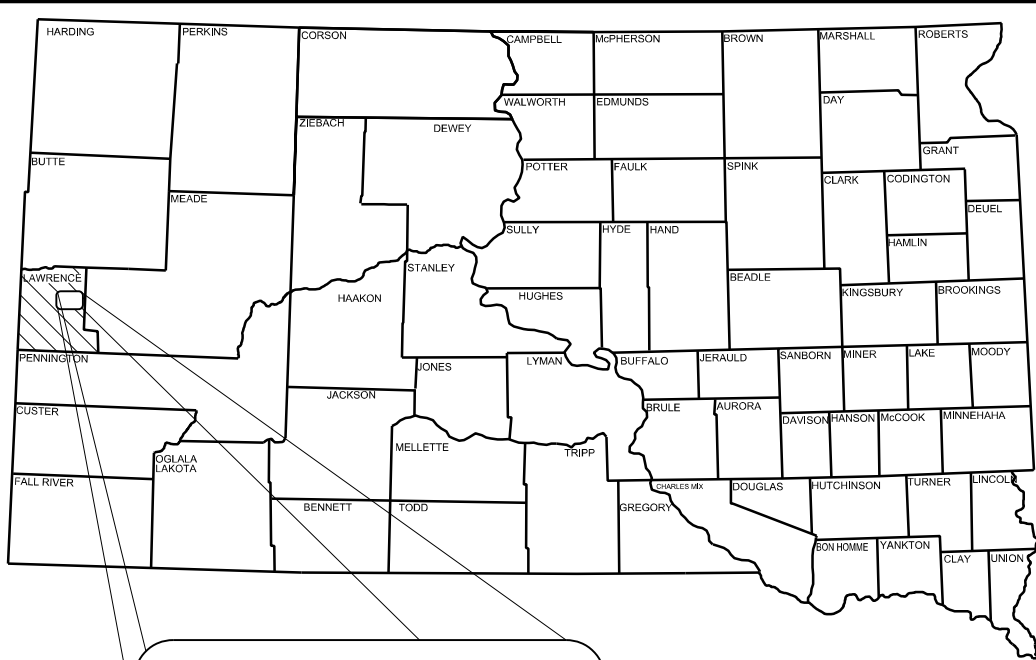


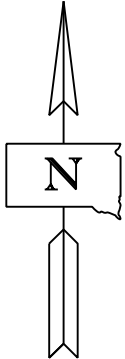


PROJECT LOCATION
2.0 miles East and 1.5 miles South of
Whitewood, SD on the Whitewood Service Road
over Spring Creek

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
PROJECT BRF-B 6545(04)
LAWRENCE COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING
Str. No. 41-228-112
PCN 08N0



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	1	53

INDEX OF SHEETS

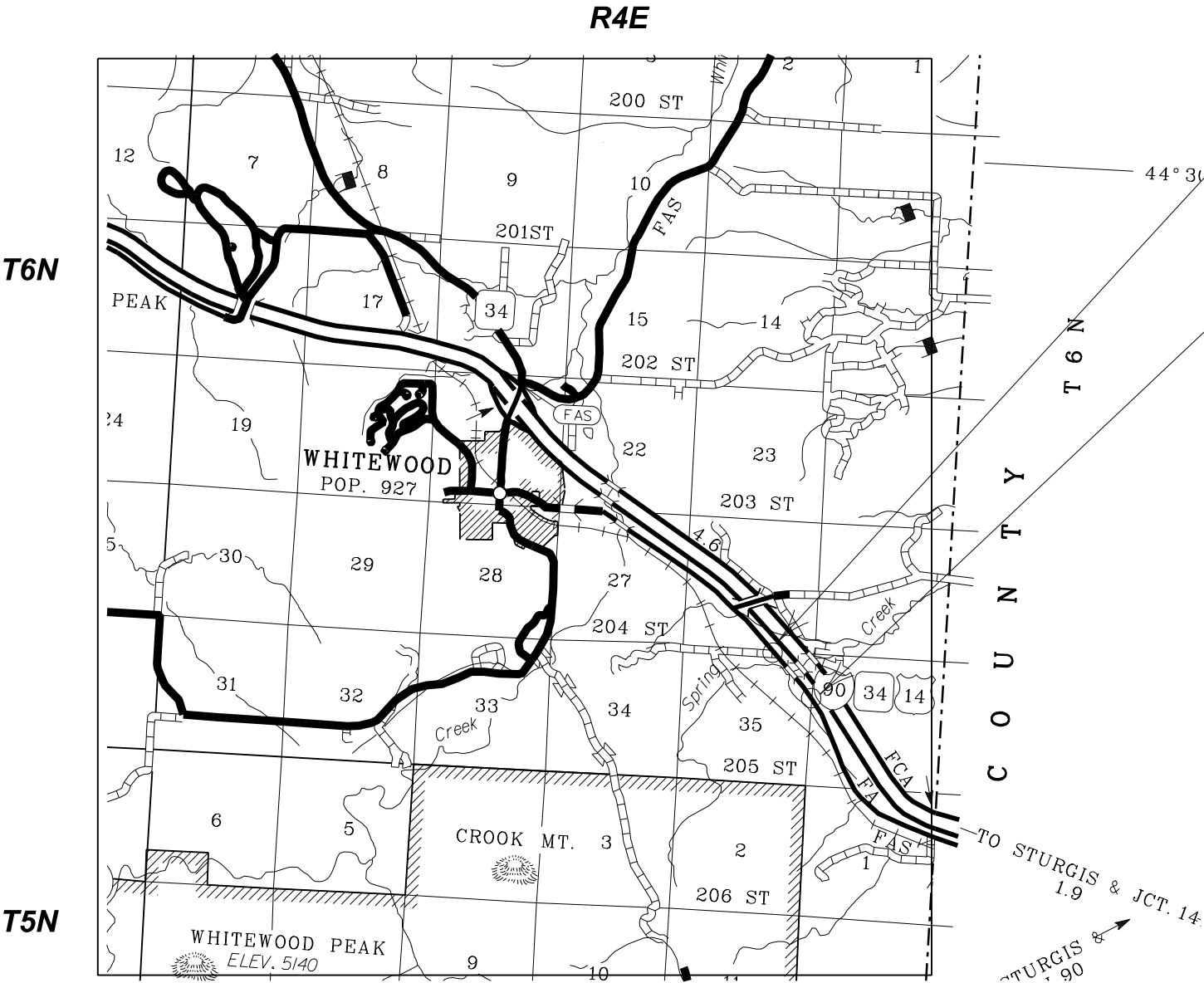
SHEET NO. 1	TITLE AND LAYOUT MAP
SHEET NO. 2-10	ESTIMATE OF QUANTITIES AND NOTES
SHEET NO. 11	TYPICAL DETAILS
SHEET NO. 12	TRAFFIC CONTROL
SHEET NO. 13	EASEMENTS
SHEET NO. 14	EROSION CONTROL
SHEET NO. 15-18	SWPPP NOTES
SHEET NO. 19	PLAN & PROFILE MAINLINE
SHEET NO. 20	PLAN & PROFILE TRAFFIC DIVERSION
SHEET NO. 21-29	STRUCTURE SHEETS
SHEET NO. 30-37	STANDARD PLATES
SHEET NO. 38	TRAFFIC DIVERSION PIPE CROSS SECTION
SHEET NO. 39-46	MAINLINE CROSS SECTIONS
SHEET NO. 47-53	TRAFFIC DIVERSION CROSS SECTIONS

DESIGN DESIGNATION

ADT (2021)	1050
ADT (2041)	1521
DHV	228
D	50.0%
T DHV	3.6%
T ADT	8.0%
V	55 mph

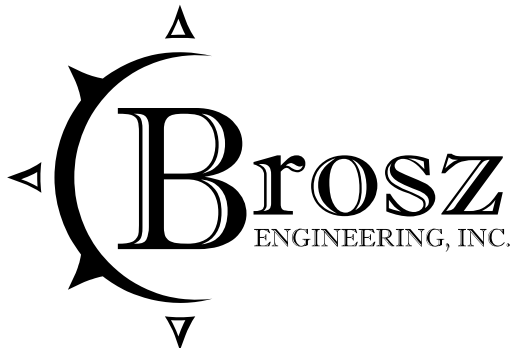
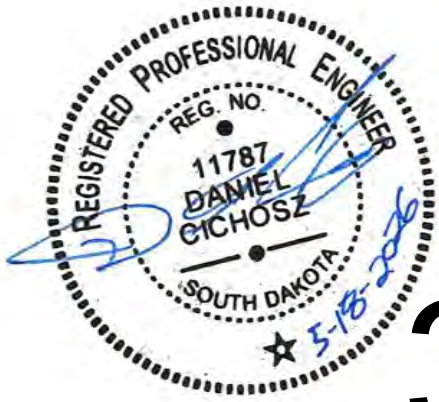
STORM WATER PERMIT DATA

Major Receiving Body of Water: Spring Creek
Area Disturbed: 4.0 Acres
Total Project Area: 5.5 Acres
Latitude: 44° - 26' - 34.9" N
Longitude: 103° - 35' - 26.6" W



End Project BRF-B 6545(04)
At Sta. 17+00

Begin Project BRF-B 6545(04)
At Sta. 0+00



3

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS FOR BIDDING PURPOSES ONLY

Revised 6/4/2026

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	2	53

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.777	Mile
009E3250	Miscellaneous Staking	0.455	Mile
009E3280	Slope Staking	0.455	Mile
009E3290	Structure Staking	1	Each
009E3301	Engineer Directed Surveying/Staking	40.0	Hr
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E1690	Remove Sediment	4.0	CuYd
120E0010	Unclassified Excavation	5,289	CuYd
120E0600	Contractor Furnished Borrow Excavation	8,234	CuYd
230E0010	Placing Topsoil	1,244	CuYd
250E0020	Incidental Work, Grading	Lump Sum	LS
260E1010	Base Course	1,430.0	Ton
260E1030	Base Course, Salvaged	2,751.0	Ton
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	2,751.0	Ton
* 320E1200	Asphalt Concrete Composite	1,255.0	Ton
450E4769	24" CMP 16 Gauge, Furnish	152	Ft
450E4770	24" CMP, Install	152	Ft
450E5410	24" CMP Safety End, Furnish	4	Each
450E5411	24" CMP Safety End, Install	4	Each
600E0200	Type II Field Laboratory	1	Each
632E2022	4"x4" White Delineator Back to Back with 1.12 Lb/Ft Post	16	Each
632E2510	Type 2 Object Marker Back to Back	4	Each
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	3,600	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	450	Ft
634E0010	Flagging	160	Hour
634E0110	Traffic Control Signs	278.2	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	6	Each
700E0210	Class B Riprap	455.0	Ton
730E0210	Type F Permanent Seed Mixture	288	Lb
731E0200	Fertilizing	3.0	Ton
732E0100	Mulching	8.0	Ton
734E0154	12" Diameter Erosion Control Wattle	1,600	Ft
734E0602	Low Flow Silt Fence	400	Ft
734E0610	Mucking Silt Fence	28	CuYd
734E0620	Repair Silt Fence	100	Ft
831E0110	Type B Drainage Fabric	670	SqYd

* Indicates Non-Participating Cost

STRUCTURE No. 41-228-112 QUANTITIES:

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0200	Structure Excavation, Box Culvert	107	CuYd
421E0200	Box Culvert Undercut	330	CuYd
460E0120	Class A45 Concrete, Box Culvert	240.4	CuYd
480E0100	Reinforcing Steel	37,255	Lb
700E0210	Class B Riprap	115.0	Ton
831E0110	Type B Drainage Fabric	157	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 A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.065 acres of stream (includes temporary and permanent) becoming impacted. Refer to the plans for location and boundaries of impacted streams.

