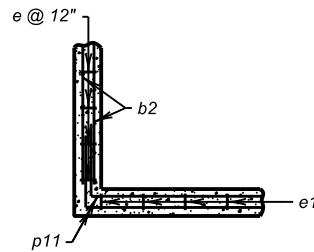
**LEGEND FOR PLACING RE-STEEL**  
I.F.W.W. - Inside Face of Wing Wall  
O.F.W.W. - Outside Face of Wing Wall



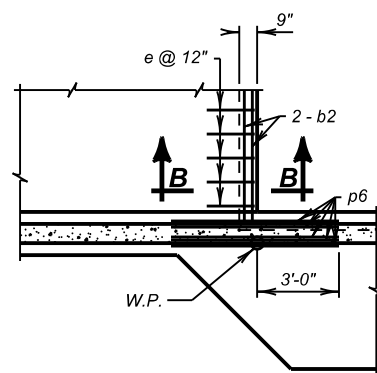
SECTION B - B



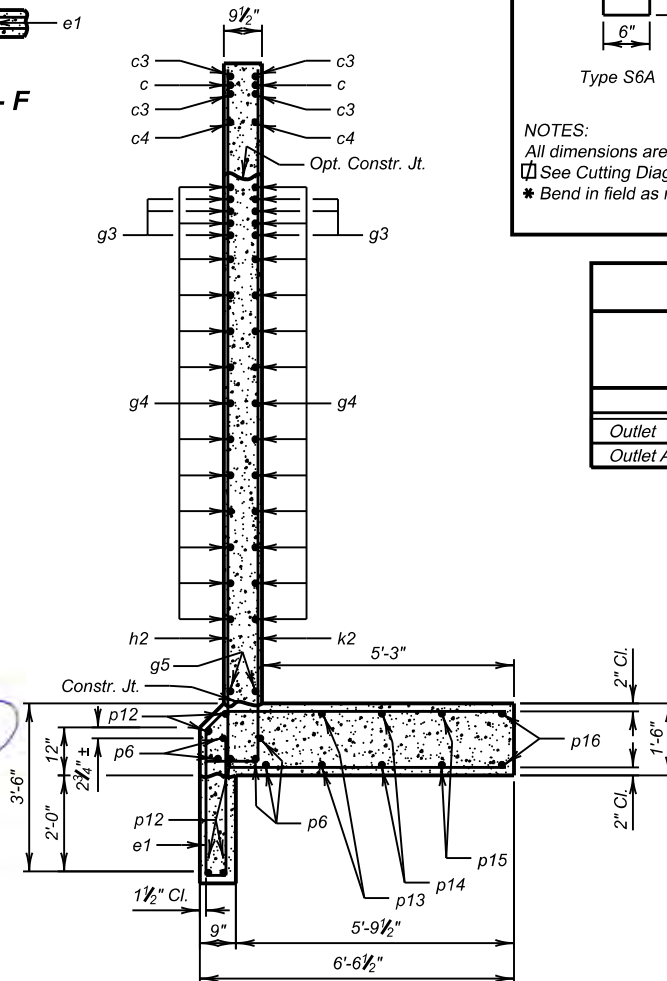
SECTION E - E



SECTION F - F



DETAIL "X"  
(At Bottom Slab)



SEC. C - C

**FOR BIDDING PURPOSES ONLY**

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 20        | 36           |

**REINFORCING SCHEDULE**

| Mk. | No. | Size | Length | Type | Bending Details |
|-----|-----|------|--------|------|-----------------|
| a1  | 4   | 6    | 41'-6" | Str. |                 |
| b2  | 4   | 6    | 40'-3" | Str. |                 |
| c   | 4   | 5    | 4'-6"  | 1A   |                 |
| c3  | 8   | 5    | 24'-3" | Str. |                 |
| c4  | 4   | 5    | 7'-0"  | 19B  |                 |
| d2  | 8   | 5    | 6'-6"  | 19B  |                 |
| e   | 41  | 4    | 8'-3"  | S12  |                 |
| e1  | 44  | 5    | 12'-9" | S12A |                 |
| f1  | 42  | 4    | 5'-3"  | S6A  |                 |
| g3  | 12  | 5    | 5'-0"  | Str. |                 |
| g4  | 26  | 4    | 29'-0" | Str. |                 |
| g5  | 4   | 4    | 23'-9" | Str. |                 |
| h2  | 15  | 4    | 29'-6" | 17A  |                 |
| k2  | 24  | 5    | 20'-3" | 17A  |                 |
| p6  | 10  | 6    | 7'-0"  | Str. |                 |
| p12 | 10  | 4    | 24'-6" | Str. |                 |
| p13 | 4   | 4    | 24'-6" | Str. |                 |
| p14 | 4   | 4    | 27'-0" | Str. |                 |
| p15 | 4   | 4    | 29'-0" | Str. |                 |
| p16 | 4   | 4    | 31'-3" | Str. |                 |

**OUTLET APRON**

|    |    |   |        |      |
|----|----|---|--------|------|
| e2 | 40 | 4 | 8'-3"  | S12  |
| u6 | 40 | 4 | 21'-3" | Str. |
| u7 | 26 | 4 | 39'-0" | Str. |

NOTES:  
All dimensions are out to out of bars.  
See Cutting Diagram.  
\* Bend in field as necessary to fit.

**ESTIMATED QUANTITIES**

| ITEM         | Class A45 Concrete, Box Culvert | Reinforcing Steel | Structure Excavation, Box Culvert |
|--------------|---------------------------------|-------------------|-----------------------------------|
| Unit         | Cu. Yd.                         | Lb.               | Cu. Yd.                           |
| Outlet       | 40.1                            | 3754              | 8.4                               |
| Outlet Apron | 19.2                            | 1466              | 19.2                              |

**OUTLET DETAILS**

FOR

3 - 13' X 12' BOX CULVERT

LODGEPOLE CREEK  
STA 10+00.00  
STR. NO. 53-281-151  
PCN 09M5

0° SKEW  
GOV. LOT 4  
BRF-B 6399(190)  
HL-93

PERKINS COUNTY

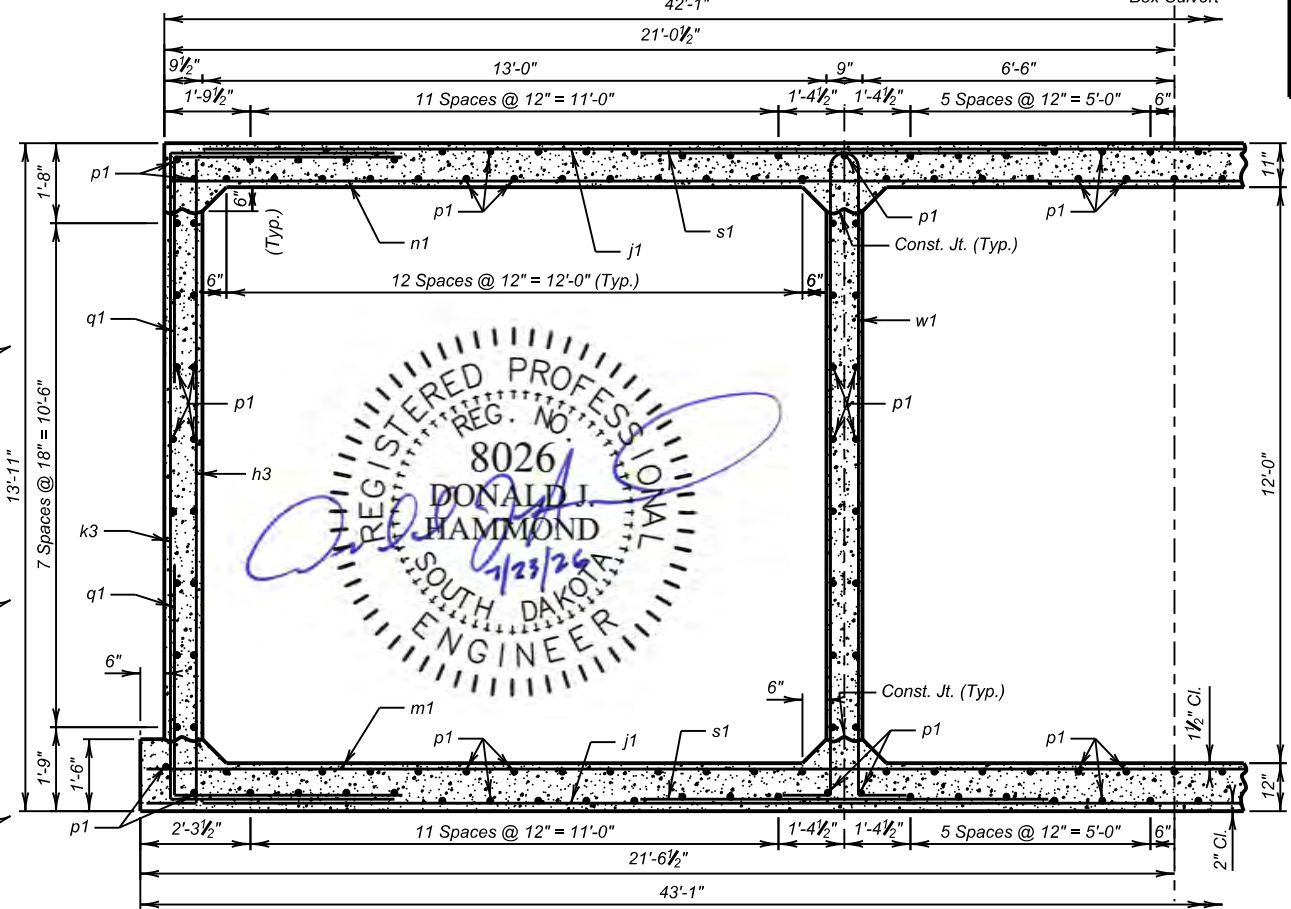
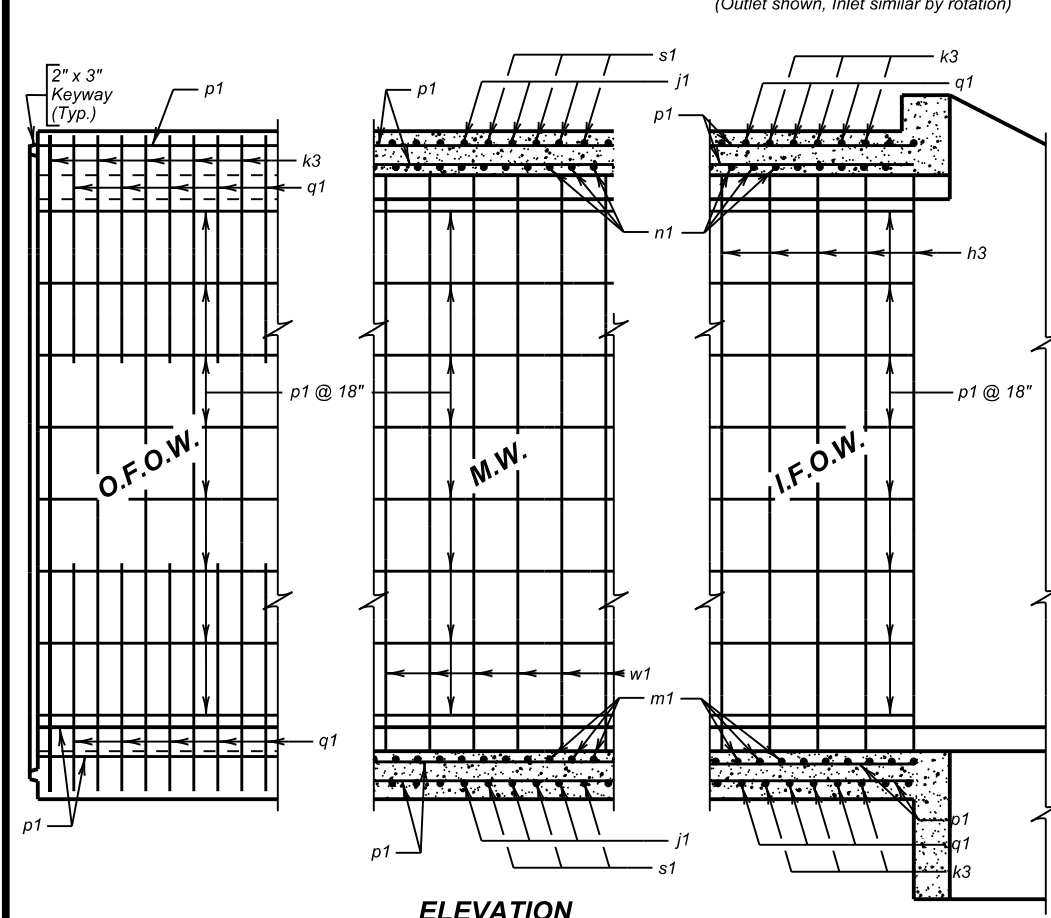
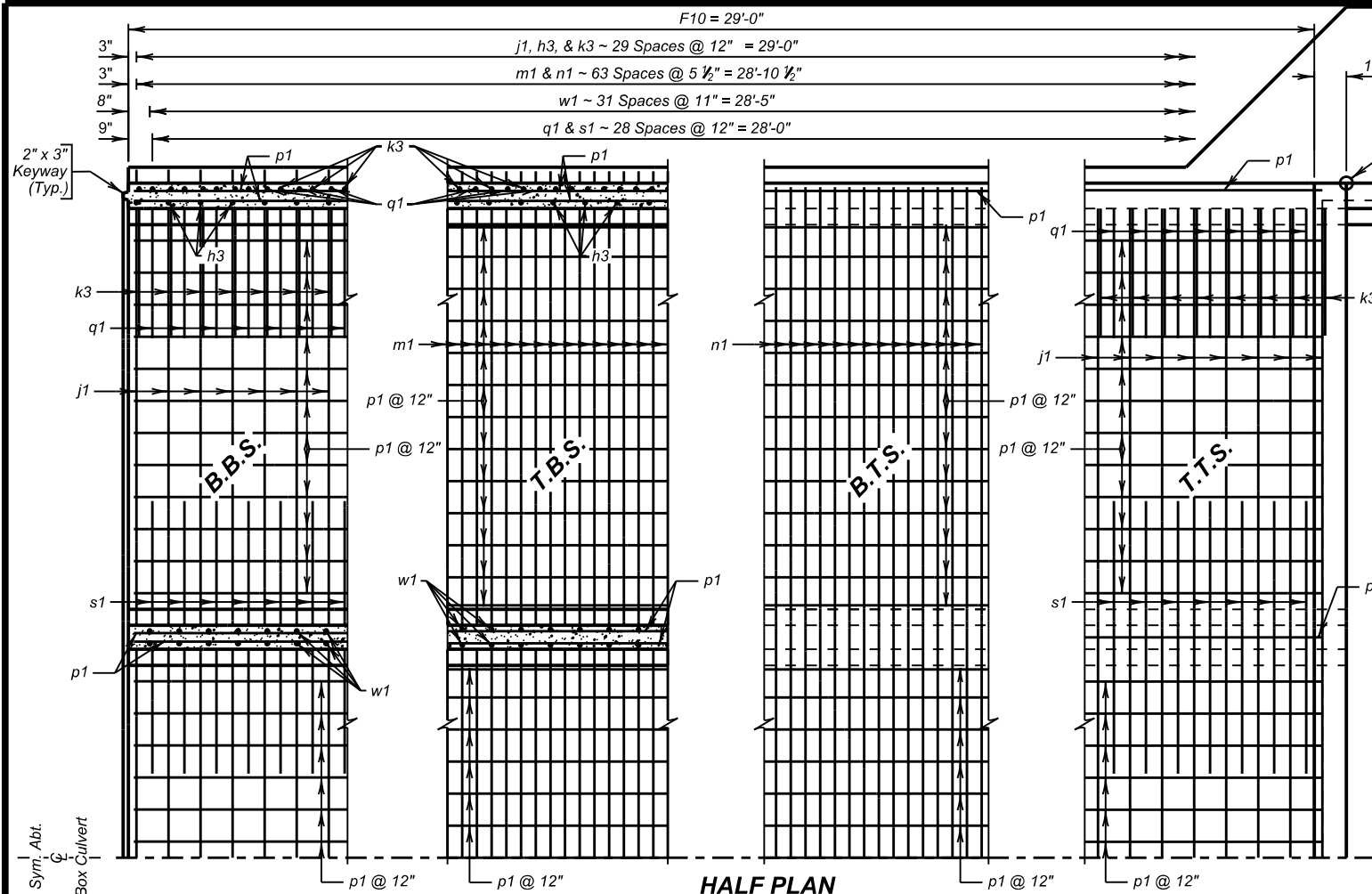
S. D. DEPT. OF TRANSPORTATION

- X028 -

JULY 2026

4 OF 8

|                   |                   |                  |                 |
|-------------------|-------------------|------------------|-----------------|
| DESIGNED BY<br>DH | CK. DES. BY<br>SD | DRAFTED BY<br>ZW | BRIDGE ENGINEER |
|-------------------|-------------------|------------------|-----------------|



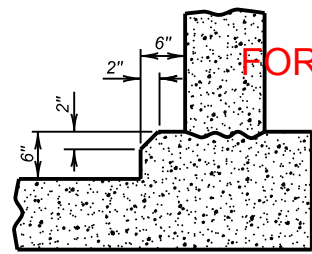
**OPTIONAL FILLET DETAIL**  
(At Bottom Slab)

Note: Contractor may form the optional full fillet, with 2" Chamfer, as detailed. The cost of the additional concrete shall be borne by the Contractor.

**OPTIONAL POUR - BOTTOM SLAB**

The Bottom Slab be by poured continuously, at the option of the Contractor, with the use of a Preformed Metal keyway conforming to the keyway dimensions and location as shown on the plans. The keyway length shall be full width of the bottom slab. Care shall be taken to maintain proper alignment of the keyway during the pour sequence. All additional costs of this option shall be borne by the Contractor.

Place z1 bars thru construction joint between barrel sections as shown on Standard Plate No. 460.10. Quantity of z1 bars are for two construction joints.

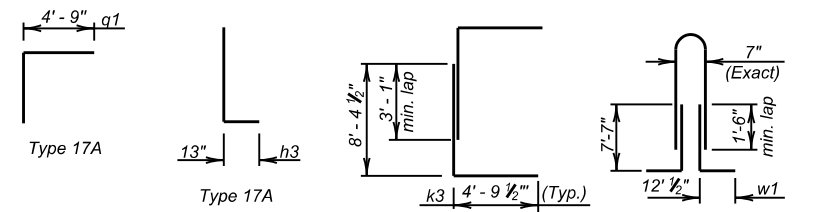
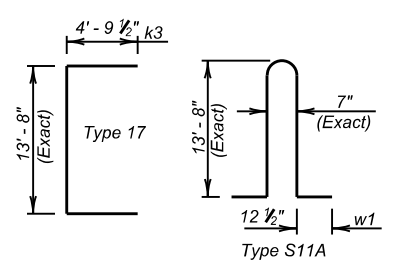


**FOR BIDDING PURPOSES ONLY**

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 21        | 36           |

**REINFORCING SCHEDULE**  
(For Two F10 Barrel End Sections)

| Mk. | No. | Size | Length | Type |
|-----|-----|------|--------|------|
| h3  | 120 | 5    | 14'-6" | 17A  |
| j1  | 120 | 7    | 40'-6" | Str. |
| k3  | 120 | 6    | 23'-3" | 17   |
| m1  | 128 | 6    | 42'-9" | Str. |
| n1  | 128 | 6    | 41'-9" | Str. |
| p1  | 456 | 4    | 29'-0" | Str. |
| q1  | 232 | 6    | 9'-6"  | 17A  |
| s1  | 232 | 7    | 8'-6"  | Str. |
| w1  | 128 | 4    | 29'-9" | S11A |
| z1  | 220 | 5    | 3'-6"  | Str. |



**NOTES:**

All dimensions are out to out of bars.

Request for additional reinforcing steel splices at points other than those shown, must be submitted to the Engineer for prior approval. If additional splices are approved, no payment will be allowed for the added quantity of reinforcing steel.

**OPTIONAL k1 & w1 SPLICE DETAILS**  
Contractor may use optional reinforcing steel splice, as shown. The cost of the additional reinforcing steel will be borne by the Contractor.

**ESTIMATED QUANTITIES**

| ITEM                                 | Class A45 Concrete, Box Culvert | Reinforcing Steel | Structure Excavation, Box Culvert |
|--------------------------------------|---------------------------------|-------------------|-----------------------------------|
| Unit                                 | Cu. Yd.                         | Lb.               | Cu. Yd.                           |
| 2 - F10 Barrel End Sections @ 29'-0" | 259.2                           | 51707             | 92.5                              |

**LEGEND FOR PLACING RE-STEEL**

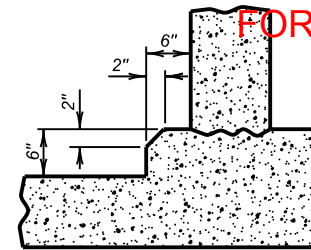
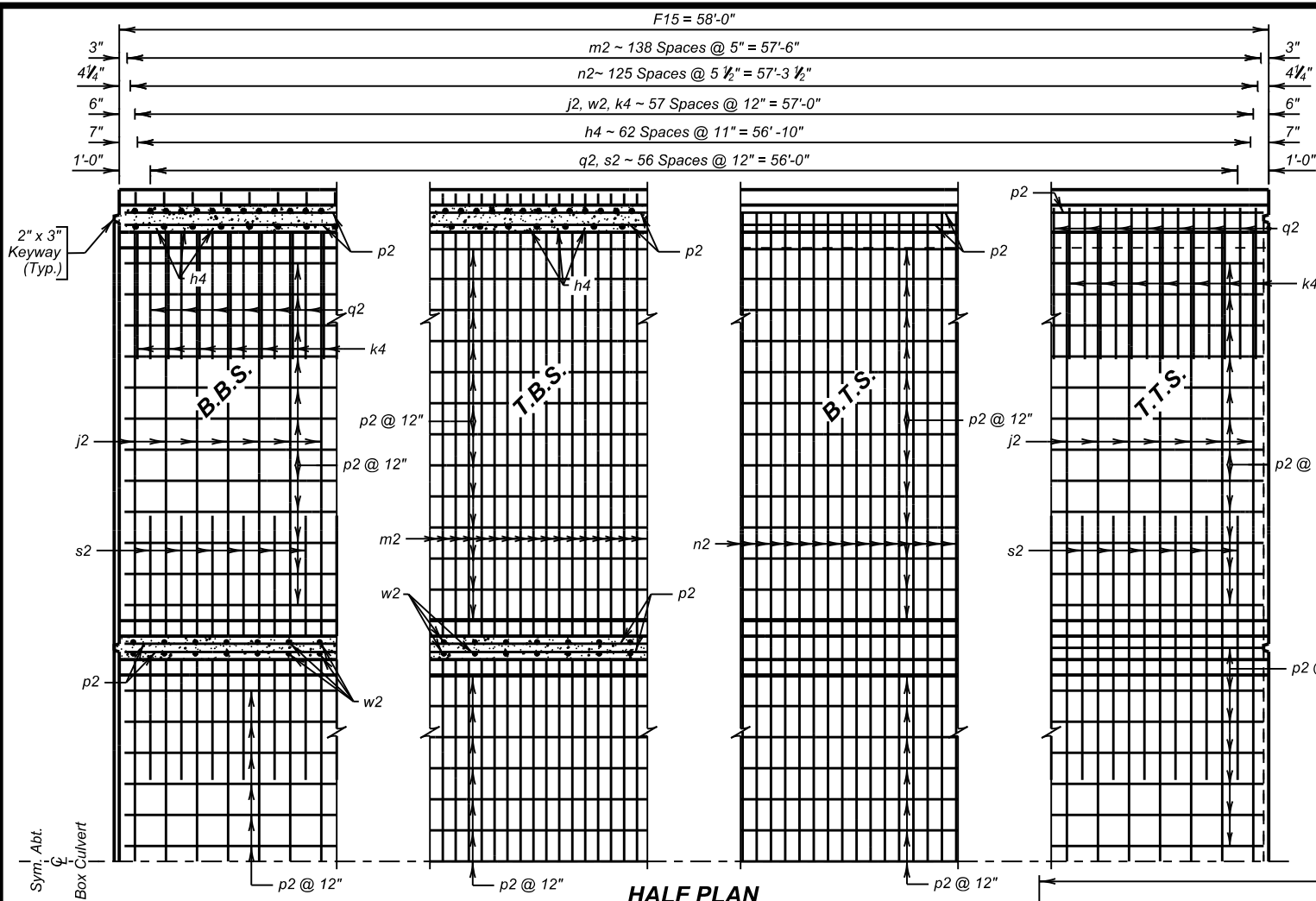
|                                         |
|-----------------------------------------|
| T.T.S. - Top of Top Slab                |
| B.T.S. - Bottom of Top Slab             |
| T.B.S. - Top of Bottom Slab             |
| B.B.S. - Bottom of Bottom Slab          |
| I.F.O.W. - Inside Face of Outside Wall  |
| O.F.O.W. - Outside Face of Outside Wall |
| M.W. - Middle Wall                      |

**F10 BARREL END SECTION DETAILS**

FOR  
**3 - 13' X 12' BOX CULVERT (C.I.P.)**  
LODGEPOLE CREEK  
STA 10+00.00  
STR. NO. 53-281-151  
PCN 09M5  
0° SKEW  
SEC. 2, T20N, R14E  
BRF-B 6399(190)  
HL-93

PERKINS COUNTY  
S. D. DEPT. OF TRANSPORTATION  
JULY 2026

|                   |                   |                  |                 |
|-------------------|-------------------|------------------|-----------------|
| DESIGNED BY<br>SD | CK. DES. BY<br>DH | DRAFTED BY<br>SD | BRIDGE ENGINEER |
|-------------------|-------------------|------------------|-----------------|



**OPTIONAL FILLET DETAIL**  
(At Bottom Slab)

Note: Contractor may form the optional full fillet, with 2" Chamfer, as detailed. The cost of the additional concrete shall be borne by the Contractor.

**OPTIONAL POUR - BOTTOM SLAB**

The Bottom Slab by be poured continuously, at the option of the Contractor, with the use of a Preformed Metal keyway conforming to the keyway dimensions and location as shown on the plans. The keyway length shall be full width of the bottom slab. Care shall be taken to maintain proper alignment of the keyway during the pour sequence. All additional costs of this option shall be borne by the Contractor.