Table of Impacted Streams

Stream Name	Station	Permanent Impact (Acres)	Temporary Impact (Acres)	Total Impact (Acres)
Spring Creek	9+45 to 10+15	0.027	0.038	0.065

Action Taken/Required:

It has been determined that project impacts do not require mitigation. Temporary impacts identified in the Table of Impacted Streams will not be mitigated as the finished ground under the bridge will be shaped to match the upstream channel and flood plain and the existing low water channel will be maintained as near as practical to the existing location as designated in the plans.

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 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.

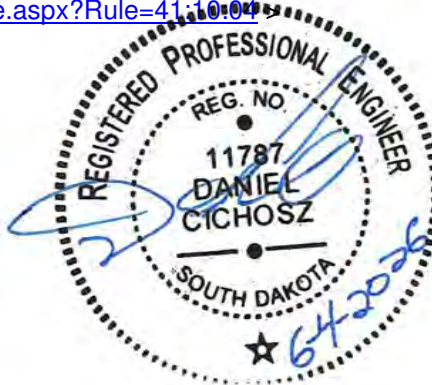
Action Taken/Required:

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.

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website: <https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx>

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> >



COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

Spring Creek is classified as a coldwater permanent fishery with a total suspended solids standard of less than 30 mg/L 30-day average, less than 53 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 Project Engineer using the following SDDOT Dewatering Info CDX form:

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

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 Authorization 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_CGPAppe ndixCCA2023Fillable.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/default.aspx> >

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

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	3	53

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) 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 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.

Table of U.S. Waterways to Protect

Station	Waterway	Ordinary High-Water Elevation
10+00	Spring Creek	3498.6'

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 M: SECTION 4(f)/6(f) RESOURCES

COMMITMENT M1: SECTION 4(f) PROPERTY

A Section 4(f) Evaluation concluded there are no feasible and prudent alternatives to avoiding Section 4(f) property located within the project.

Table of Section 4(f) Property

Station	Section 4(f) Property
4+00 to 18+25 (L and R)	ESS-1
9+75 to 10+25 (L and R)	Historic Structure 41-228-112

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	4	53

The following measures are required to minimize harm to the above Section 4(f) property:

- Construction activities, staging, and/or storage of construction equipment or materials will not take place outside proposed construction limits without prior approval from the Project Engineer in coordination with the Environmental Office.
- Archaeological monitoring as stipulated in Commitment Q below.

The Contractor is not permitted to stage equipment or materials within [name of park(s)]. The Contractor will notify the Project Engineer if additional easement is needed to complete the work adjacent to any Section 4(f) property. The Project Engineer will obtain an appropriate course of action from the Environmental Office before proceeding with construction activities that affect any Section 4(f) property.

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.

COMMITMENT Q: ARCHAEOLOGICAL COORDINATION

As a result of a Cultural Resources Survey, historic properties have been identified within and/or adjacent to the project rights-of-way.

The following historic properties have been identified that require avoidance of construction activities:

Table of Historic Properties

Station	Offset (Ft.)	L/R	Environmental Sensitive Site	Action
4+00 to 18+25	N/A	L/R	ESS-1	Monitor

Any earth disturbing activities occurring during construction will require monitoring.

Action Taken/Required:

If evidence for cultural resources is uncovered 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 consult with the Archaeological Research Center (ARC), Tribal Historic Preservation Offices (THPO) who have specified an interest in Lawrence County, SD, SHPO, and FHWA, to determine the appropriate course of action.

All artifacts, features, or other items of interest uncovered by project construction activities will not be displaced unless the landowner and the SHPO consent to it.

The Contractor is responsible for ensuring ARC is present to conduct monitoring for the site(s) identified in the above table during construction activities.

Prior to the pre-construction meeting, the Contractor will contact ARC (Phone: 605-394-1936) to be present at the meeting for the purposes of coordinating the monitoring schedule of the site(s) listed in the Table of Historic Properties. Work within vicinity of the site(s) will not begin until monitors are present at the site(s).

All costs associated with monitoring will be submitted to the Project Engineer for reimbursement.

Before earth disturbing activities near listed sites occurs, there will be seven (7) days prior notification provided to ARC for scheduling the installation of orange safety fence and/or monitoring at sensitive sites listed in the Table of Culturally Sensitive Sites. An ARC monitor is to be present during earth disturbing activities to monitor the removal of topsoil, ensure avoidance of the fenced sites, and identify any culturally sensitive sites that may be uncovered.

These identified sites cannot be used for material sources, storage areas, waste sites, and/or any other project related activities outside the plan work limits.

COMMITMENT S: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor will adhere to the “Special Provision for Fire Plan”.

LAWRENCE COUNTY REQUIREMENTS

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

1. Right of way and temporary and permanent easements.
2. Coordination of any utility adjustments.
3. Payment of asphalt concrete surfacing.
4. Furnish and install temporary and-or permanent fencing.
5. Remove silt fence in permanently seeded areas after vegetation is established.

GRADING OPERATIONS

Compaction of the earth embankment material will be governed by the Specified Density Method.

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.

TYPE II FIELD LABORATORY

The lab will be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection will be provided with a multi-port wireless router. The internet connection will be a minimum speed of 5 Mbps unless limited by job location and approved by the DOT. Prior to installing the wireless router, the Contractor will submit the wireless router’s technical data to the Area Office to check for compatibility with the state’s computer equipment. The internet connection is intended for state personnel usage only. The Contractor’s personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. These items will be incidental to the contract unit price per each for “Type II Field Laboratory”.

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. The County has cleared the trees, the stumps still remain to be cleared.

UTILITIES

The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of the 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 County Highway Superintendent is John Bey 1-605-578-2183

SDN Communications LLC
1089 Rand Road
Rapid City, SD 57702
(605) 978-1059

Midcontinent Communications
537 Century Road
Rapid City, SD 57702
(605) 787-3935

WBI Energy Transmission
16636 Williston Basin Road
Belle Fourche, SD 57717
(605) 892-2110

Century Link
612 Mt Rushmore Road
Rapid City, SD 57701
(605) 394-4720

TRAFFIC DIVERSION

The traffic diversion is located at Sta. 101+00.00 to 108+00.00. The traffic diversion will be constructed according to Section 5.14 B of the Specifications. Installation and removal of the traffic diversion will meet all requirements as set forth in the South Dakota Surface Water Quality Standards.

The structure(s) will be placed at the flowline elevation and location as stated in the “Table of Temporary Drainage Structures in Traffic Diversions”. If the Contractor proposes to use a different size drainage structure and/or a different geometric layout for the temporary diversion, the proposal must be submitted to the Engineer prior to the project preconstruction meeting.

Revised 6/4/2026
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	5	53

This information will be forwarded to the Office of Brosz Engineering, Inc. for review. Construction of the traffic diversion(s) will not be allowed until approval of the proposal is obtained from Brosz Engineering, Inc.

Table of Temporary Drainage Structures in Traffic Diversions

Traffic Diversion Location	Design Flood Frequency	* Flowline Elevation	Temporary Structure Option 1	Temporary Structure Option 2
104+95	Q2	3495.5	1-42” CMP	2-30” CMP

* The flowline elevation is at the inlet end of the temporary drainage structure in the traffic diversion.

Costs to provide temporary drainage structures will be incidental to the contract lump sum price for “Maintenance of Traffic Diversion(s)”.

Traffic diversions in waterways will be constructed such that any material placed below the ordinary high water elevation, Q2, (estimated as elevation 3498.6 at Sta. 104+95 in the 404 application) will be stabilized with riprap.

If riprap is used the quantity of riprap and fabric used in the traffic diversion will be paid for as “Class B Riprap” and “Type B Drainage Fabric” in the estimate of quantities.

The quantity of riprap used for the traffic diversion will be reused around the structure. All costs incurred to place and remove the riprap at the traffic diversion and subsequently place the riprap at the structure will be incidental to the contract unit price per Ton for “Class B Riprap”. The traffic diversions will be built in close conformity to the plan grade line.

The quantity of Unclassified Excavation and Contractor Furnished Borrow Excavation needed to construct the traffic diversion is shown in the table on the Traffic Diversion Plan and Profile sheets. The topsoil will be removed from the limits of the traffic diversion prior to construction and replaced upon removal of the traffic diversion. The quantities for earthwork are included for the respective bid items in the Estimate of Quantities.

Maintenance of Traffic Diversion(s) will consist of furnishing and installing the temporary drainage structure, maintaining the driving surface for the traveling public, and maintaining the inslopes against possible erosion to protect the integrity of the diversion; as directed by the Engineer.

Once the structure is reopened to traffic, the traffic diversion will be removed. The Base Course on the diversion will be picked up and wasted or placed on the approaches. The creek banks will be restored.

Embankment material resulting from the removal of the traffic diversion that cannot be reused will be wasted in accordance with the Environmental Commitments notes.



TRAFFIC DIVERSION (CONT.)

The traffic diversions will be removed such that the original ground surface is restored and the hydraulic capacity of the waterway is maintained. The removal will be done in such a manner that there is minimal disturbance to the riverbed.

All costs associated with removal of the embankment material, base course surfacing and placing on approach, and temporary drainage structure will be incidental to the contract lump sum price for "Remove Traffic Diversion".

TABLE OF TRAFFIC DIVERSION RIPRAP AND DRAINAGE FABRIC

Station	L/R	Ordinary High Water Elevation	Traffic Diversion Riprap (Ton)	Section E Class B Riprap (Ton)	Section B Class B Riprap (Ton)	Type B Drainage Fabric (SqYd)
104+75	L&R	3498.6	285.0	-	-	335
105+25	L&R	3498.6	285.0	-	-	335
		Totals	570.0	115.0	455.0	670

SHRINKAGE

A shrinkage factor for embankment of plus 25% was used.

UNCLASSIFIED EXCAVATION

All excavation that must be performed to construct the new grade in conformance with the cross sections and plan details will be included in the contract unit price per cubic yard for "Unclassified Excavation".

The plans quantity for "Unclassified Excavation" as shown in the Estimate of Quantities will be the basis of payment for this item without further field measurement. If changes are necessary on construction, the altered quantities will be measured for payment.

TABLE OF UNCLASSIFIED EXCAVATION

Excavation (Mainline)	2,398
Topsoil (Mainline)	941
Salvage and Stockpile Asphalt Mix and Granular Base Material	1,467
Excavation (Traffic Diversion)	180
Topsoil (Traffic Diversion)	303
Total	5,289

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. Restoration of the Contractor Furnished Borrow Excavation Site will be the responsibility of the Contractor. The plans quantity for "Contractor Furnished Borrow Excavation" as shown in the Estimate of Quantities will be the basis of payment for this item without further field measurement. If changes are necessary on construction, the altered quantities will be measured for payment.

TABLE OF CONTRACTOR FURNISHED BORROW EXCAVATION

Borrow Excavation (Mainline)	5,513
Borrow Excavation (Traffic Diversion)	2,721
Total	8,234

INCIDENTAL WORK, GRADING

All costs involved in culvert removal will be incidental to the contract lump sum price for "Incidental Work, Grading".

It will be the Contractor's responsibility to contact and to coordinate their work schedule with the Lawrence County Highway Department. Cost for this work will be incidental to the contract lump sum price for "Incidental Work, Grading".

The cost for water required for embankment and granular material will be incidental to the contract lump sum price for "Incidental Work, Grading".

CORRUGATED METAL PIPE

Corrugated metal pipes will have 2 3/4-inch x 1/2-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes will have 3-inch x 1-inch or 5-inch x 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

The gauge of the corrugated metal ends will match the thickest gauge of corrugated metal pipe it is connected to.

PIPE FOR APPROACHES

Class 2 reinforced concrete pipe, high density polyethylene pipe, polypropylene pipe (will be in conformance with AASHTO M330), or steel reinforced polyethylene pipe may be substituted for corrugated metal pipe at approaches and intersecting roads at no additional cost to the State.

If corrugated metal pipes are provided, the pipes will be as specified in the CORRUGATED METAL PIPE note.

If high density polyethylene pipe, polypropylene pipe (will be in conformance with AASHTO M330), or steel reinforced polyethylene pipe are provided, then the end sections will be metal, be compatible, and conform to the type of end section as shown in the plans.

SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

An estimated 2,751.0 tons of asphalt mix and granular base material shown in the estimate of quantities 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. 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.

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

The cost for all labor, materials, and equipment needed to process, remove, and stockpile the salvaged surfacing will be included in the contract unit price per Ton for "Salvage and Stockpile Asphalt Mix and Granular Base Material".

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.

FOR BIDDING PURPOSES ONLY

BASE COURSE, SALVAGED

Material obtained from the "Salvaged and Stockpile Asphalt Mix and Granular Base Material" will be reused as Base Course, Salvaged and may be placed without further gradation testing.

Upon completion of the excavation and construction of the mainline subgrade, the Contractor will place and compact the salvage material on the finished subgrade to serve as base material. The rate of application of the salvage material will be determined in the field by the Engineer.

Water may be required to achieve compaction. Water for salvaged material is estimated at the rate of 30 gallons of water per cubic yard, to bring the material to +/- 2% of optimum moisture at the time of construction.

BASE COURSE

A quantity of 510 tons of Base Course is included in the plans for base material on the traffic diversion and 920 tons on road mainline. The diversion will receive 4 inches total of base material. The mainline Base Course will be placed above the Base Course, Salvaged and compacted to achieve a total depth of 8 inches.

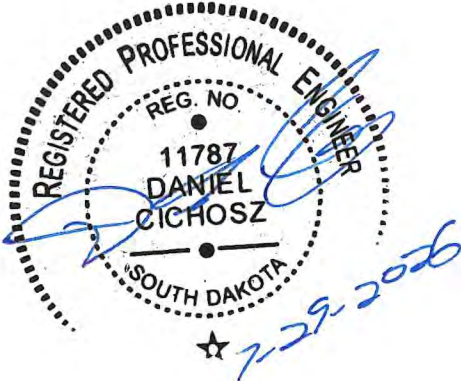
ASPHALT CONCRETE COMPOSITE

A mix design of this mineral aggregate and the required asphalt cement will be submitted by the Contractor for the Engineer's approval prior to any work taking place at the project site.

Pave field approaches with a 5' bump out per standard plate 320.01.

TRAFFIC CONTROL GENERAL NOTES:

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.



TRAFFIC CONTROL GENERAL NOTES (CONT):

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

It is required that the flaggers be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for “Flagging”.

TOPSOIL

The plans quantity for “Placing Topsoil” as shown in the Estimate of Quantities will be the basis of payment for this item without further field measurement. If changes are necessary on construction, the altered quantities will be measured for payment.

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.

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>

PERMANENT SEEDING

The areas to be seeded comprise of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation. All disturbed areas will be ripped prior to seed application. 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; Winter Wheat: August through November		56
Total:		72

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 for temporary stabilization.

Revised 6/4/2026
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	7	53

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. Erosion control wattles may 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: <<http://sddot.com/business/certification/products/Default.aspx>>

TABLE OF EROSION CONTROL WATTLE

Station	L/R	Diameter (Inch)	Location	Quantity (Ft)
5+90 to 6+00	LT	12	Inlet of Culvert	50
7+50 to 10+00	LT	12	Edge of Diversion	300
10+25 to 13+25	RT	12	Edge of Diversion	300
13+50 to 13+60	LT	12	Inlet of Culvert	50
102+00 to 104+75	LT	12	Edge of Easement	330
150+00 to 108+00	LT	12	Edge of Easement	400
ADDITIONAL QUANTITY				170
Total				1,600



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	8	53

REMOVE SEDIMENT

This work will consist of removing sediment collected by the temporary erosion and sediment control devices after a rainfall event.

Any sediment collected on the upstream side of the sediment control device that would render the sediment control device ineffective will be removed by the Contractor and blended back into the cut or fill of the graded area.

The Contractor and Engineer will inspect and maintain the sediment control devices once every week and within 24 hours after every rainfall event greater than 1/2".

All costs for removing and disposing of sediment collected by the sediment control device will be incidental to the contract unit price per cubic yard for "Remove Sediment".

LOW FLOW SILT FENCE

The low flow silt fence fabric provided will be from the approved product list. The approved product list for low flow silt fence may be viewed at the following internet site:

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

Low flow silt fence will be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

The quantity of Low Flow Silt Fence in the Estimate of Quantities is for temporary sediment control.

TABLE OF LOW FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
9+75	LT	Edge of Channel	50
10+25	LT	Edge of Channel	50
104+75 to 106+75	LT	Edge of Easement	236
Additional Quantity:			64
Total:			400

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer's recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 B.

Reflective media will consist of glass beads as reflective elements will be adhered to the paint. Reflective media will consist of glass beads.

High Build Waterborne Pavement Marking Paint applied after October 15 must be formulated as cold-weather waterborne paint. Cold weather waterborne paint will meet the requirements of Section 980.1 C.

A quantity of "High Build Waterborne Pavement Marking Paint, 4" Yellow" and "High Build Waterborne Pavement Marking Paint, 4" White" has been included in the Estimate of Quantities for painting on the project. The pavement within the work limits is currently striped with a passing zone for east bound traffic and a passing zone for west bound traffic. The shoulders also have continuous white shoulder striping. The new pavement markings shall match the existing pavement markings.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Solid 4" line = 22.5 Gals/Mile
Dashed 4" line = 6.2 Gal/Mile
Glass Beads = 8 Lbs/Gal.

All cost for materials, labor and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

FOR BIDDING PURPOSES ONLY



HORIZONTAL ALIGNMENT (MAINLINE)

Element	Curve Data	Station	Northing	Easting
POB		-4+40.00	242242.210	1031897.730
PC		0+03.56	242614.390	1031656.420
PI		4+77.07	243011.700	1031398.820
	DE=13°30'08" Lt			
	DOC=1°25'57"			
	R=4000.00'			
	L=942.63'			
	T=473.51'			
PT		9+46.20	243337.880	1031055.570
PC		14+68.16	243697.440	1030677.200
PI		15+65.52	243764.500	1030606.630
	DE=3°11'12" Rt			
	DOC=1°38'13"			
	R=3,500.00'			
	L=194.66'			
	T=97.36'			
PT		16+62.82	243835.390	1030539.890
POE		18+62.30	243980.620	1030403.150

TABLE OF SUPERELEVATION (MAINLINE)

Station to Station	Description
-4+40.00 to 0+15.72	Normal Crown Section
0+15.72 to 0+43.99	Super Elevation Transition
0+43.99 to 9+05.77	13°30'08" Curve Left
	2.60% Super Elevation Rate
	Point of Rotation Centerline
9+05.77 to 9+34.04	Super Elevation Transition
9+34.04 to 12+88.70	Normal Crown Section
12+88.70 to 13+82.93	Super Elevation Transition
13+82.93	Zero Cross Slope
13+82.93 to 14+77.16	Super Elevation Transition
14+77.16	Reverse Crown
14+77.16 to 15+10.14	Super Elevation Transition
15+10.14 to 16+20.84	3°11'12" Curve Right
	2.70% Super Elevation Rate
	Point of Rotation Centerline
16+20.84 to 16+53.82	Super Elevation Transition
16+53.82	Reverse Crown
16+53.82 to 17+48.05	Super Elevation Transition
17+48.05	Zero Cross Slope
17+48.05 to 18+42.29	Super Elevation Transition
18+42.29 to 18+62.30	Normal Crown Section

HORIZONTAL ALIGNMENT (TRAFFIC DIVERSION)

Element	Curve Data	Station	Northing	Easting
POB		100+00.00	243013.13	1031361.22
PC		100+84.94	243077.10	1031305.34
PI		101+49.99	243126.08	1031262.54
	DE=29°10'10" Lt			
	DOC=22°55'06"			
	R=250.00'			
	L=127.28'			
	T=65.05'			
PT		102+12.22	243148.00	1031201.29
PC		103+15.19	243182.69	1031104.34
PI		103+68.17	243200.53	1031054.46
	DE=23°55'44" Rt			
	DOC=22°55'06"			
	R=250.00'			
	L=104.41'			
	T=52.98'			
PT		104+19.60	243237.08	1031016.10
PC		105+48.02	243325.66	1030923.13
PI		106+14.23	243371.34	1030875.20
	DE=29°40'07" Rt			
	DOC=22°55'06"			
	R=250.00'			
	L=129.45'			
	T=66.21'			
PT		106+77.47	243434.75	1030856.15
PC		107+46.42	243500.79	1030836.32
PI		108+12.81	243564.38	1030817.22
	DE=29°44'42" Lt			
	DOC=22°55'06"			
	R=250.00'			
	L=129.79'			
	T=66.39'			
PT		108+76.21	243610.11	1030769.10
POE		109+84.82	243684.93	1030690.37

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	9	53



CONSTRUCTION STAKING:

The control points are shown on the plan and profile sheet.