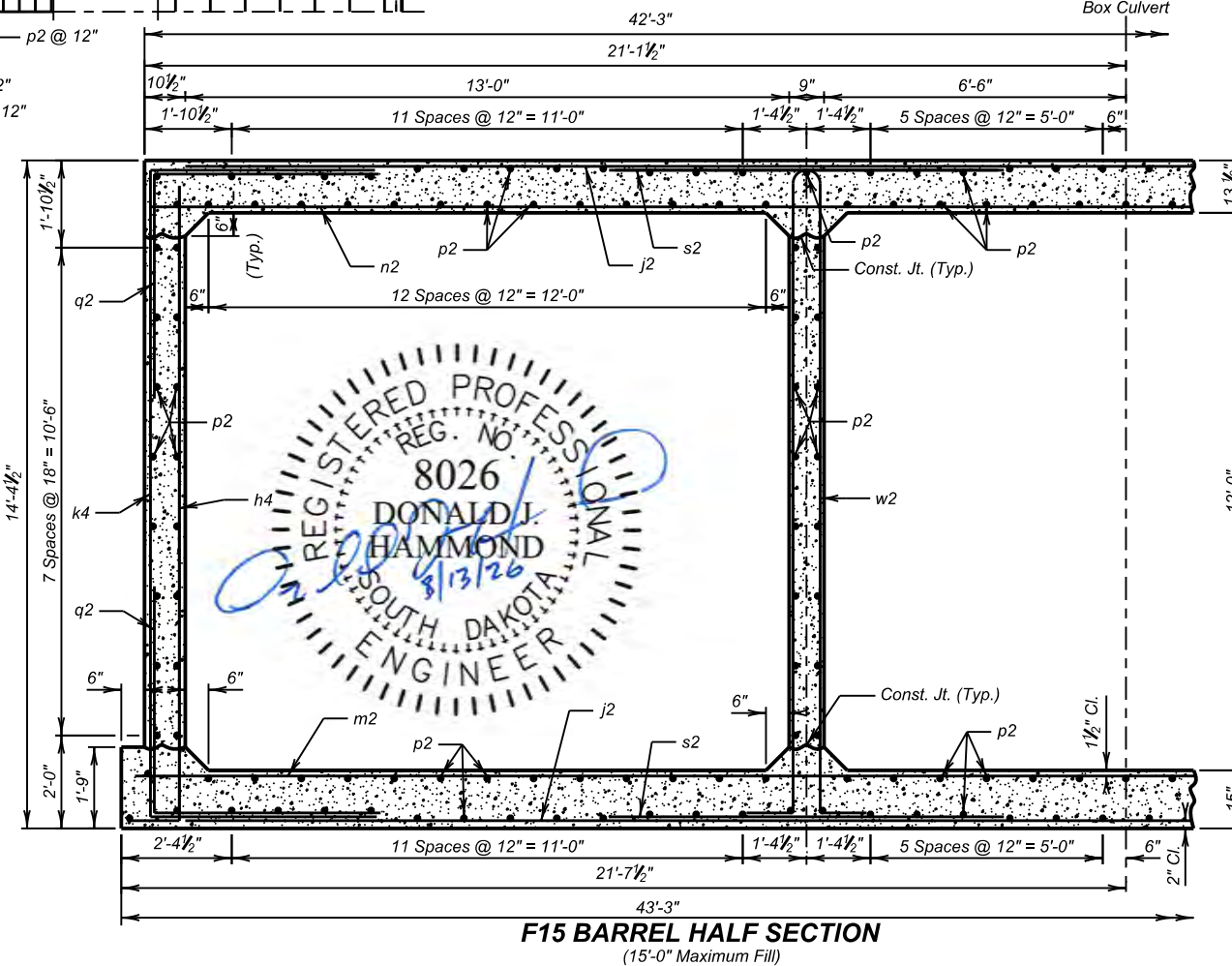
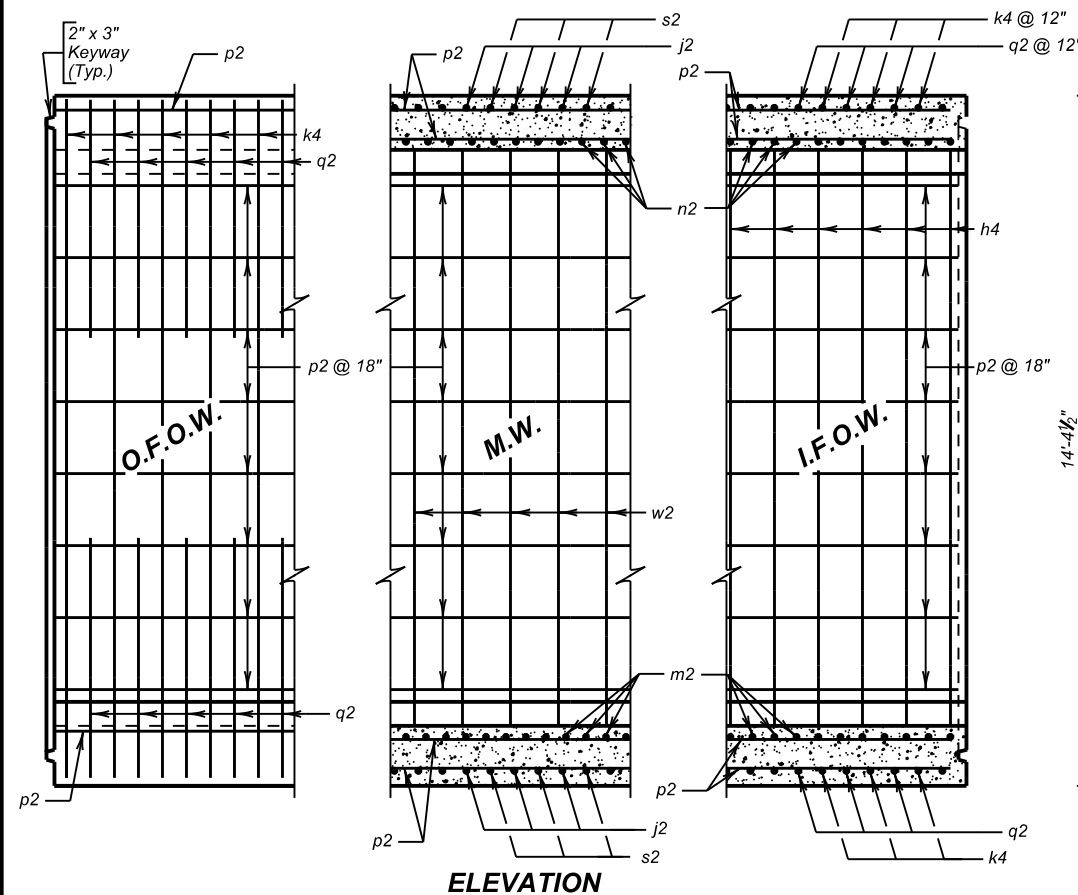
| REINFORCING SCHEDULE |     |      |        |      | (For One F15 Barrel Interior Section) |  |
|----------------------|-----|------|--------|------|---------------------------------------|--|
| Mk.                  | No. | Size | Length | Type | Bending Details                       |  |
| h4                   | 126 | 5    | 15'-0" | 17A  |                                       |  |
| j2                   | 116 | 7    | 40'-6" | Str. |                                       |  |
| k4                   | 116 | 6    | 24'-3" | 17   |                                       |  |
| m2                   | 139 | 6    | 43'-0" | Str. |                                       |  |
| n2                   | 126 | 6    | 42'-0" | Str. |                                       |  |
| p2                   | 228 | 4    | 57'-9" | Str. |                                       |  |
| q2                   | 228 | 6    | 10'-0" | 17A  |                                       |  |
| s2                   | 228 | 7    | 8'-6"  | Str. |                                       |  |
| w2                   | 116 | 4    | 30'-6" | S11A |                                       |  |

NOTES:

All dimensions are out to out of bars.

Request for additional reinforcing steel splices at points other than those shown, must be submitted to the Engineer for prior approval. If additional splices are approved, no payment will be allowed for the added quantity of reinforcing steel.

OPTIONAL k4 & w2 SPLICE DETAILS  
Contractor may use optional reinforcing steel splices, as shown. The cost of the additional reinforcing steel will be borne by the Contractor.

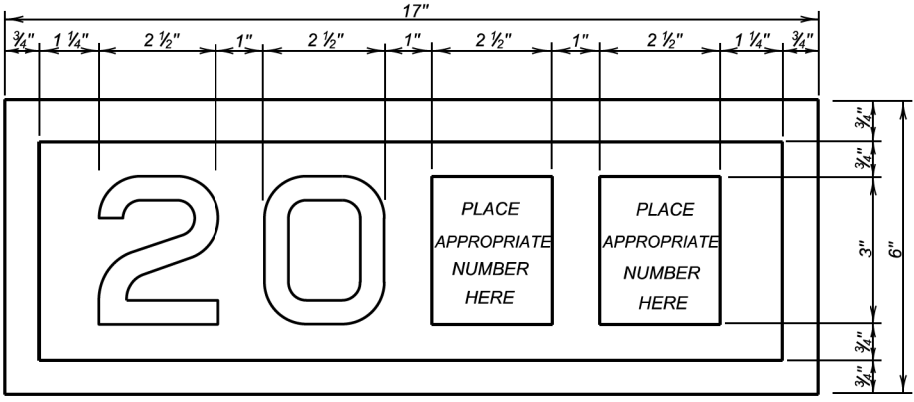


| ESTIMATED QUANTITIES           |                                 |                   |                                   |
|--------------------------------|---------------------------------|-------------------|-----------------------------------|
| ITEM                           | Class A45 Concrete, Box Culvert | Reinforcing Steel | Structure Excavation, Box Culvert |
| Unit                           | Cu. Yd.                         | Lb.               | Cu. Yd.                           |
| 1- F15 Barrel Section @ 58'-0" | 306.3                           | 51025             | 116.1                             |

| LEGEND FOR PLACING RE-STEEL             |  |
|-----------------------------------------|--|
| T.T.S. - Top of Top Slab                |  |
| B.T.S. - Bottom of Top Slab             |  |
| T.B.S. - Top of Bottom Slab             |  |
| B.B.S. - Bottom of Bottom Slab          |  |
| I.F.O.W. - Inside Face of Outside Wall  |  |
| O.F.O.W. - Outside Face of Outside Wall |  |
| M.W. - Middle Wall                      |  |

**F15 BARREL INTERIOR SECTION DETAILS**  
FOR  
**3 - 13' X 12' BOX CULVERT (C.I.P.)**  
LODGEPOLE CREEK 0° SKEW  
STA 10+00.00 SEC. 2, T20N, R14E  
STR. NO. 53-281-151 BRF-B 6399(190)  
PCN 09M5 HL-93

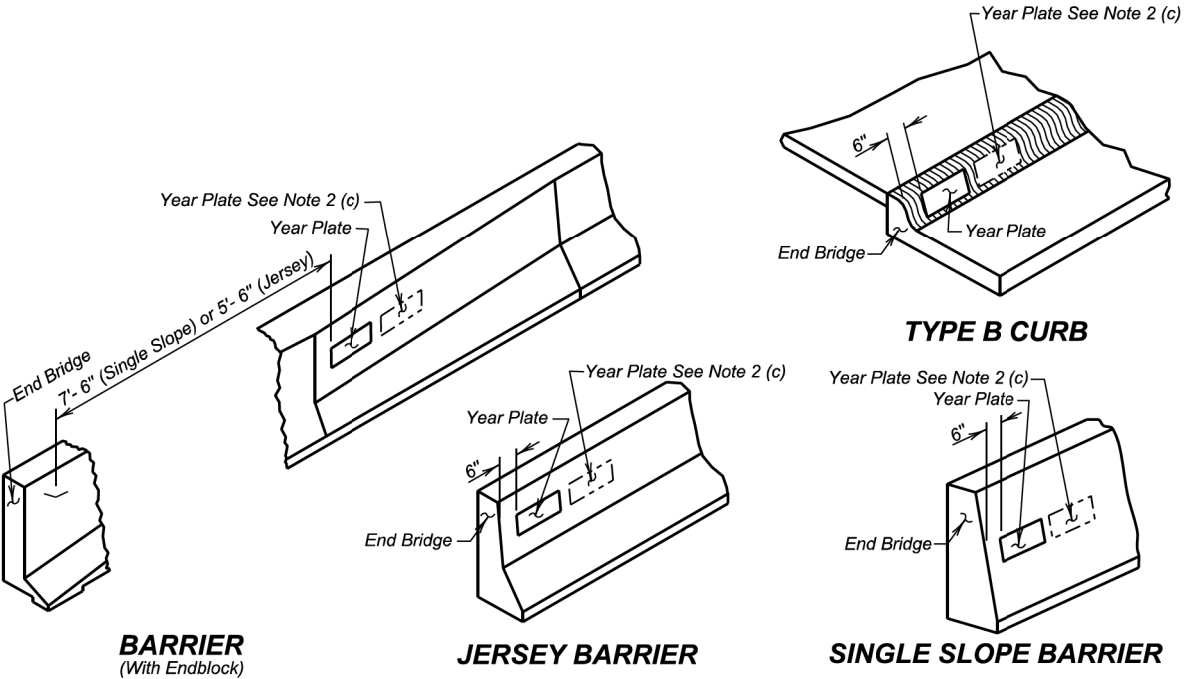
|                                                              |                   |                  |                 |
|--------------------------------------------------------------|-------------------|------------------|-----------------|
| PERKINS COUNTY<br>S. D. DEPT. OF TRANSPORTATION<br>JULY 2026 |                   |                  |                 |
| DESIGNED BY<br>SD                                            | CK. DES. BY<br>DH | DRAFTED BY<br>SD | BRIDGE ENGINEER |



YEAR PLATE DETAILS

GENERAL NOTES:

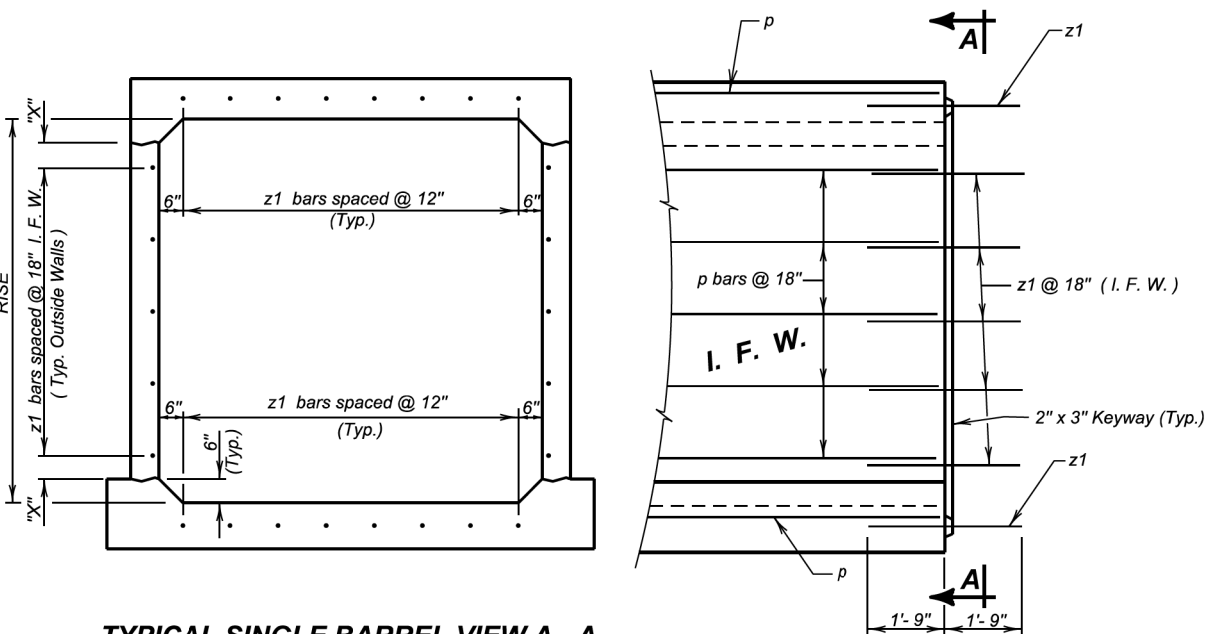
- Year plates of the general dimensions shown will be constructed on all box culverts and bridges. The year plates will be constructed in reverse and attached to the forms in such a manner that the finished imprint in the concrete does not exceed one-half (1/2) inch in depth.
- Year plates will be located on structure(s) as follows:
  - On cast-in-place box culverts the year plates will be four and one - half (4 1/2) inches below the top of the upstream parapet wall and centered laterally on the upstream face. On precast box culverts the year plate will be centered laterally on the upstream face of the top slab. Where an extended interior wall interferes with this location, the year plate will be centered in an adjacent barrel.
  - On bridges with six (6) inch curbs, "Jersey" shaped barriers with no endblocks, or "Single Slope" shaped barriers with no endblocks, the year plate will be centered vertically on the curb face approximately six (6) inches from the end of the bridge, or as designated by the Engineer. On bridges with barrier endblocks, the year plate will be centered on the upper sloped portion of the barrier approximately 5'-6" for "Jersey" shaped barriers from the end of the bridge and 7'-6" for "Single Slope" shaped barriers from the end of bridge, or as designated by the Engineer. There will be one year plate at each end of the bridge on opposite sides.
  - When the plans specify that both the original date of construction and the date of reconstruction are to be shown, one date will be placed as listed above and the other located adjacent to it. Both year plates will be shown at each end of the bridge on opposite sides.
- There will be no separate measurement or payment made for year plates on box culverts and bridges. All costs for this work will be incidental to other contract items.