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF-B 6545(04)	10	53



TABLE OF CONSTRUCTION STAKING
(See Special Provision for Contractor Staking)

					Grade Staking							
Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Length (Mile)	Lane Factor	* Sets of Stakes	**Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Final Cross Section Survey Quantity (Mile)	Structure Staking Quantity (Each)
County Road (2 Lanes Asphalt Surface)	0+00	17+00	2	1,700	0.322	1	2	0.644	0.322	0.322		
Traffic Diversion (2 Lanes Gravel Surface)	101+00	108+00	2	700	0.133	1	1	0.133	0.133	0.133		
County Road (Double 10'X10' CIP Box Culvert)	9+89.00	10+11.00										1
Totals:								0.777	0.455	0.455		1

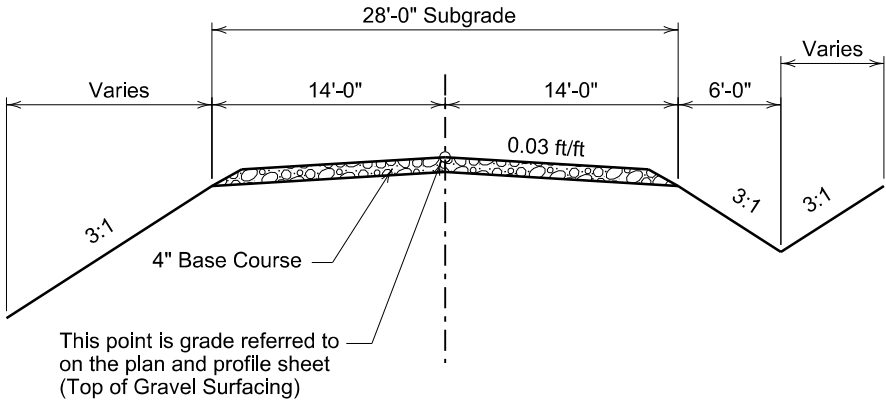
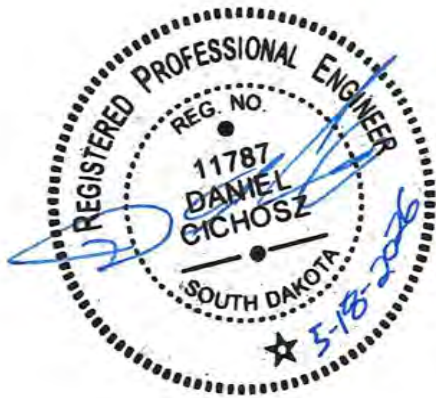
* 1 = Blue Top Stakes Only (Subgrade for Gravel Surface)
2 = Blue Top and Paving Hub Stakes (Asphalt Concrete Pavement)

** Grade Staking Quantity = (Length) x (Lane Factor) x (Sets of Stakes)

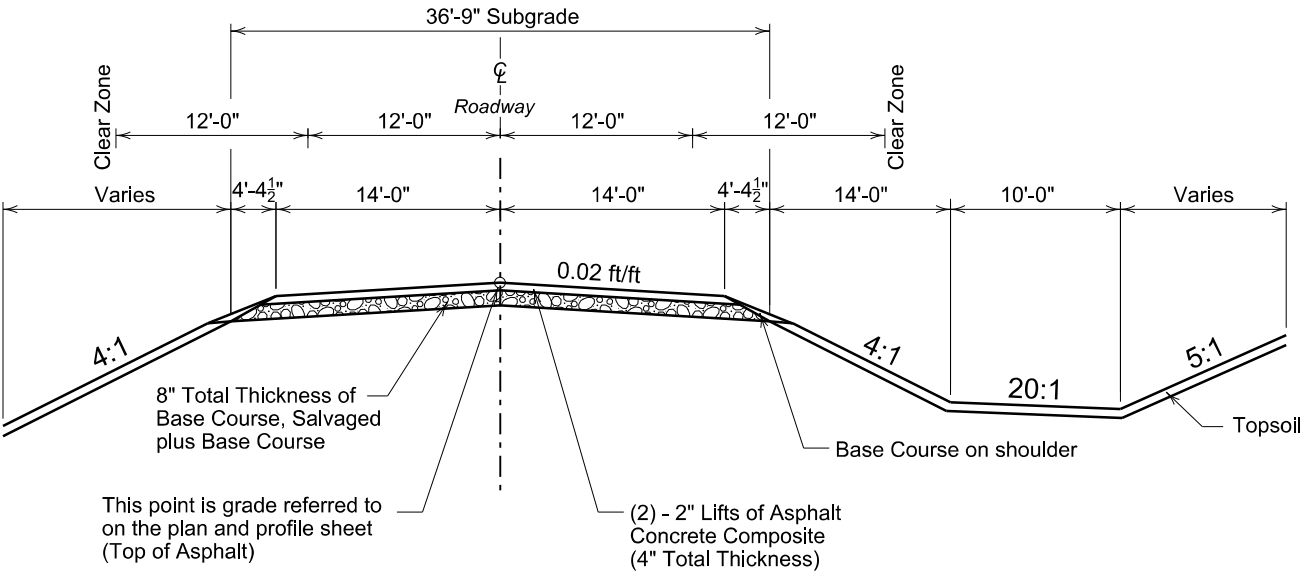
TYPICAL DETAILS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545 (04)	11	53



TYPICAL SECTION TRAFFIC DIVERSION
(Not To Scale)



TYPICAL SECTION MAINLINE
(Not To Scale)
(Sta 0+00 to 17+00)

BASIS OF ESTIMATE

NOTE:
The payment for water required for Embankment and Granular Material shall be incidental to "Incidental Work Grading."

Water
10 Gal/C.Y. for Excavation & Borrow
30 Gal/C.Y. for Base Course
30 Gal/C.Y. for Salvage Gravel Surfacing

Approach Subgrades
Approach Drive - 28' Wide
Double Approach - 44' Wide

Base Course, Salvaged
80 Ton/Approach

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-3	REVERSE TURN (L or R)	4	48" x 48"	16.0	64.0
W1-6	LARGE ARROW (one direction)	6	48" x 24"	8.0	48.0
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	4	30" x 30"	6.3	25.2
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK 500 FT	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
-	TYPE 2 OBJECT MARKER BACK TO BACK	4	6" x 12"	1.0	4.0
		CONVENTIONAL ROAD			
		TRAFFIC CONTROL SIGNS SQFT 278.2			

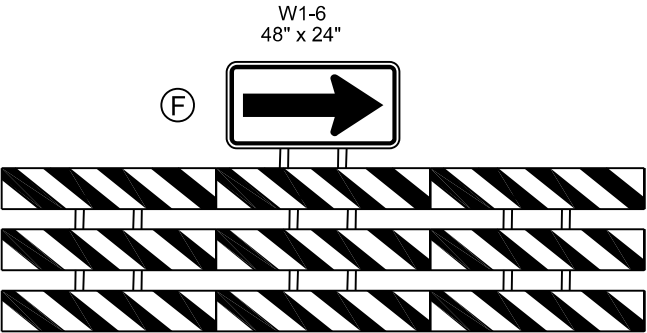
NOTE:

See Standard Plate 634.28 for placement of all signs, barricades and drums on the traffic diversion. The W13-1P Advisory Speed plaque will be 25 MPH or Less.

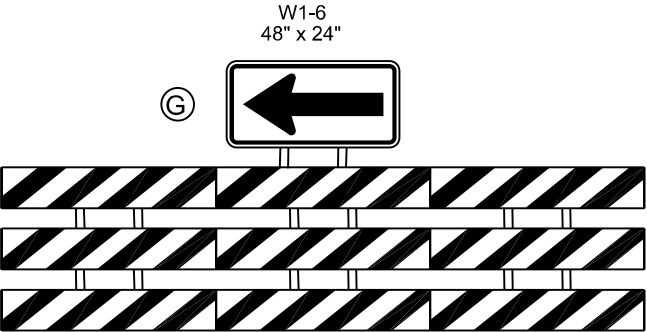
40 Channelizing Markers are recommended to be placed on the traffic diversion.

16 Drums are recommended to be placed on the ends of the traffic diversion.

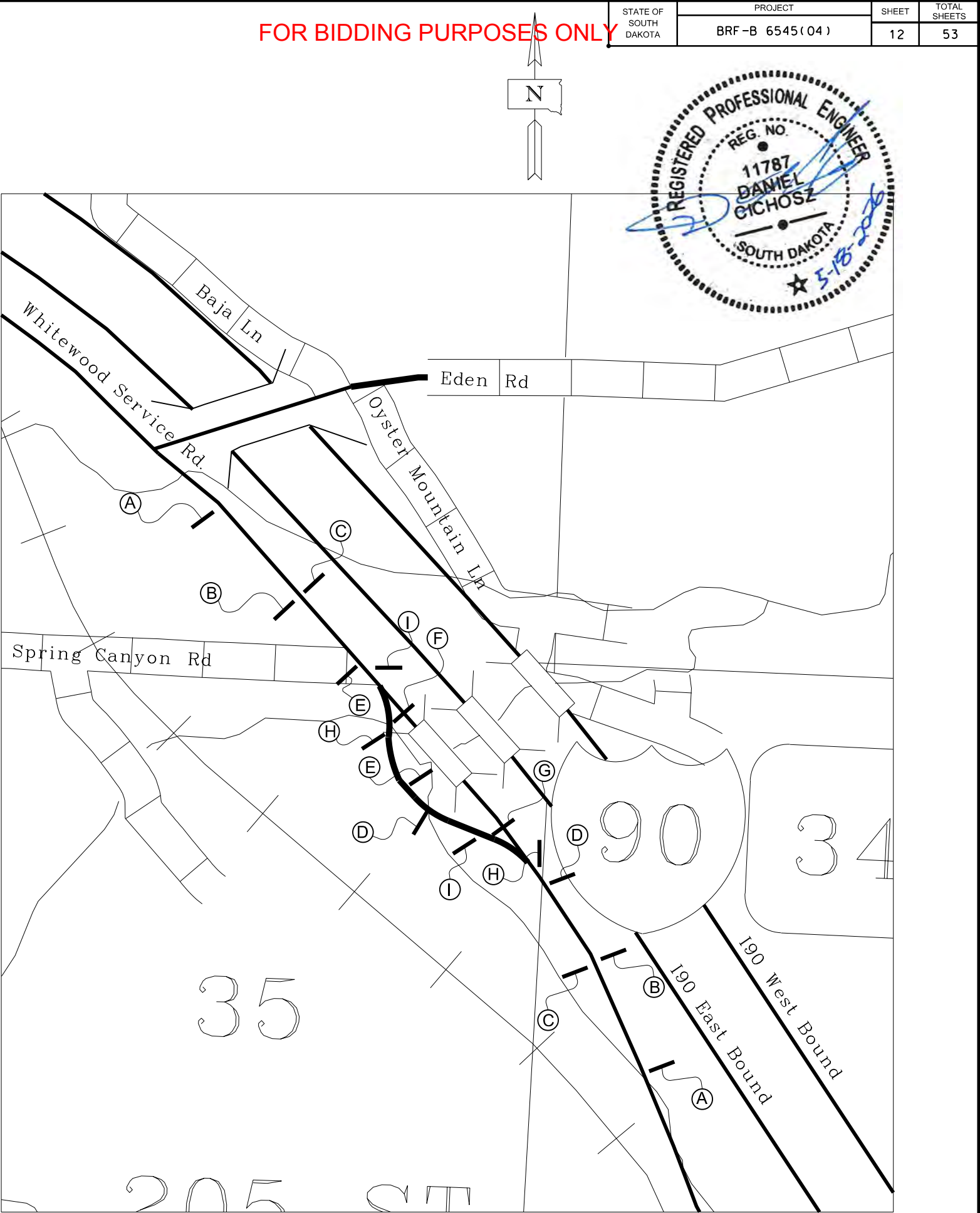
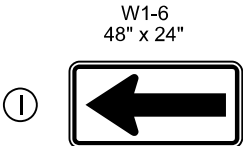
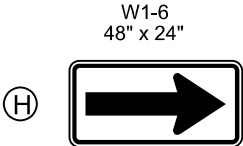
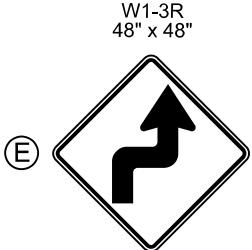
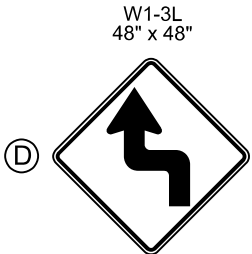
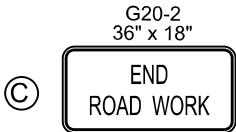
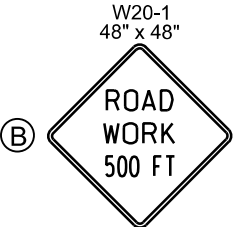
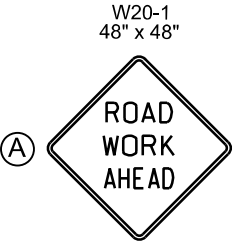
All Drums are incidental to the contract lump sum price for Traffic Control, Miscellaneous.



(3) 8'-0" Type 3 Barricades Back to Back

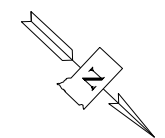


(3) 8'-0" Type 3 Barricades Back to Back



Easements
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF -B 6545 (04)	13	53



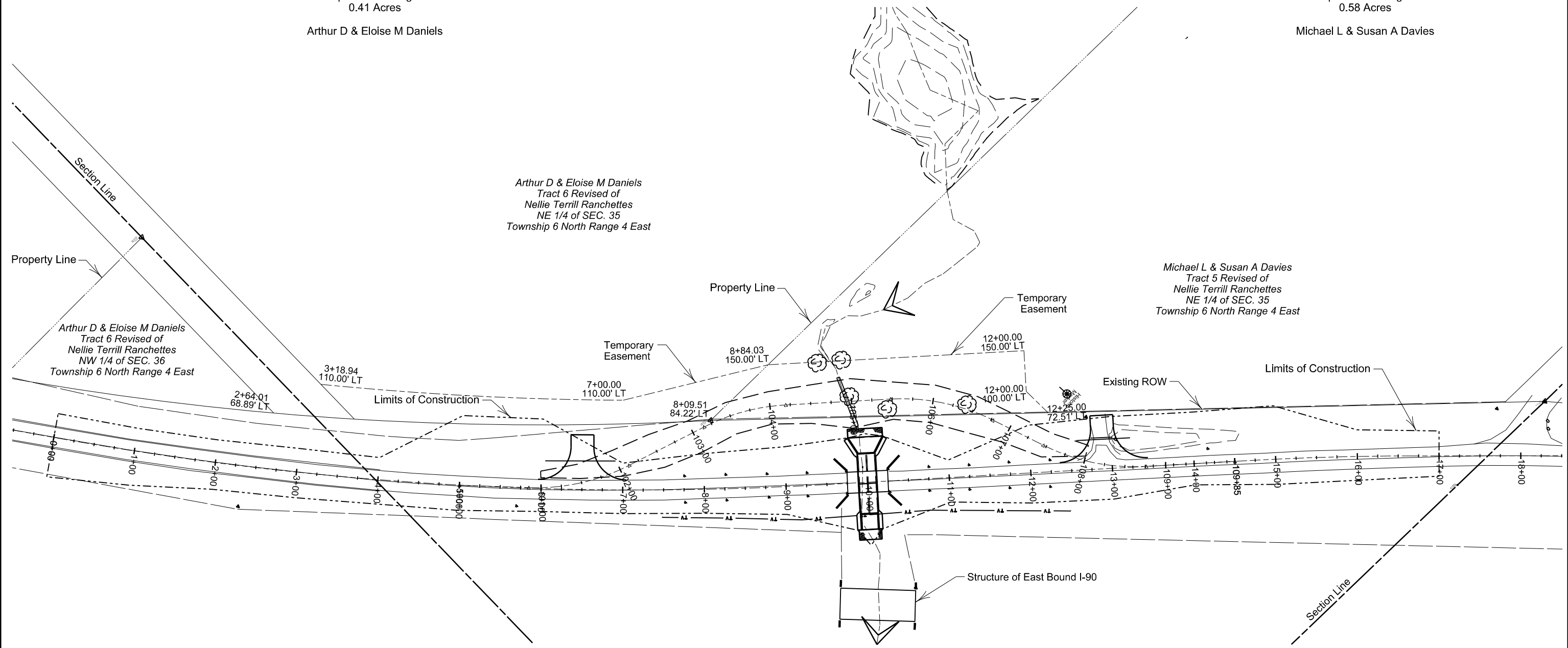
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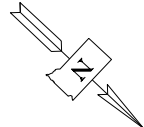
Temporary Easement
Sta 2+05.54 to 10+02.91 LT
Tract 6 Revised of Nellie Terrill Ranchettes
NE 1/4 of SEC. 35
Township 6 North Range 4 East
0.41 Acres

Arthur D & Eloise M Daniels

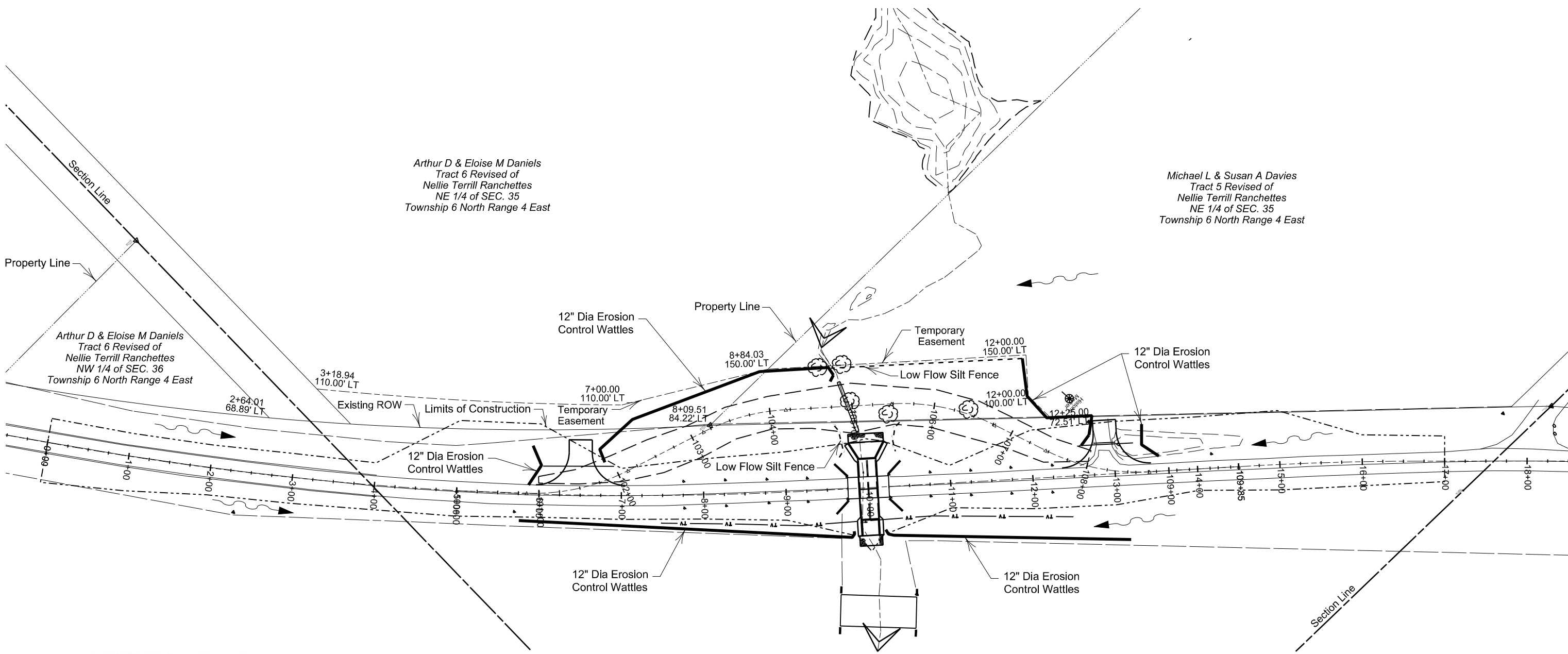
Temporary Easement
Sta 8+09.51 to 12+25 LT
Tract 5 Revised of Nellie Terrill Ranchettes
NE 1/4 of SEC. 35
Township 6 North Range 4 East
0.58 Acres

Michael L & Susan A Davies





Scale: 1" = 120'



Low Flow Silt Fence		
	LI	RI
9+75	50 Ft	
10+25	50 Ft	
104+75 to 106+75	236 Ft	
Engineer's Discretion	64 Ft	
Total	400 Ft	

12" Dia Erosion Control Wattles		
	LI	RI
5+90 to 6+00	50 Ft	
7+50 to 10+00	300 Ft	
10+25 to 13+25		300 Ft
13+50 to 13+60	50 Ft	
102+00 to 104+75	330 Ft	
105+00 to 108+00	400 Ft	
Engineer's Discretion	170 Ft	
Total	1,600 Ft	

Erosion Control Legend

Drainage Arrow

Erosion Control Wattles

Low Flow Silt Fence

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 5.5

➤ 5.3 (3b): Total Area to be Disturbed 4.0

➤ 5.3 (3c): Maximum Area Disturbed at One Time4.0

➤ 5.3 (3d): Existing Vegetative Cover (%) 70%

➤ 5.3 (3d): Description of Vegetative Cover Grass
- 5.3 (3e): Soil Properties: AASHTO Soil Sand with Gravel

➤ 5.3 (3f): Name of Receiving Water Body/Bodies Spring Creek

➤ 5.3 (3g): Location of Construction Support Activity Areas
Temporary Easement

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.	
Remove and stockpile topsoil.	
Remove and stockpile salvage gravel.	
Install channel and ditch bottom protection.	
Clearing and grubbing & install traffic diversion.	
Stabilize disturbed areas & topsoil piles.	
Remove bridge, and install box culvert.	
Install riprap and grade roadway.	
Final grading and final surfacing	
Remove Traffic Diversion and replace topsoil.	
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
☒ Natural Buffers (within 50 ft of Waters of State)	
☒ Silt Fence	
☒ Erosion Control Wattles	
☐ Temporary Berm / Windrow	
☐ Floating Silt Curtain	
☐ Stabilized Construction Entrances	
☐ Entrance/Exit Equipment Tire Wash	
☐ Other:	

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	15	53

Dust Controls	
Description	Estimated Start Date
☐ Tarps & Wind impervious fabrics	
☐ Watering	
☒ Stockpile location/orientation	
☐ Dust Control Chlorides	
☐ Other	

Dewatering BMPs	
Description	Estimated Start Date
☐ Sediment Basins	
☐ Dewatering bags	
☐ Weir tanks	
☐ Temporary Diversion Channel	
☐ 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
☐ Vegetation Buffer Strips	
☐ Temporary Seeding (Cover Crop Seeding)	
☒ Permanent Seeding	
☐ Sodding	
☐ Planting (Woody Vegetation for Soil Stabilization)	
☒ Mulching (Grass Hay or Straw)	
☐ Fiber Mulching (Wood Fiber Mulch)	
☐ Soil Stabilizer	
☐ Bonded Fiber Matrix	
☐ Fiber Reinforced Matrix	
☐ Erosion Control Blankets	
☐ Surface Roughening (e.g. tracking)	
☐ 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.

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.

FOR BIDDING PURPOSES ONLY

- 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.

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.

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	17	53

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

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	18	53

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.