TYPE B CURB

January 22, 2021

|                      |                       |                    |              |
|----------------------|-----------------------|--------------------|--------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | YEAR PLATE DETAILS | PLATE NUMBER |
|                      |                       |                    | 460.02       |
|                      |                       |                    | Sheet 1 Of 1 |



TYPICAL SINGLE BARREL VIEW A - A

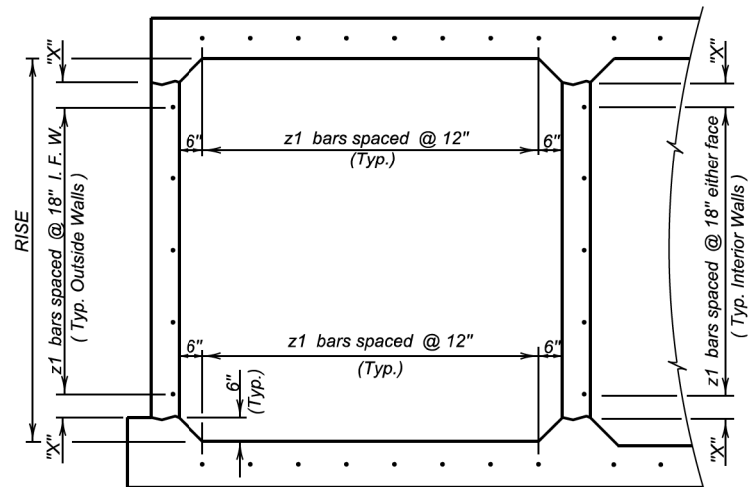
ELEVATION

| LEGEND FOR PLACING RE-STEEL |
|-----------------------------|
| I. F. W. - Inside Face Wall |

| RISE    | "X" |
|---------|-----|
| 3'- 0"  | 3"  |
| 4'- 0"  | 9"  |
| 5'- 0"  | 6"  |
| 6'- 0"  | 3"  |
| 7'- 0"  | 9"  |
| 8'- 0"  | 6"  |
| 9'- 0"  | 3"  |
| 10'- 0" | 9"  |
| 11'- 0" | 6"  |
| 12'- 0" | 3"  |
| 13'- 0" | 9"  |
| 14'- 0" | 6"  |

GENERAL NOTES:

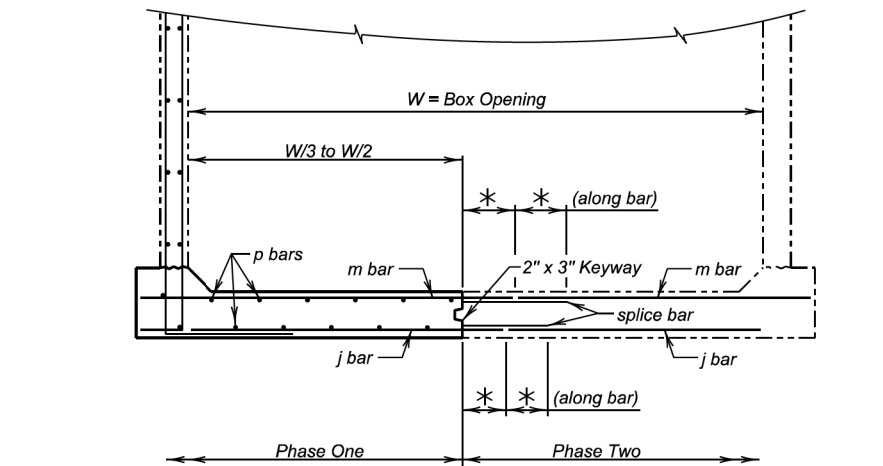
- z1 bars will be placed in the middle of the 2" X 3" keyway in the top and bottom slabs. z1 bars will be lapped with the longitudinal p bars in the inside face of the wall for outside walls and in either face for interior walls. z1 bars are listed and included elsewhere in plans.
- Drainage Fabric Protection will be placed in accordance with Section 422, or Section 560, whichever is applicable.



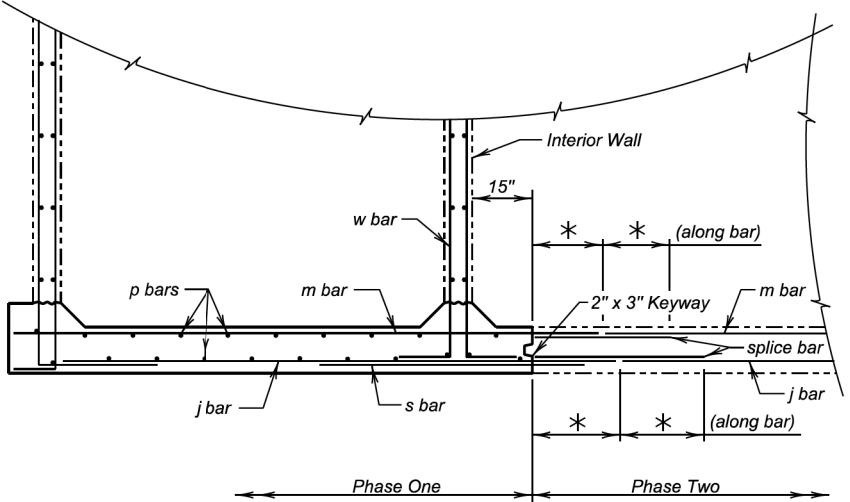
TYPICAL MULTIPLE BARREL VIEW A - A

June 1, 2022

|                      |                       |                                      |              |
|----------------------|-----------------------|--------------------------------------|--------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | BOX CULVERT BARREL TIE REINFORCEMENT | PLATE NUMBER |
|                      |                       |                                      | 460.10       |
|                      |                       |                                      | Sheet 1 of 1 |



TYPICAL SINGLE BARREL CONSTRUCTION JOINT LOCATION  
(BOTTOM SLAB ONLY)



TYPICAL MULTIPLE BARREL CONSTRUCTION JOINT LOCATION  
(BOTTOM SLAB ONLY)

\* See table of Lap Lengths for correct length of lap to use.

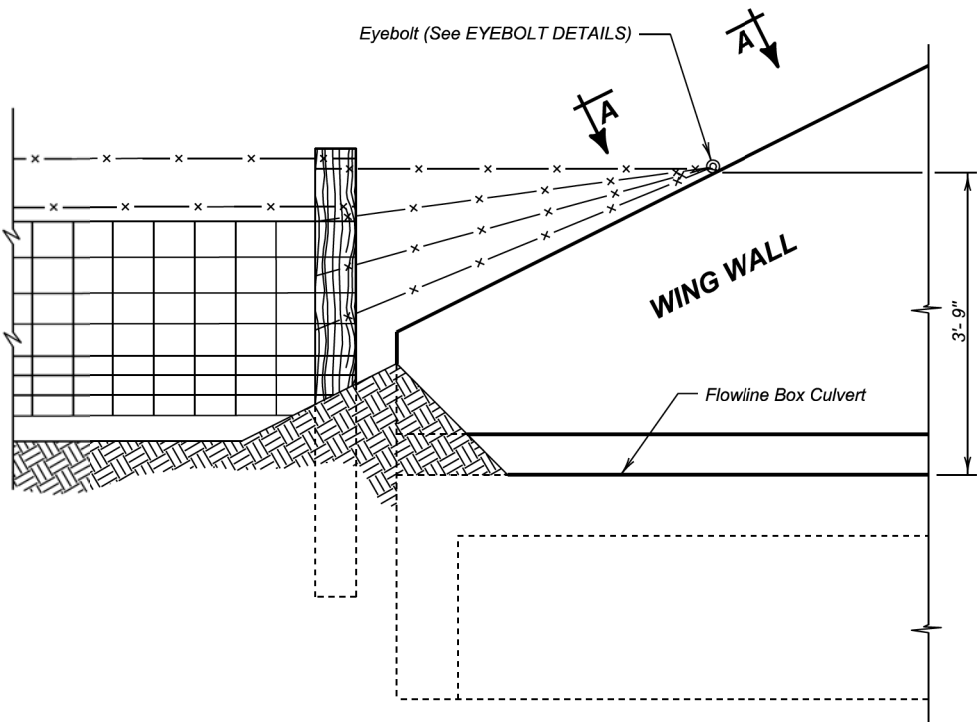
| BAR SIZE | LAP LENGTH   |              |
|----------|--------------|--------------|
|          | SPACING < 6" | SPACING ≥ 6" |
| #4       | 1' - 9"      | 1' - 6"      |
| #5       | 2' - 3"      | 1' - 9"      |
| #6       | 2' - 9"      | 2' - 3"      |
| #7       | 3' - 3"      | 2' - 6"      |
| #8       | 4' - 3"      | 3' - 3"      |

GENERAL NOTES:

- The s bars shall not be cut and lapped.
- The m and j bars listed on the barrel detail sheet(s) are the length of bar required not including laps.
- The cost of additional reinforcing steel for the lap shall be borne by the Contractor.
- All costs for constructing the optional bottom slab construction joint including labor and materials, except for the additional lap reinforcing steel, shall be incidental to the contract unit price per cubic yard for "Class A45 Concrete, Box Culvert".

June 26, 2012

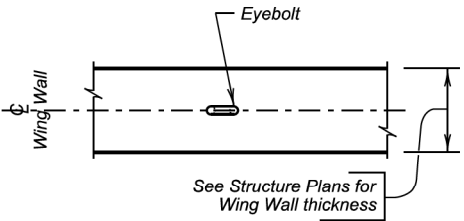
|                      |                       |                                         |                        |
|----------------------|-----------------------|-----------------------------------------|------------------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | OPTIONAL BOTTOM SLAB CONSTRUCTION JOINT | PLATE NUMBER<br>460.11 |
|                      |                       |                                         | Sheet 1 of 1           |



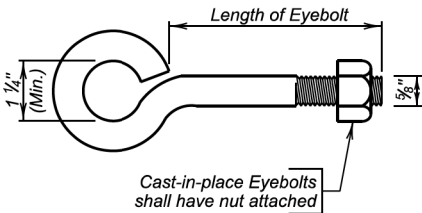
DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

- The fence and post details shown are for illustrative purpose only. The fence shall be as specified elsewhere in the plans.
- Eyebolts shall be placed on all of the box culvert wing walls.
- Eyebolts shall be 5/8 inch diameter and shall conform to ASTM A307.
- Eyebolts, nuts, and concrete inserts shall be galvanized in accordance with AASHTO M232 (ASTM A153). Concrete inserts of corrosion resistant material need not be galvanized.
- Cast-in-place eyebolts shall have a nut attached, be 4 1/2 inches (Min.) in length and shall be embedded such that the eye of the bolt is flush with the concrete surface. (See Eyebolt Details) As an alternate, cast-in-place concrete inserts, capable of developing the full strength of the 5/8 inch diameter threaded eyebolt, may be used and shall be set in the concrete in accordance with the manufacturer's recommendations. The eyebolt shall be of sufficient length to develop its full strength. The eye of the eyebolt shall be flush with the concrete surface.
- The cost for furnishing and installing eyebolts and/or concrete inserts shall be incidental to various contract items.