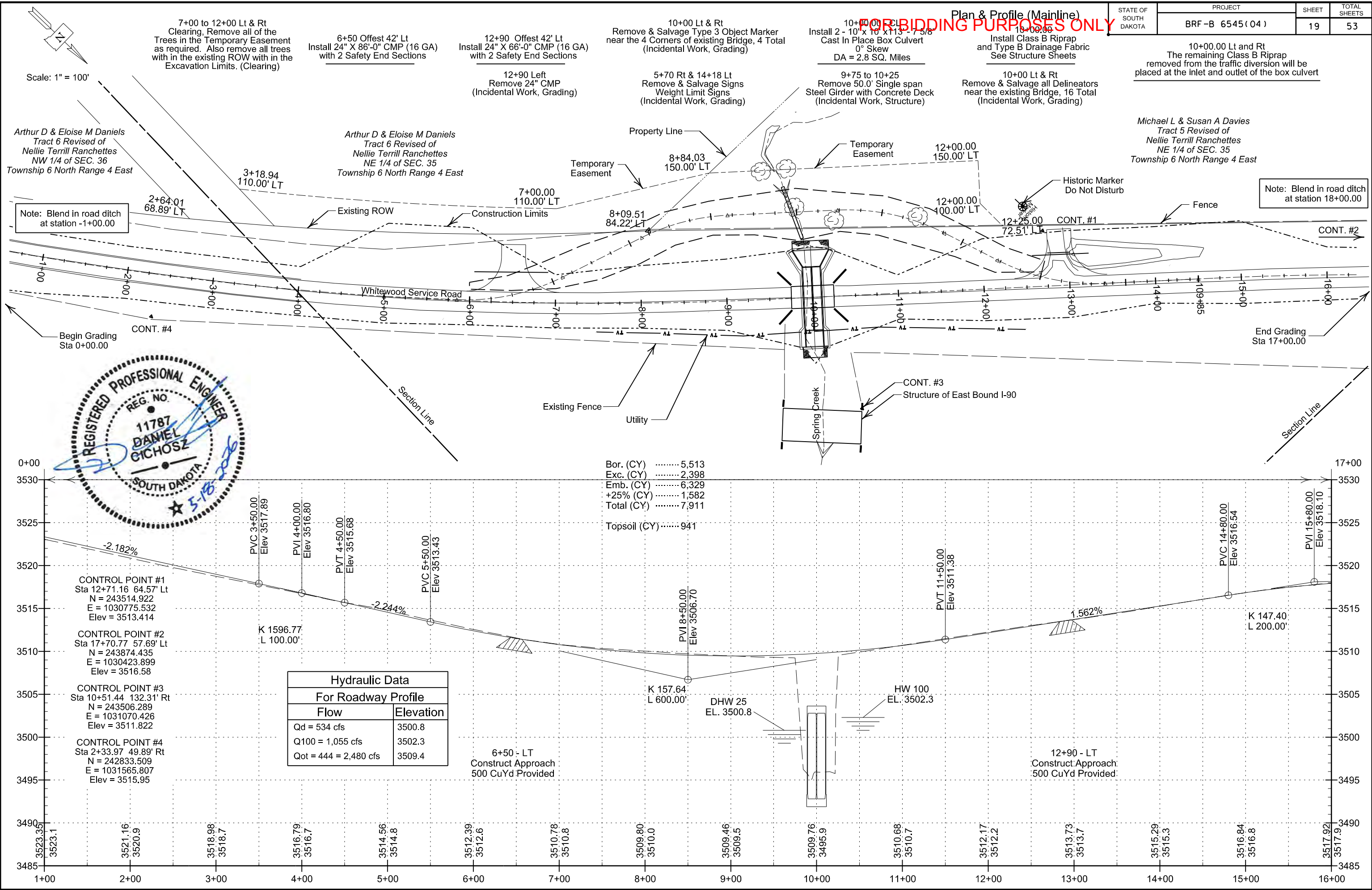
➤ 5.5 (4): Certification Requirements

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545 (04)	19	53

Plan & Profile (Mainline)

7+00 to 12+00 Lt & Rt
Clearing, Remove all of the
Trees in the Temporary Easement
as required. Also remove all trees
with in the existing ROW with in the
Excavation Limits. (Clearing)

6+50 Offset 42' Lt
Install 24" X 86'-0" CMP (16 GA)
with 2 Safety End Sections

12+90 Offset 42' Lt
Install 24" X 66'-0" CMP (16 GA)
with 2 Safety End Sections

10+00 Lt & Rt
Remove & Salvage Type 3 Object Marker
near the 4 Corners of existing Bridge, 4 Total
(Incidental Work, Grading)

10+00 Lt & Rt
Install 2 - 10' x 10' x 11'-7 5/8"
Cast In Place Box Culvert
0° Skew
DA = 2.8 SQ. Miles

10+00 Lt & Rt
Remove & Salvage all Delineators
near the existing Bridge, 16 Total
(Incidental Work, Grading)

10+00.00 Lt and Rt
The remaining Class B Riprap
removed from the traffic diversion will be
placed at the inlet and outlet of the box culvert

Michael L & Susan A Davies
Tract 5 Revised of
Nellie Terrill Ranchettes
NE 1/4 of SEC. 35
Township 6 North Range 4 East

Note: Blend in road ditch
at station 18+00.00

Arthur D & Eloise M Daniels
Tract 6 Revised of
Nellie Terrill Ranchettes
NW 1/4 of SEC. 36
Township 6 North Range 4 East

Arthur D & Eloise M Daniels
Tract 6 Revised of
Nellie Terrill Ranchettes
NE 1/4 of SEC. 35
Township 6 North Range 4 East

Note: Blend in road ditch
at station -1+00.00

Begin Grading
Sta 0+00.00

End Grading
Sta 17+00.00



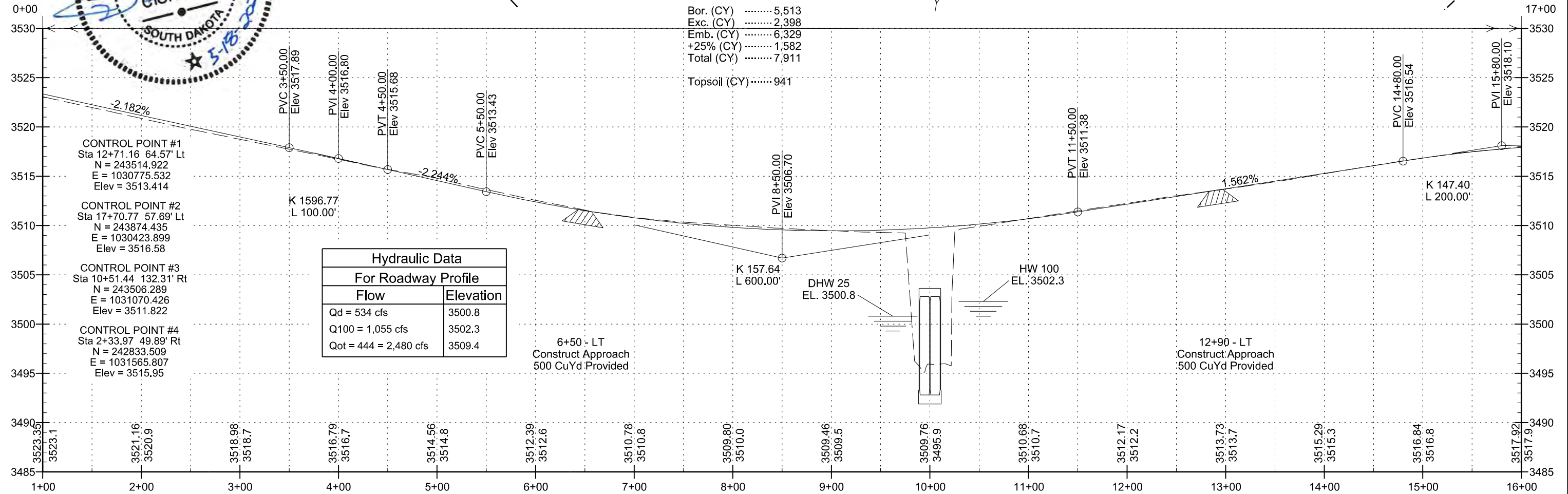
Bor. (CY) 5,513
Exc. (CY) 2,398
Emb. (CY) 6,329
+25% (CY) 1,582
Total (CY) 7,911

Topsoil (CY) 941

Hydraulic Data		
For Roadway Profile		
Flow	Elevation	
Qd = 534 cfs	3500.8	
Q100 = 1,055 cfs	3502.3	
Qot = 444 = 2,480 cfs	3509.4	

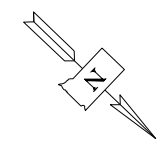
6+50 - LT
Construct Approach
500 CuYd Provided

12+90 - LT
Construct Approach
500 CuYd Provided



Plan & Profile (Traffic Diversion)
FOR BIDDING PURPOSES ONLY

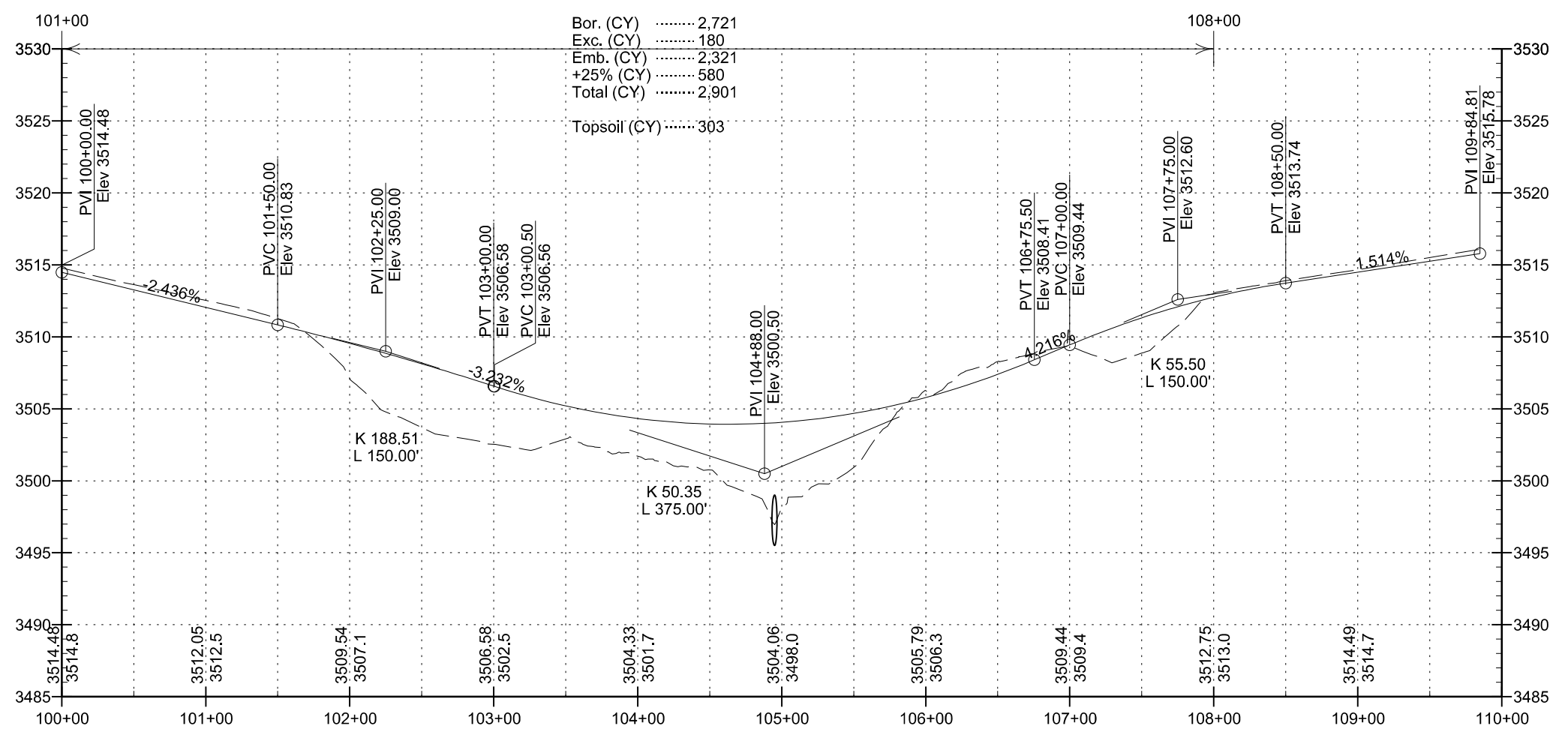
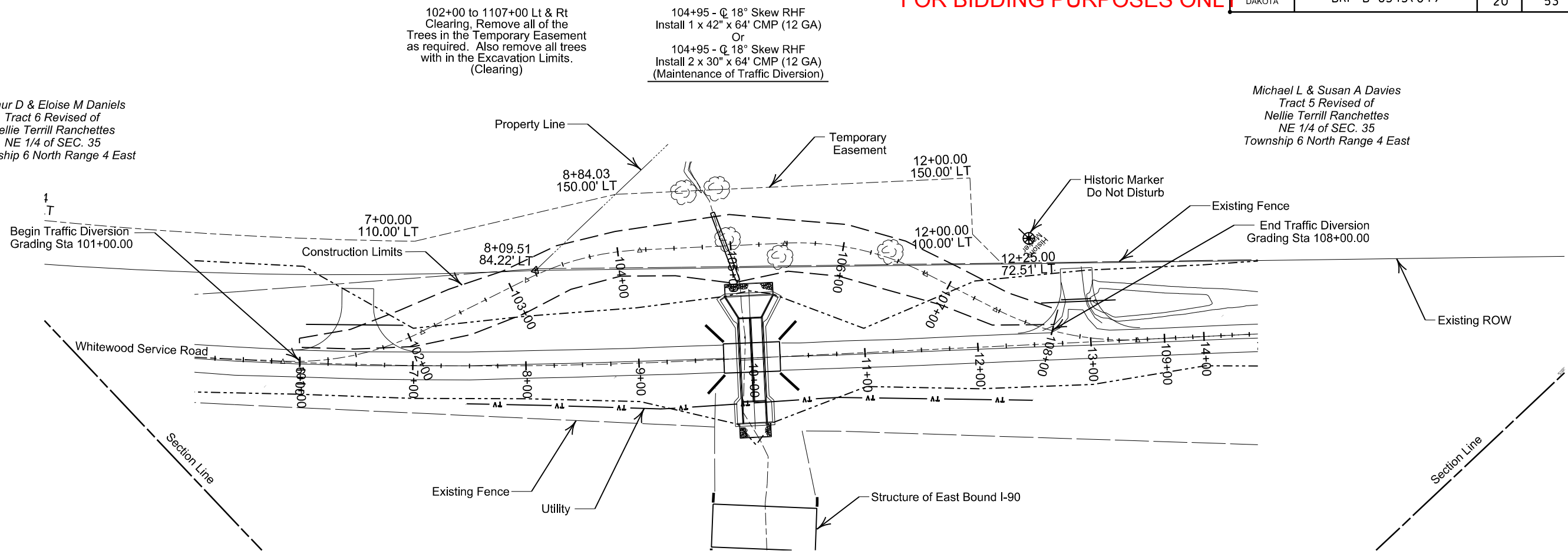
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545 (04)	20	53