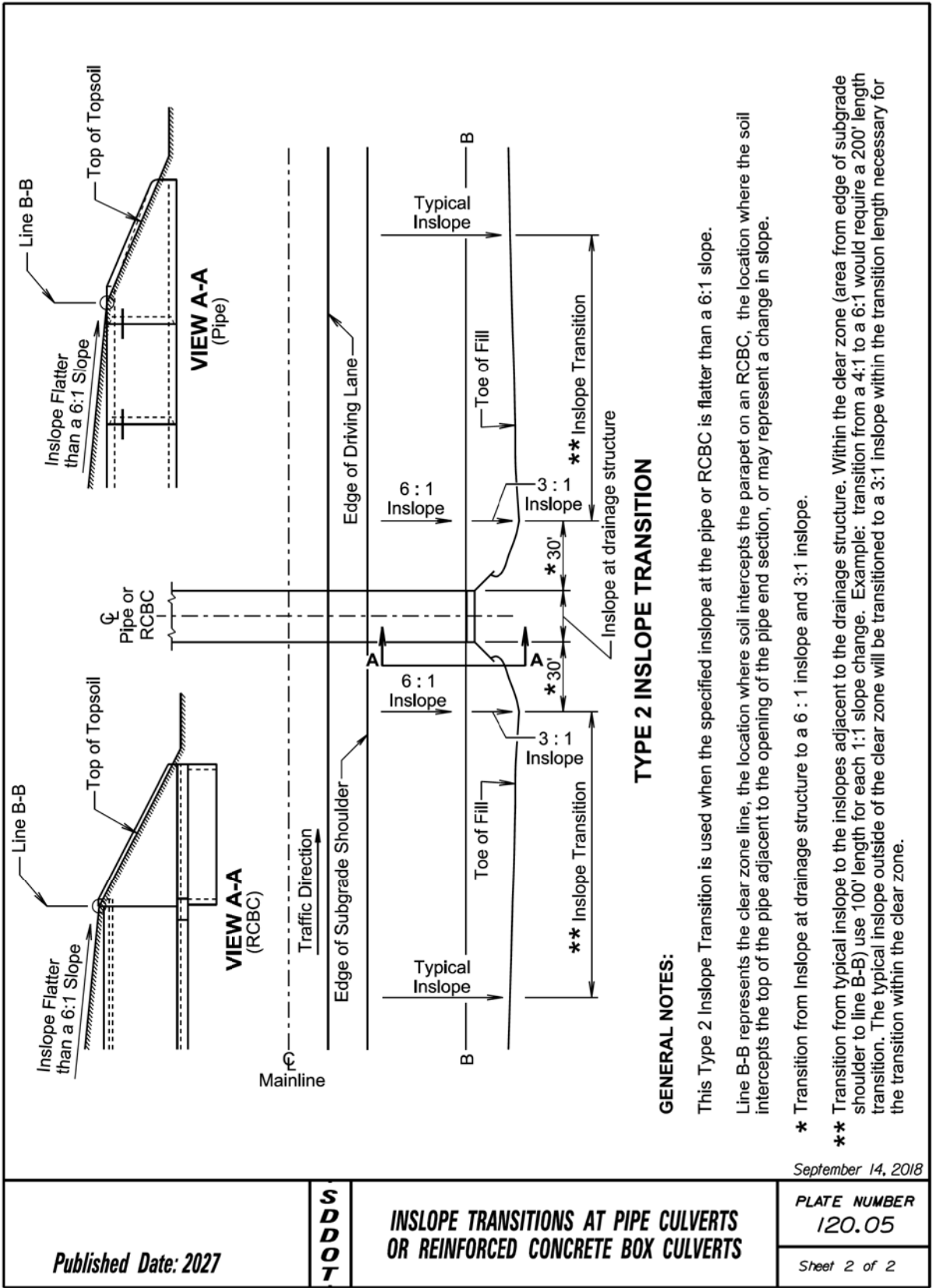
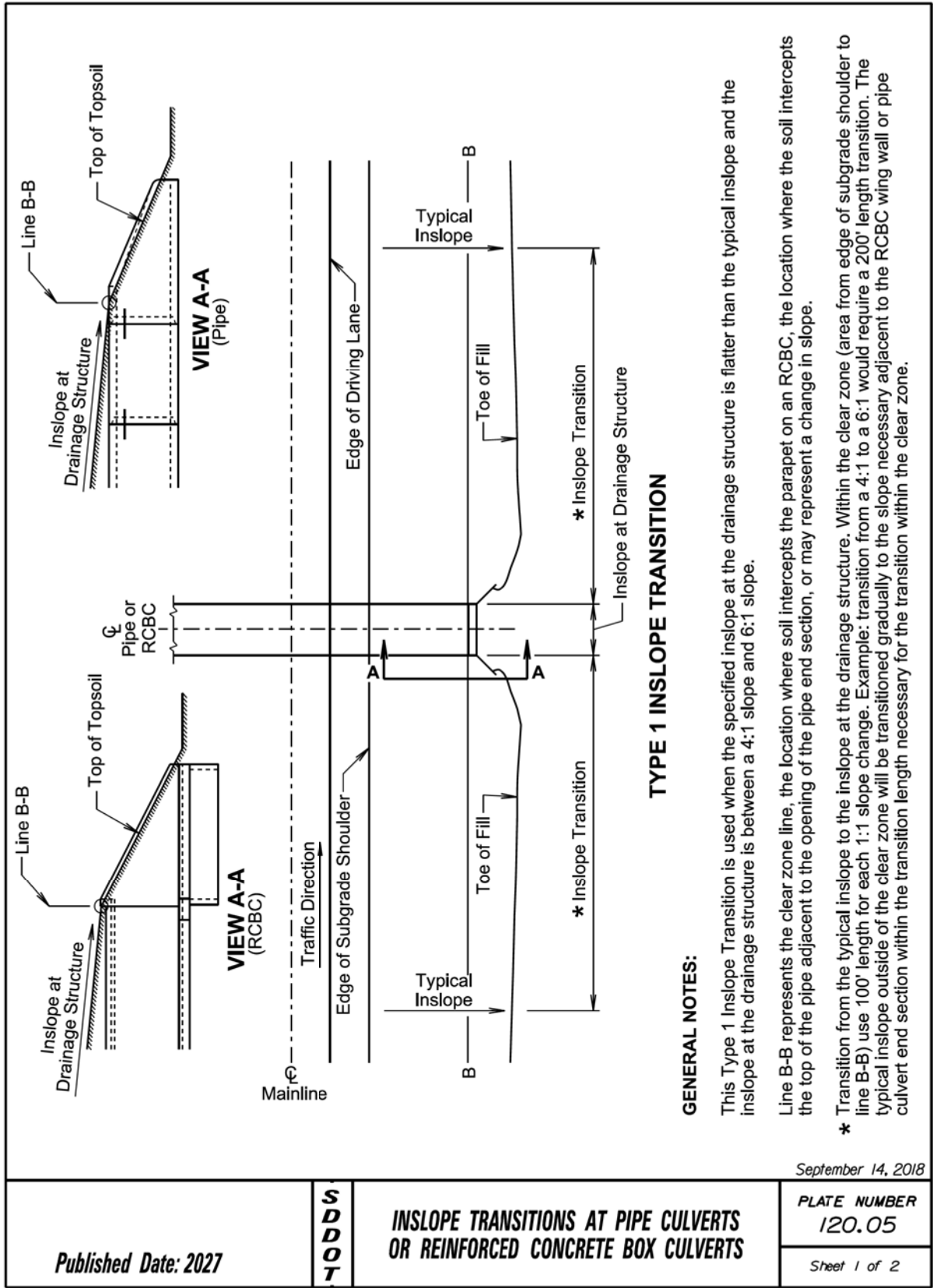
VIEW A - A

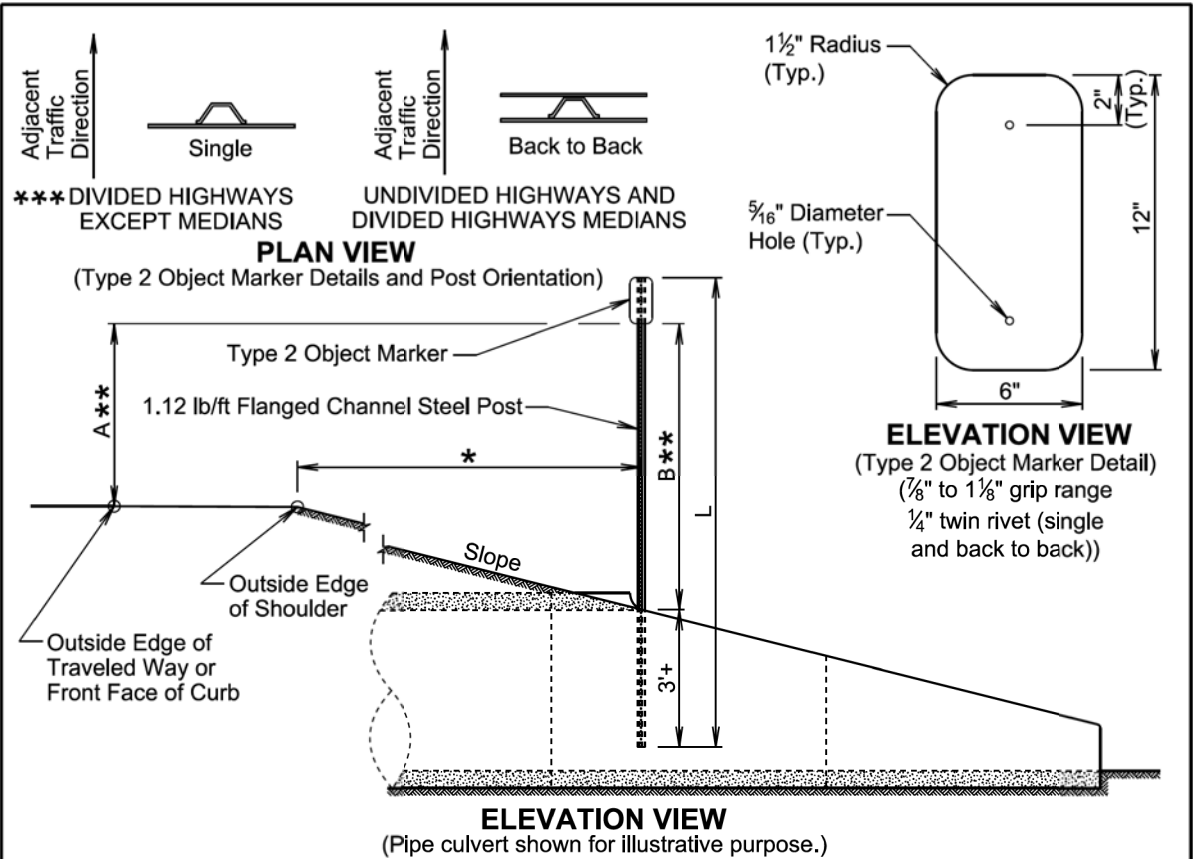


EYEBOLT DETAILS

December 23, 2012

|                      |                       |                                             |                        |
|----------------------|-----------------------|---------------------------------------------|------------------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | FENCE ANCHORS FOR<br>BOX CULVERT WING WALLS | PLATE NUMBER<br>620.16 |
|                      |                       |                                             | Sheet 1 of 1           |



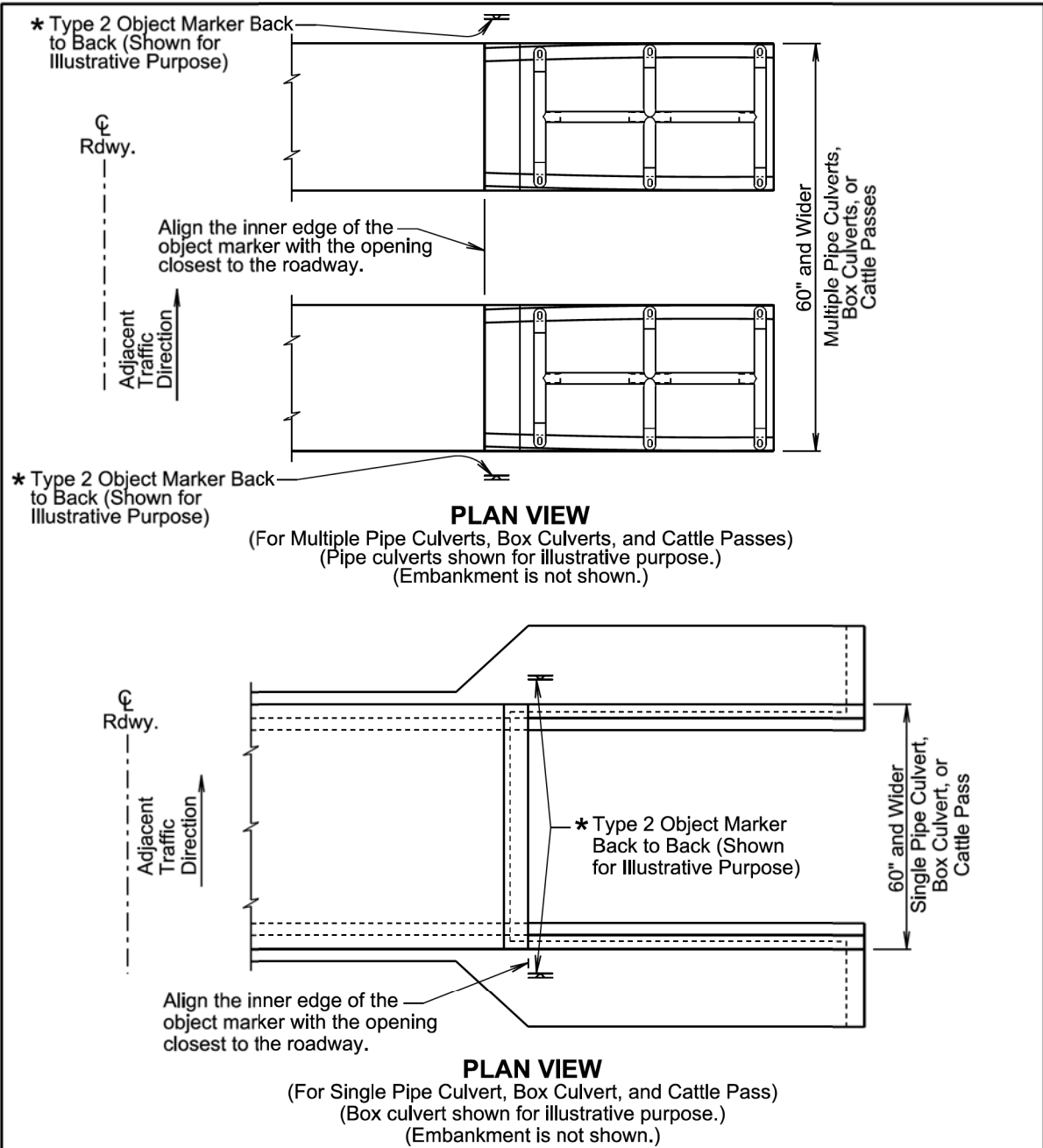


| TYPE 2 OBJECT MARKER POST LENGTHS |     |                 |       |       |       |       |        |        |                 |       |
|-----------------------------------|-----|-----------------|-------|-------|-------|-------|--------|--------|-----------------|-------|
| OFFSET<br>(*)                     | 1'  | 2'              | 3'    | 4'    | 5'    | 6'    | 7'     | 8'     | Greater Than 8' |       |
|                                   |     | POST LENGTH (L) |       |       |       |       |        |        |                 |       |
| SLOPE                             | 3:1 | 8'-6"           | 8'-9" | 9'-3" | 9'-6" | 9'-9" | 10'-3" | 10'-6" | 10'-9"          | 8'-0" |
|                                   | 4:1 | 8'-6"           | 8'-9" | 9'-0" | 9'-3" | 9'-9" | 9'-9"  | 10'-0" | 10'-3"          | 8'-0" |
|                                   | 5:1 | 8'-3"           | 8'-6" | 8'-9" | 9'-0" | 9'-3" | 9'-3"  | 9'-6"  | 9'-9"           | 8'-0" |
|                                   | 6:1 | 8'-3"           | 8'-6" | 8'-9" | 8'-9" | 9'-0" | 9'-3"  | 9'-3"  | 9'-6"           | 8'-0" |

- GENERAL NOTES:**
- \*\*\* The type 2 object marker may be installed back to back when specified in the plans.  
Post Length L was calculated based on a shoulder width of 6 feet at a crossslope of 4 percent and L was rounded up to the nearest 3 inches.
  - \*\* Dimension A is 4 feet when the Offset \* is 8 feet and less. Dimension B is 4 feet when Offset \* is greater than 8 feet.
  - The type 2 object marker and the 1.12 lb/ft flanged channel steel post will be in conformance with Specifications Section 982.2 J.
  - Payment for the type 2 object marker will be in conformance with Specification Section 632.5 B.