Scale: 1" = 100'

Arthur D & Eloise M Daniels
Tract 6 Revised of
Nellie Terrill Ranchettes
NE 1/4 of SEC. 35
Township 6 North Range 4 East

Michael L & Susan A Davies
Tract 5 Revised of
Nellie Terrill Ranchettes
NE 1/4 of SEC. 35
Township 6 North Range 4 East

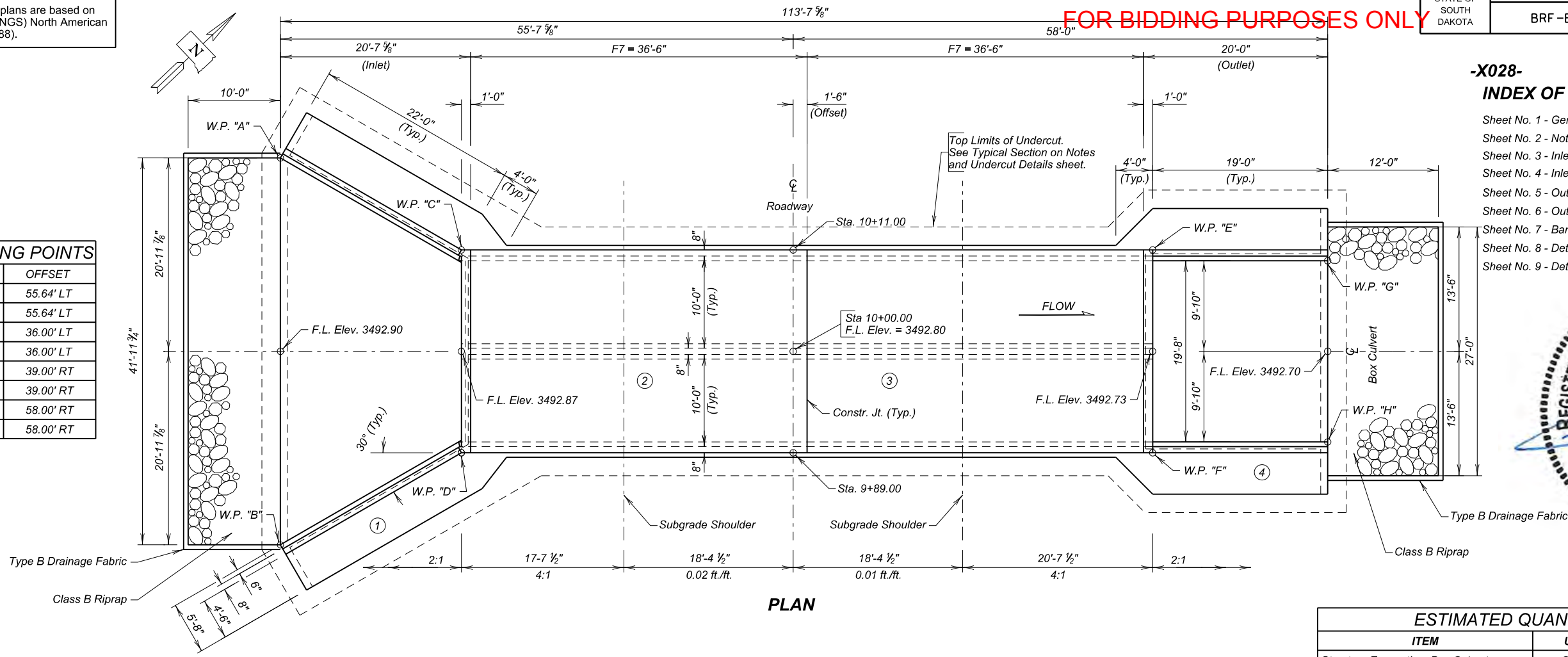


The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

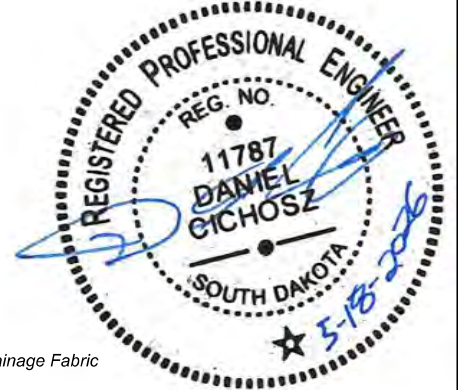
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545 (04)	21	53

FOR BIDDING PURPOSES ONLY

TABLE OF WORKING POINTS		
W.P.	STATION	OFFSET
"A"	10+20.99	55.64' LT
"B"	9+79.01	55.64' LT
"C"	10+11.00	36.00' LT
"D"	9+89.00	36.00' LT
"E"	10+11.00	39.00' RT
"F"	9+89.00	39.00' RT
"G"	10+09.83	58.00' RT
"H"	9+90.17	58.00' RT



-X028- INDEX OF CULVERT SHEETS	
Sheet No. 1 - General Drawing	
Sheet No. 2 - Notes and Undercut Details	
Sheet No. 3 - Inlet Details (A)	
Sheet No. 4 - Inlet Details (B)	
Sheet No. 5 - Outlet Details (A)	
Sheet No. 6 - Outlet Details (B)	
Sheet No. 7 - Barrel End Section Details	
Sheet No. 8 - Details of Standard Plates No's. 460.02 & 460.10	
Sheet No. 9 - Details of Standard Plate No. 620.16	



ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Structure Excavation, Box Culvert	Cu. Yd.	107
Box Culvert Undercut	Cu. Yd.	330
Class A45 Concrete, Box Culvert	Cu. Yd.	240.4
Reinforcing Steel	Lb.	37,255
Class B Riprap	Ton	115.0
Type B Drainage Fabric	Sq. Yd.	157

HYDRAULIC DATA	
Q _d	534 cfs
A _d	99 sq. ft.
V _d	5.4 fps
Q _f	534 cfs
Q ₁₀₀	1055 cfs
Q _{OTfr}	2480 cfs
V _{max}	7.4 fps

Q_d = design discharge for the proposed bridge based on 25 year frequency, EL. 3500.8

Q_{OTfr} = overtopping discharge and frequency 444 year recurrence Interval Elevation 3509.4

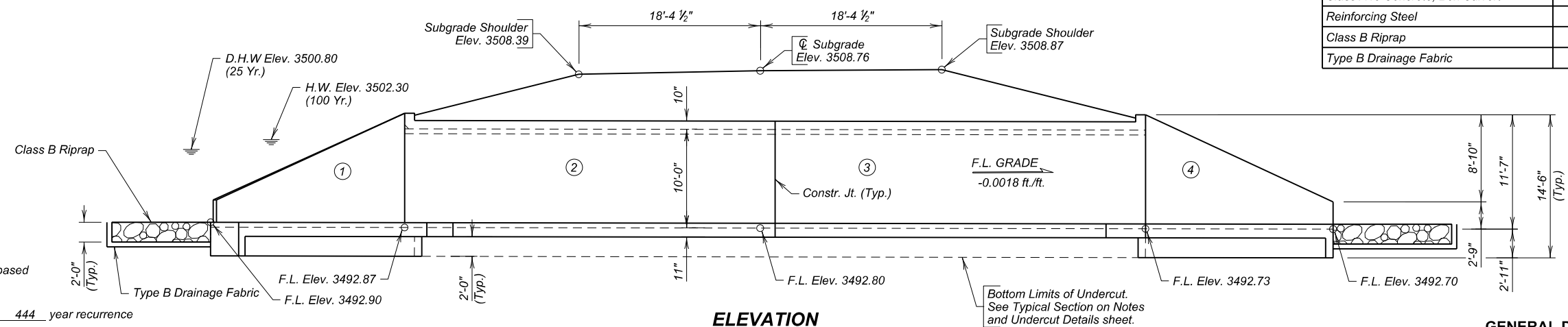
LOCATION Station 9+35

Q_f = designated peak discharge for the basin approaching proposed project based on 25 year frequency.