December 23, 2019

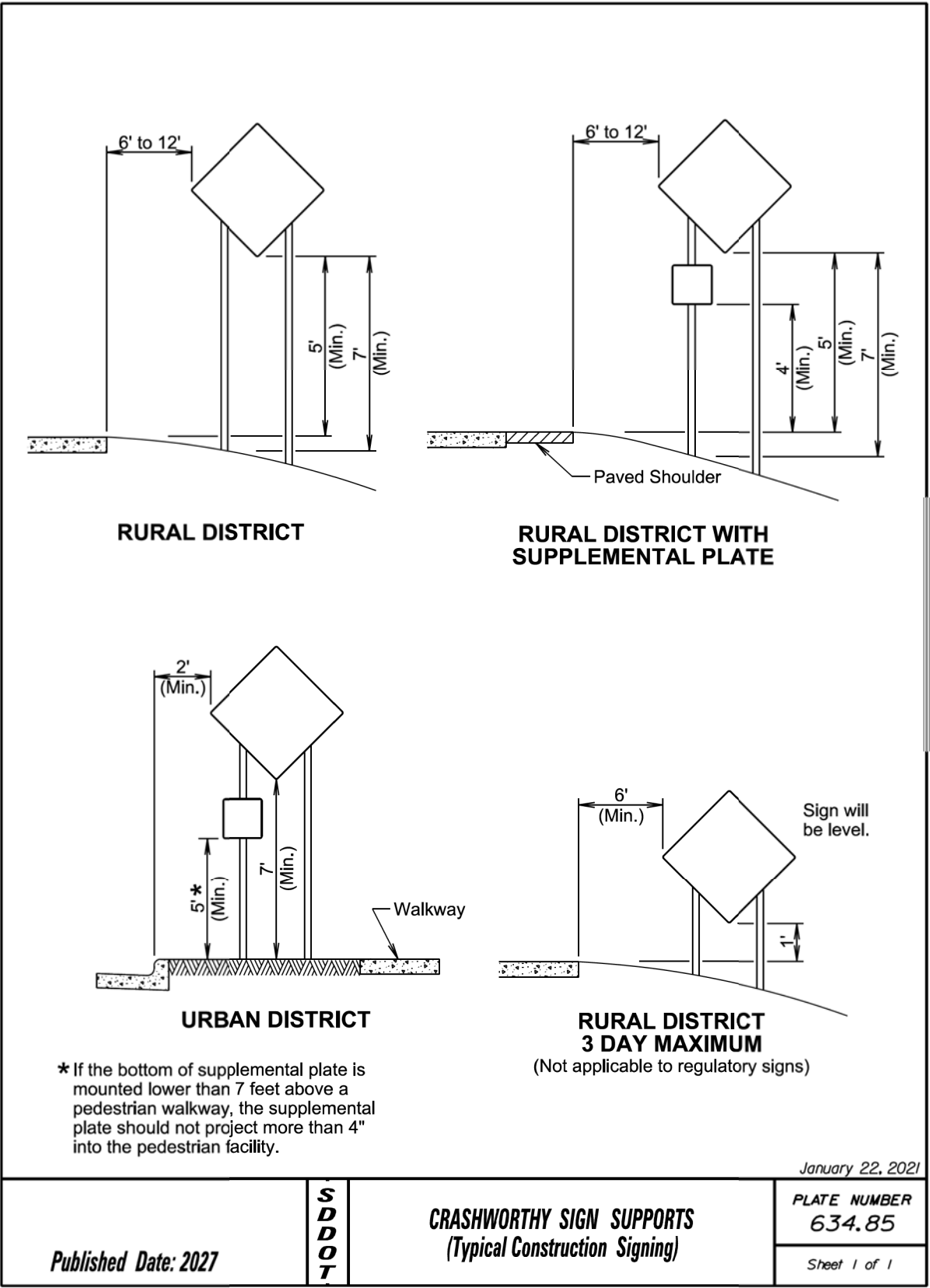
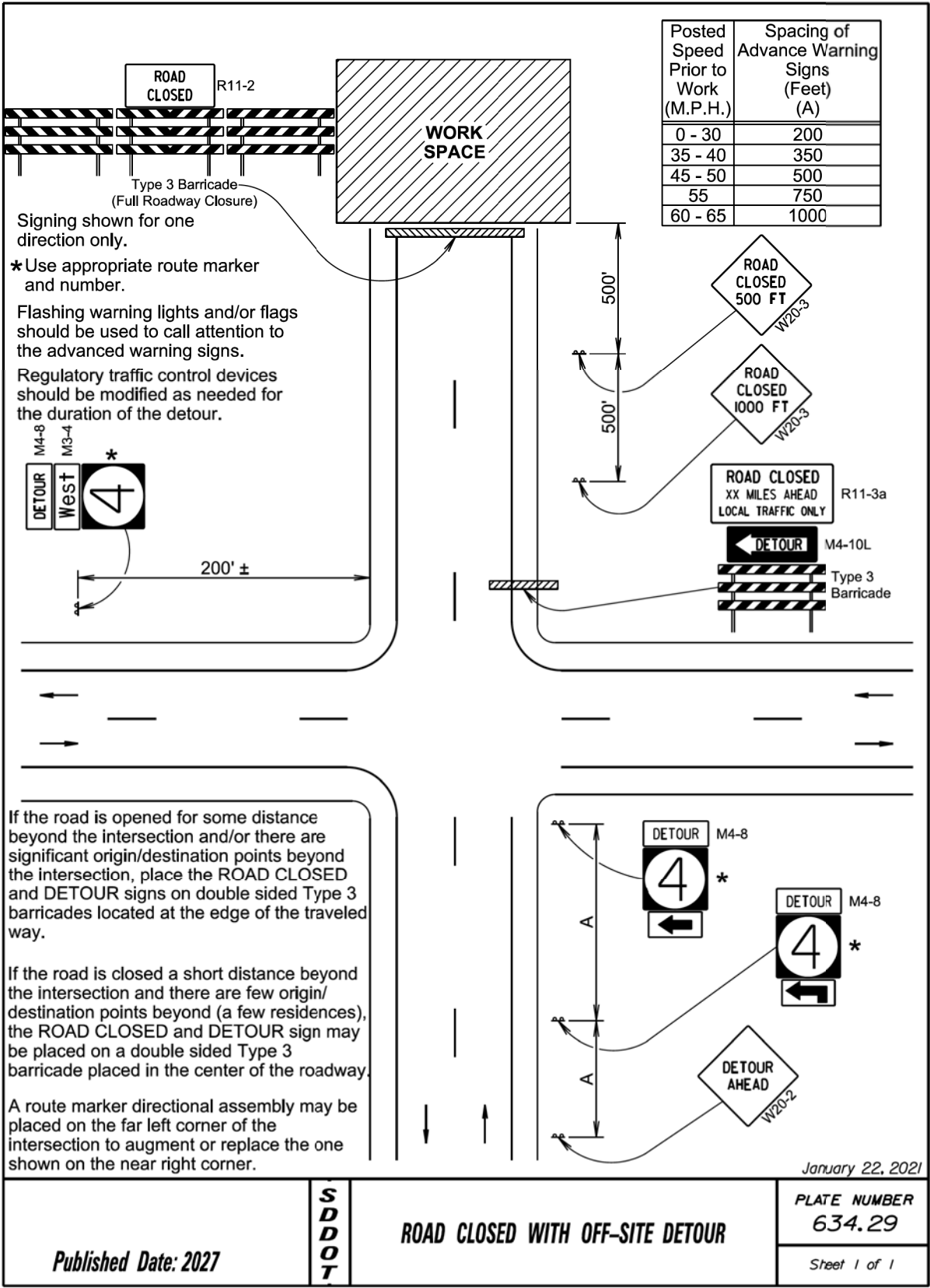
|                      |                       |                                        |                        |
|----------------------|-----------------------|----------------------------------------|------------------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | TYPE 2 OBJECT MARKER<br>(DIRECT DRIVE) | PLATE NUMBER<br>632.01 |
|                      |                       |                                        | Sheet 1 of 1           |

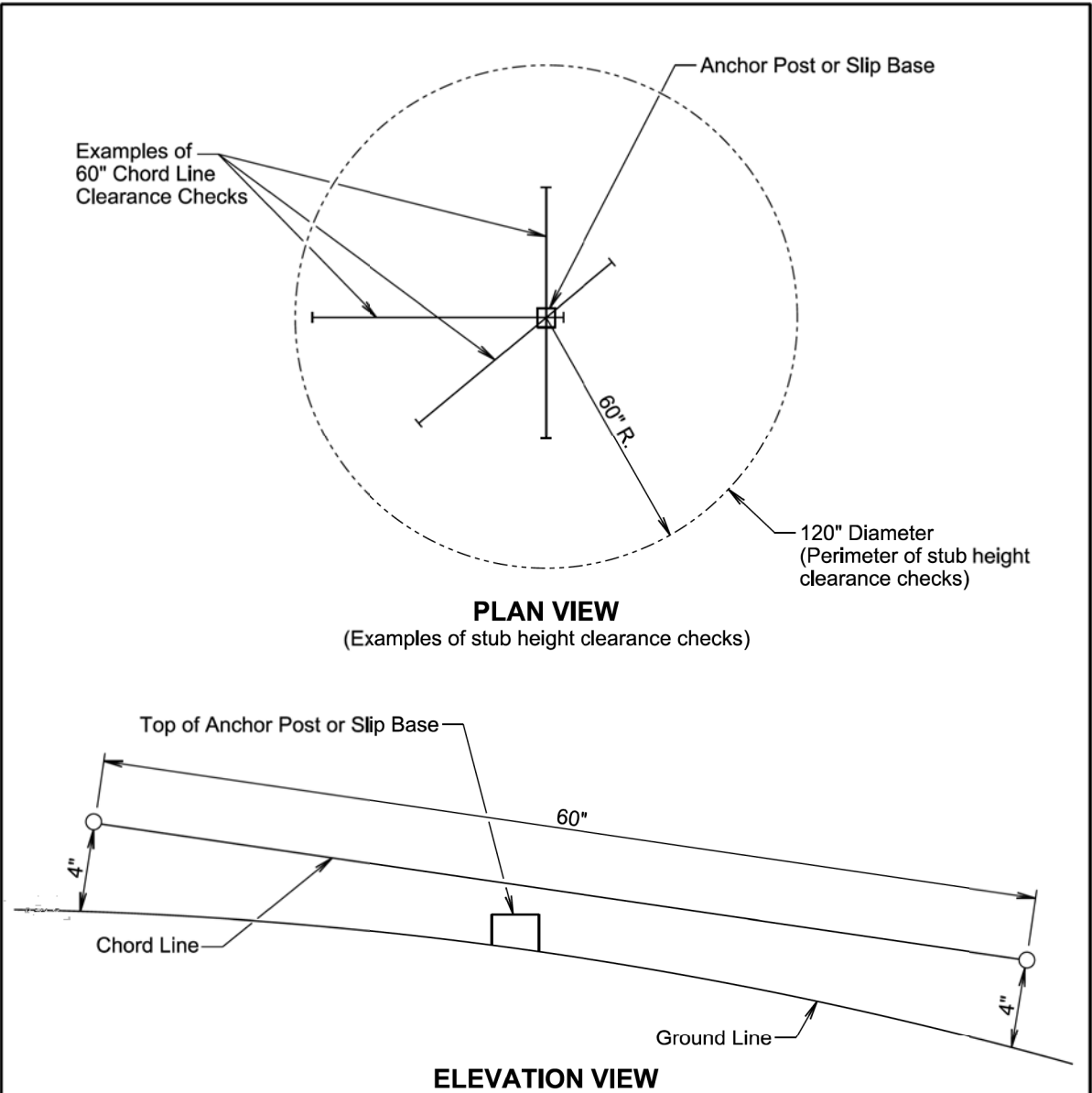


- GENERAL NOTES:**
- This standard plate will be used in conjunction with standard plate 632.01.
  - \* The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

December 23, 2019

|                      |                       |                                                                                                              |                        |
|----------------------|-----------------------|--------------------------------------------------------------------------------------------------------------|------------------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | TYPE 2 OBJECT MARKER AT PIPE<br>CULVERTS, BOX CULVERTS, AND CATTLE PASSES<br>(60" and Greater Overall Width) | PLATE NUMBER<br>632.04 |
|                      |                       |                                                                                                              | Sheet 1 of 1           |





GENERAL NOTES:

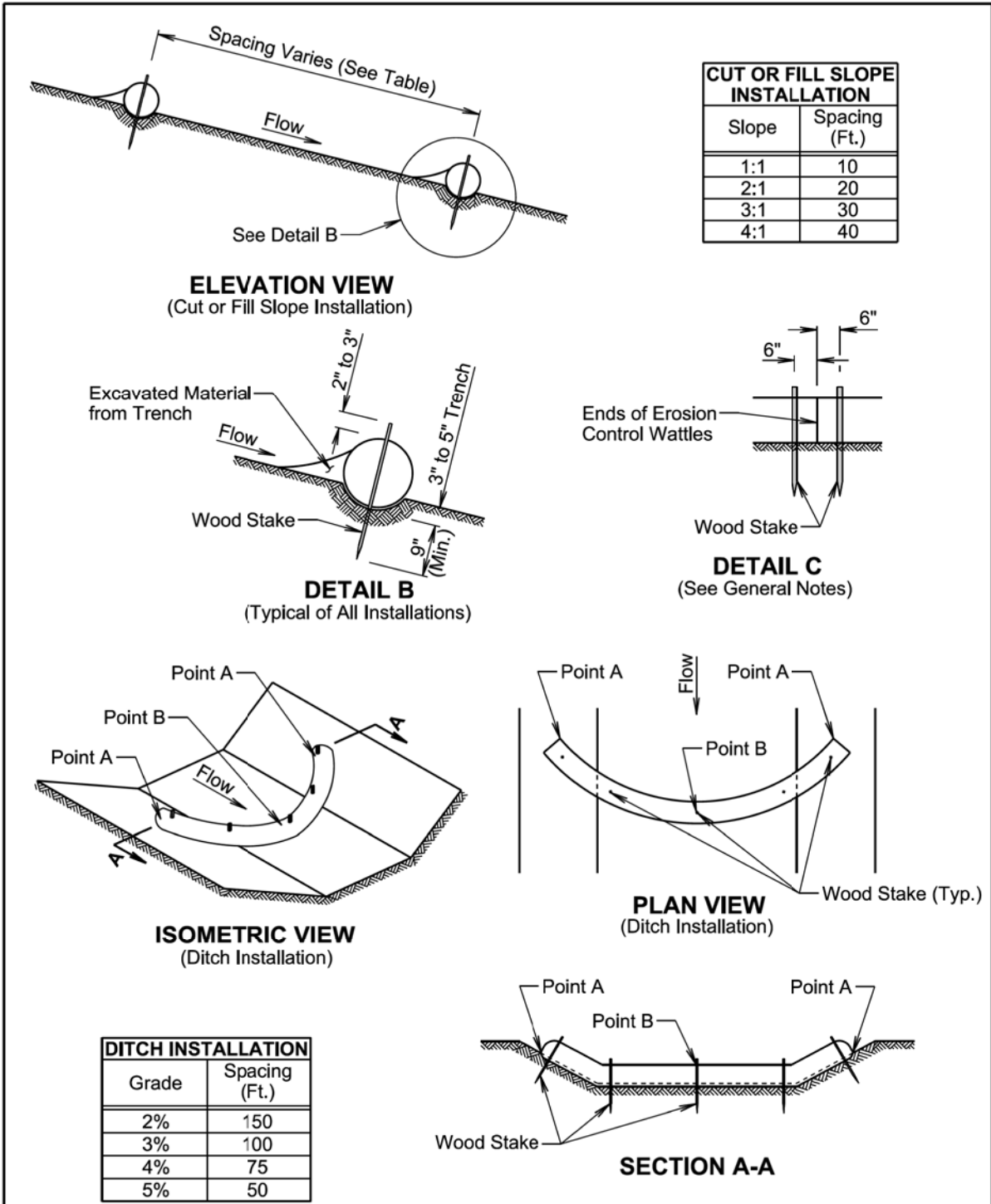
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

|                      |                       |                                  |              |
|----------------------|-----------------------|----------------------------------|--------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | BREAKAWAY SUPPORT STUB CLEARANCE | PLATE NUMBER |
|                      |                       |                                  | 634.99       |
|                      |                       |                                  | Sheet 1 of 1 |



February 14, 2020

|                      |                       |                        |              |
|----------------------|-----------------------|------------------------|--------------|
| Published Date: 2027 | S<br>D<br>D<br>O<br>T | EROSION CONTROL WATTLE | PLATE NUMBER |
|                      |                       |                        | 734.06       |
|                      |                       |                        | Sheet 1 of 2 |

|                       |             |                 |              |                 |
|-----------------------|-------------|-----------------|--------------|-----------------|
| Revised:<br>8-13-2026 | STATE<br>OF | PROJECT         | SHEET<br>NO. | TOTAL<br>SHEETS |
|                       | S.D.        | BRF-B 6399(190) | 29           | 36              |

**GENERAL NOTES:**

At cut or fill slope installations, wattles will be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor will dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes will be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

Where installing running lengths of wattles, the Contractor will butt the second wattle tightly against the first and will not overlap the ends. See Detail C.

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

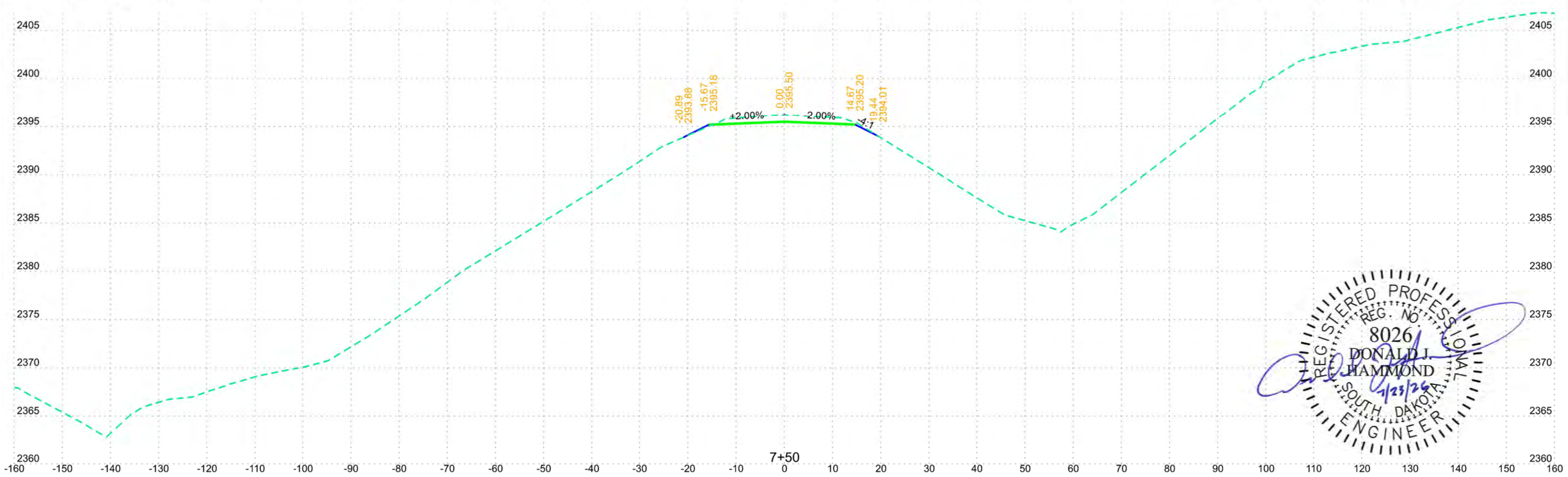
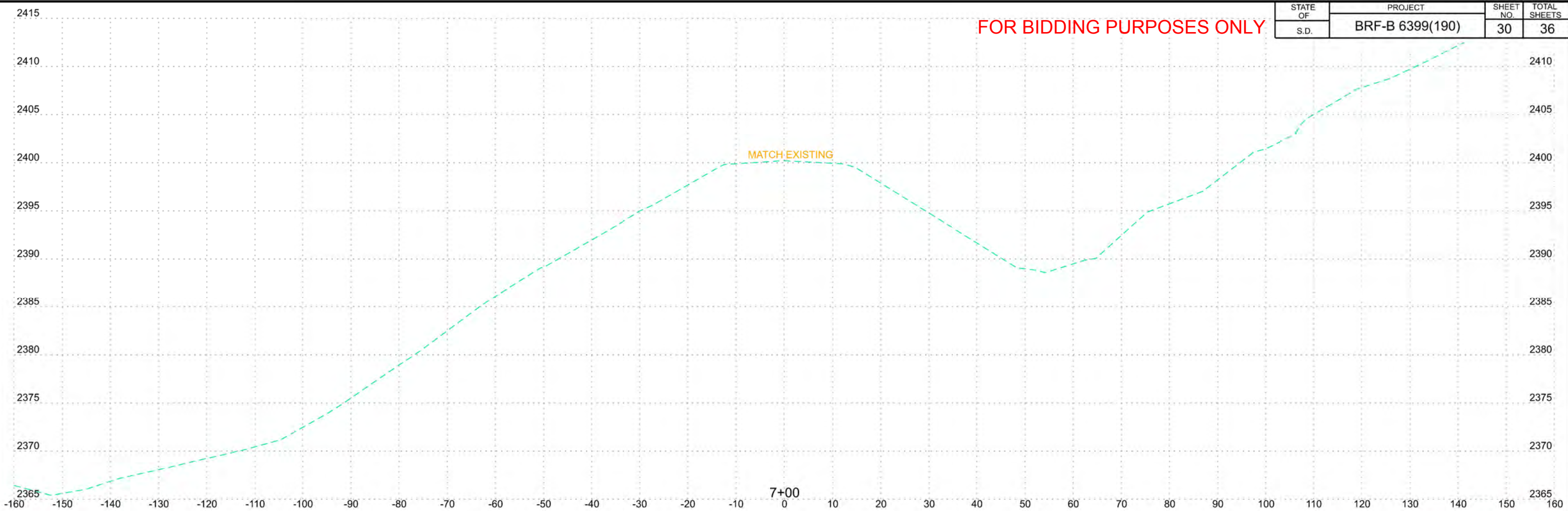
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February 14, 2020

|                             |                                  |                               |              |
|-----------------------------|----------------------------------|-------------------------------|--------------|
| <i>Published Date: 2027</i> | <b>S<br/>D<br/>D<br/>O<br/>T</b> | <b>EROSION CONTROL WATTLE</b> | PLATE NUMBER |
|                             |                                  |                               | 734.06       |
| Sheet 2 of 2                |                                  |                               |              |

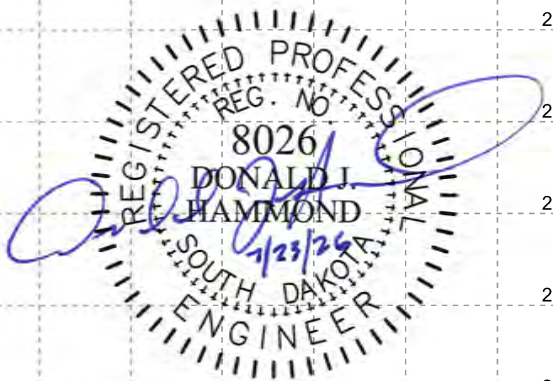
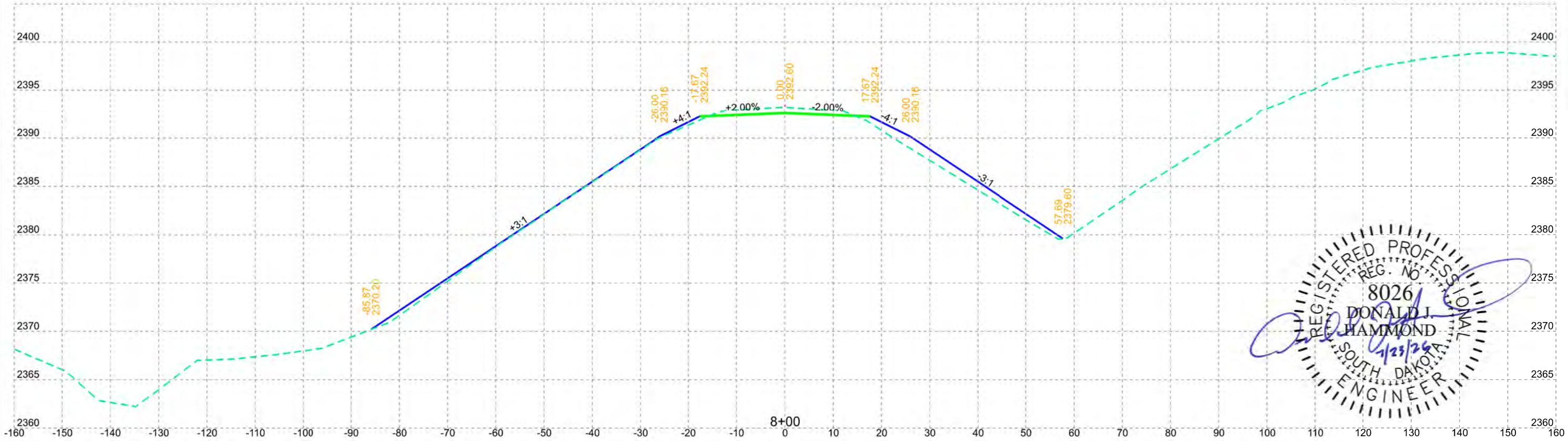
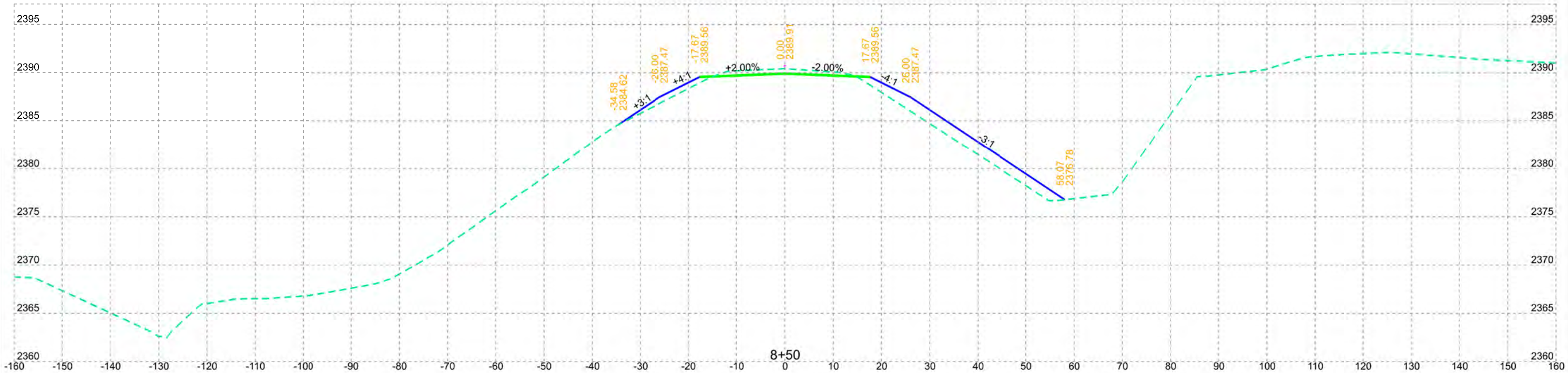
FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 30        | 36           |

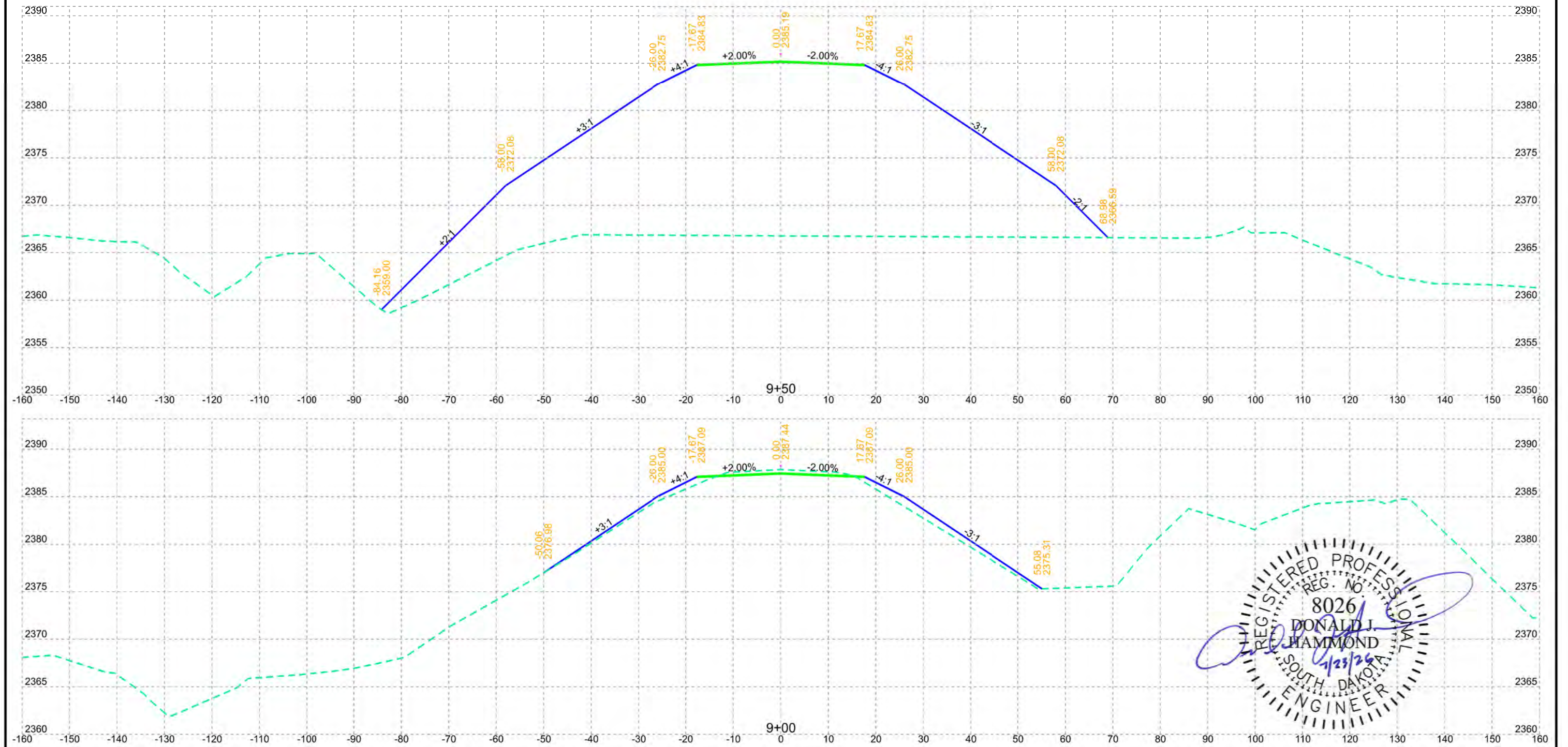


FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 31        | 36           |

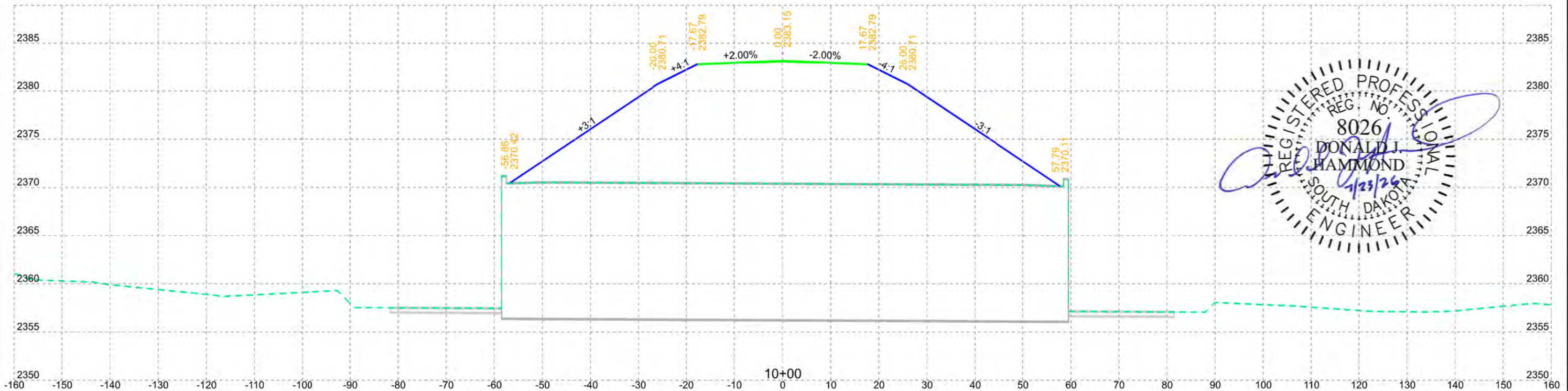
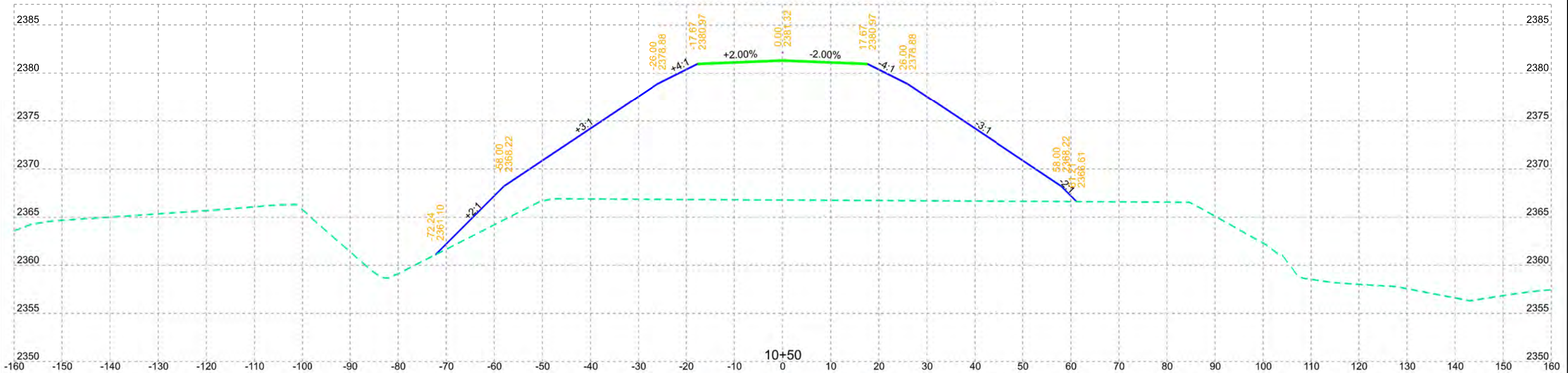


|             |                 |              |                 |
|-------------|-----------------|--------------|-----------------|
| STATE<br>OF | PROJECT         | SHEET<br>NO. | TOTAL<br>SHEETS |
|             | BRF-B 6399(190) | 32           | 36              |



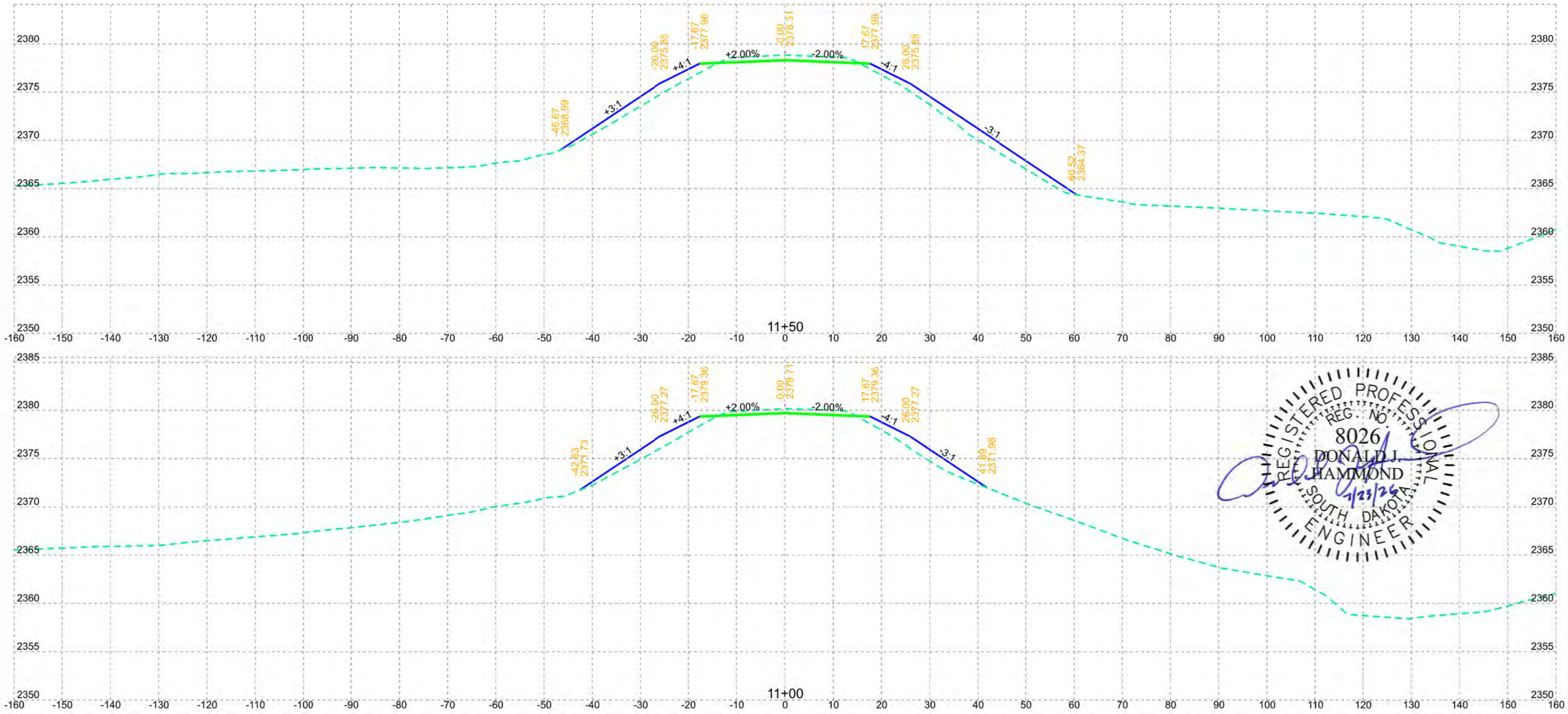
FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 33        | 36           |



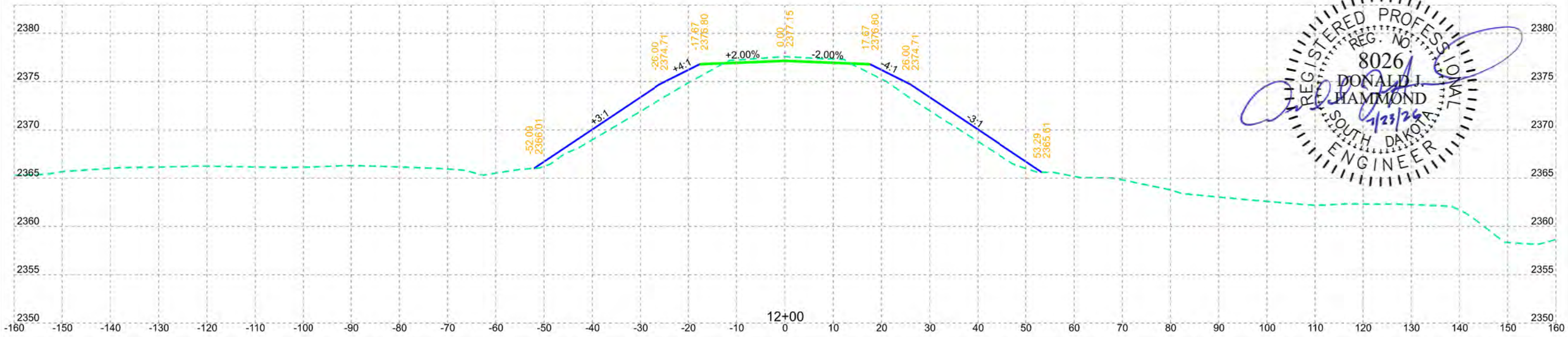
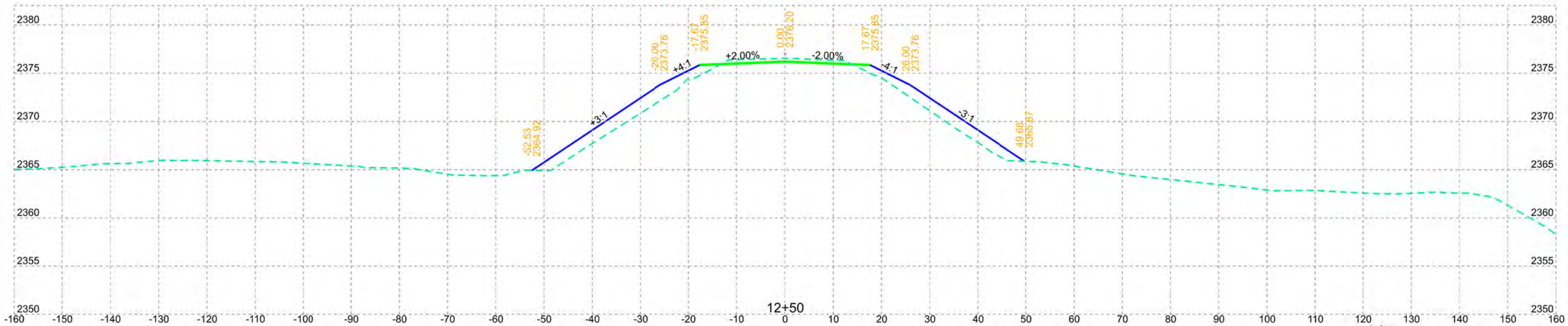
FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 34        | 36           |



FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 35        | 36           |



FOR BIDDING PURPOSES ONLY

| STATE OF | PROJECT         | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|-----------|--------------|
| S.D.     | BRF-B 6399(190) | 36        | 36           |