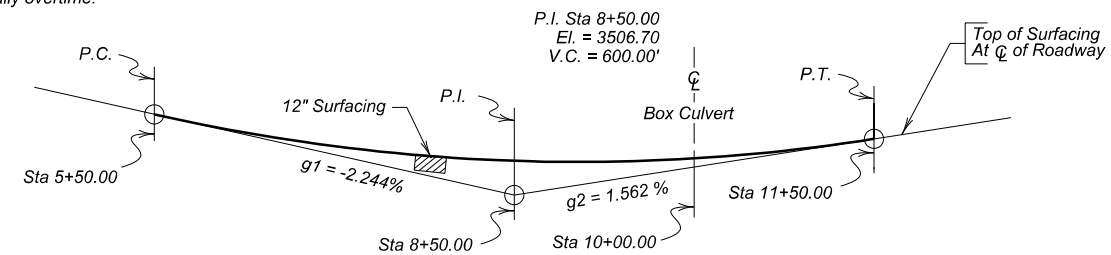
Q₁₀₀ = computed discharge for the basin approaching proposed project based on 100 year frequency, EL. 3502.3

V_{max} = maximum computed outlet velocity for the proposed bridge, based on a 100 year frequency.

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



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 overtime.



VERTICAL CURVE DATA

GENERAL DRAWING AND QUANTITIES
FOR
2 - 10' X 10' BOX CULVERT

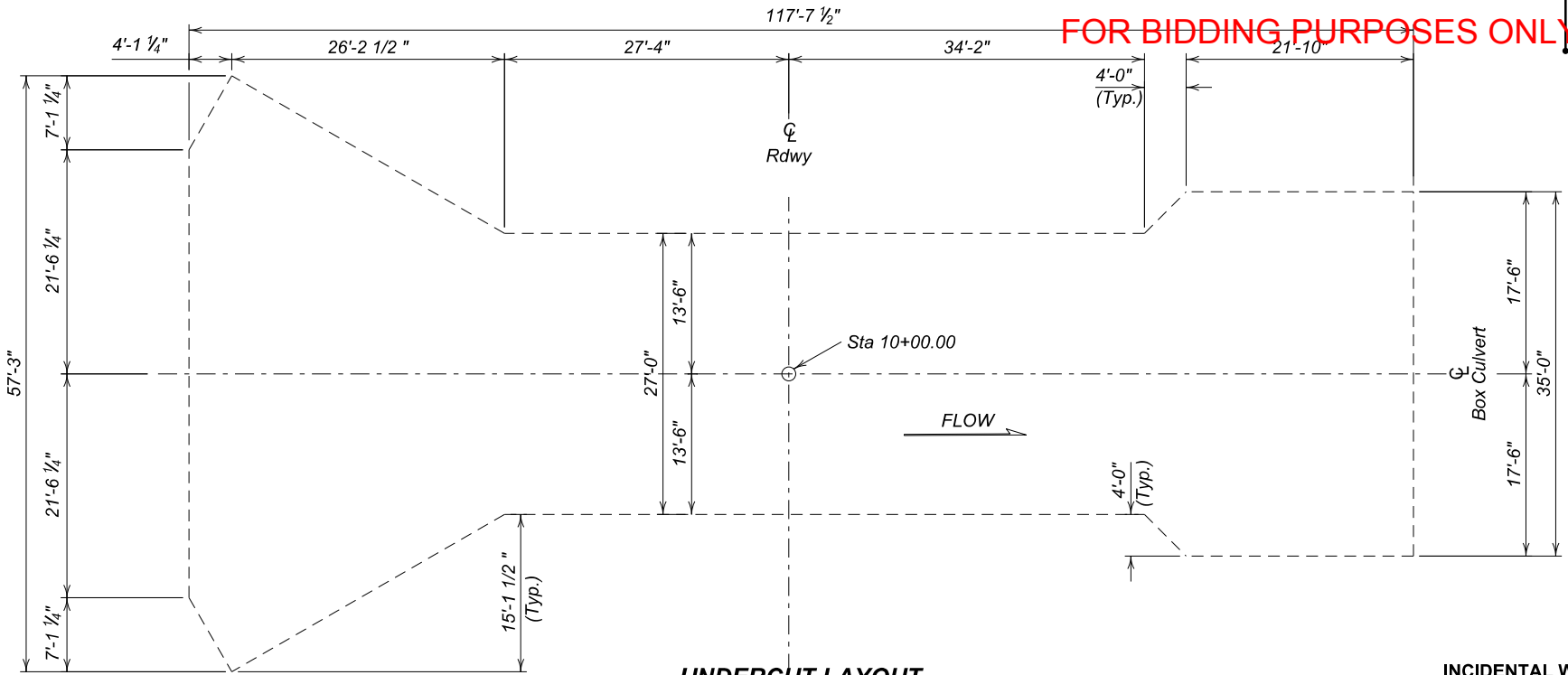
SPRING CREEK
STA 10+00.00
STR. NO. 41-228-112
PCN 08N0

SKREW 0°
SEC. 35-T6N-R4E
HL-93

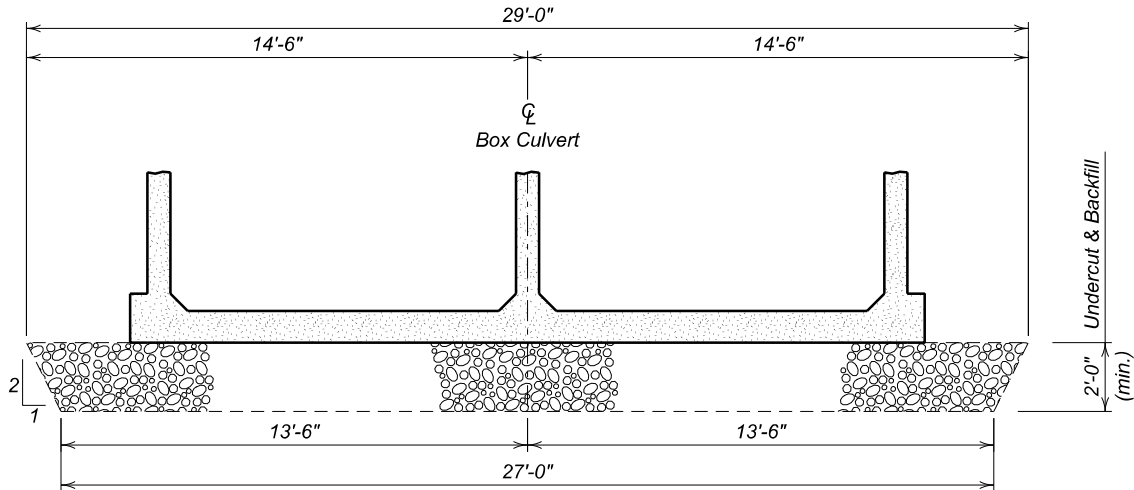
LAWRENCE CO.
S. D. DEPT. OF TRANSPORTATION
MAY, 2026

-X028-		DESIGNED BY		DRAWN BY		CHECKED BY		APPROVED	
		D.C.		J.H.		D.H.			

PLANS BY: BROSZ ENGINEERING INC.



UNDERCUT LAYOUT
(Bottom Dimensions)



TYPICAL SECTION
(For Limits of Undercut)

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Box Culvert Undercut	CuYd	330

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

An additional 10% of undercut backfill is anticipated to account for filling of the voids created from excavating cobbles and boulders.

INCIDENTAL WORK, STRUCTURE

- The in place structure is a 50'-0" single span steel stringer bridge with a concrete deck. The railing is a concrete pigeon hole railing. The wingwalls and abutments are concrete.
- Break down and remove the in-place structure, in accordance with Section 110 of the Specifications. The abutments and wingwalls will be removed to 1 foot below the bottom of the undercut. The Contractor shall salvage the existing steel beams for the County. The Contractor shall stockpile the beams in the Temporary Easement for pickup by County Forces. The remaining portions of the existing bridge will be removed and disposed of by the Contractor on a site obtained by the Contractor in accordance with the Environmental Commitments.
- The foregoing is a general description of the in-place structure and should not be construed to be complete in all details. Before preparing a bid, it will be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work and materials involved.
- All costs associated with the foregoing work will be included in the contract lump sum price for "Incidental Work, Structure".

NOTES & UNDERCUTTING DETAILS

FOR

2 - 10' X 10' BOX CULVERT

SPRING CREEK SKREW 0°
STA 10+00.00 SEC. 35-T6N-R4E
STR. NO. 41-228-112 HL-93

LAWRENCE CO.

S. D. DEPT. OF TRANSPORTATION

MAY, 2026

2 OF 9

DESIGNED BY D.C.	DRAWN BY J.V.	CHECKED BY D.H.	APPROVED
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SPECIFICATIONS

- Design Specifications: AASHTO LRFD Bridge Design Specifications, 9th Edition.
- 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>

GENERAL NOTES

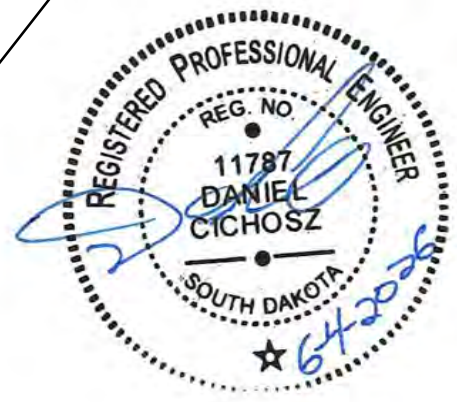
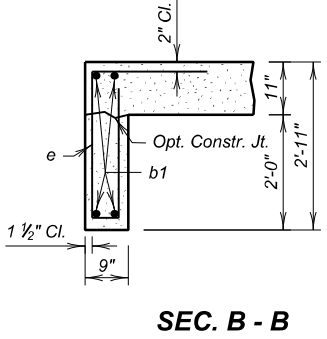
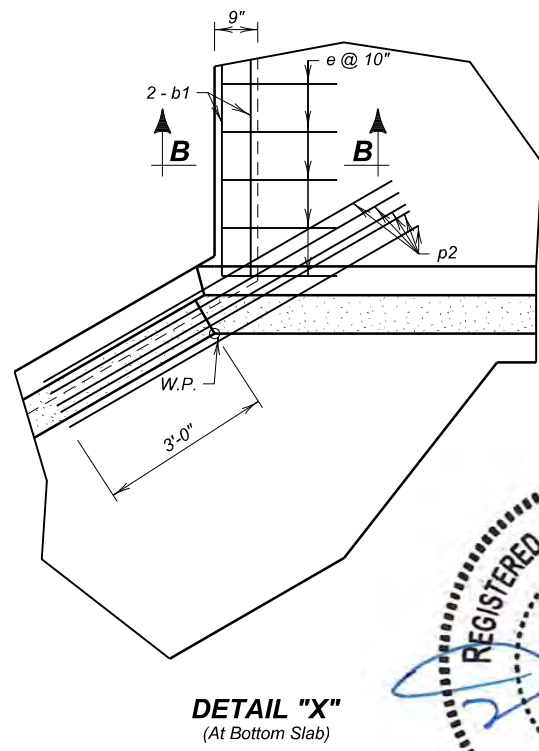
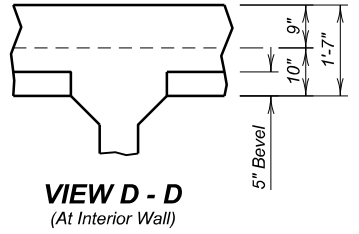
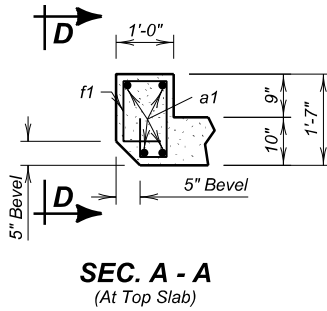
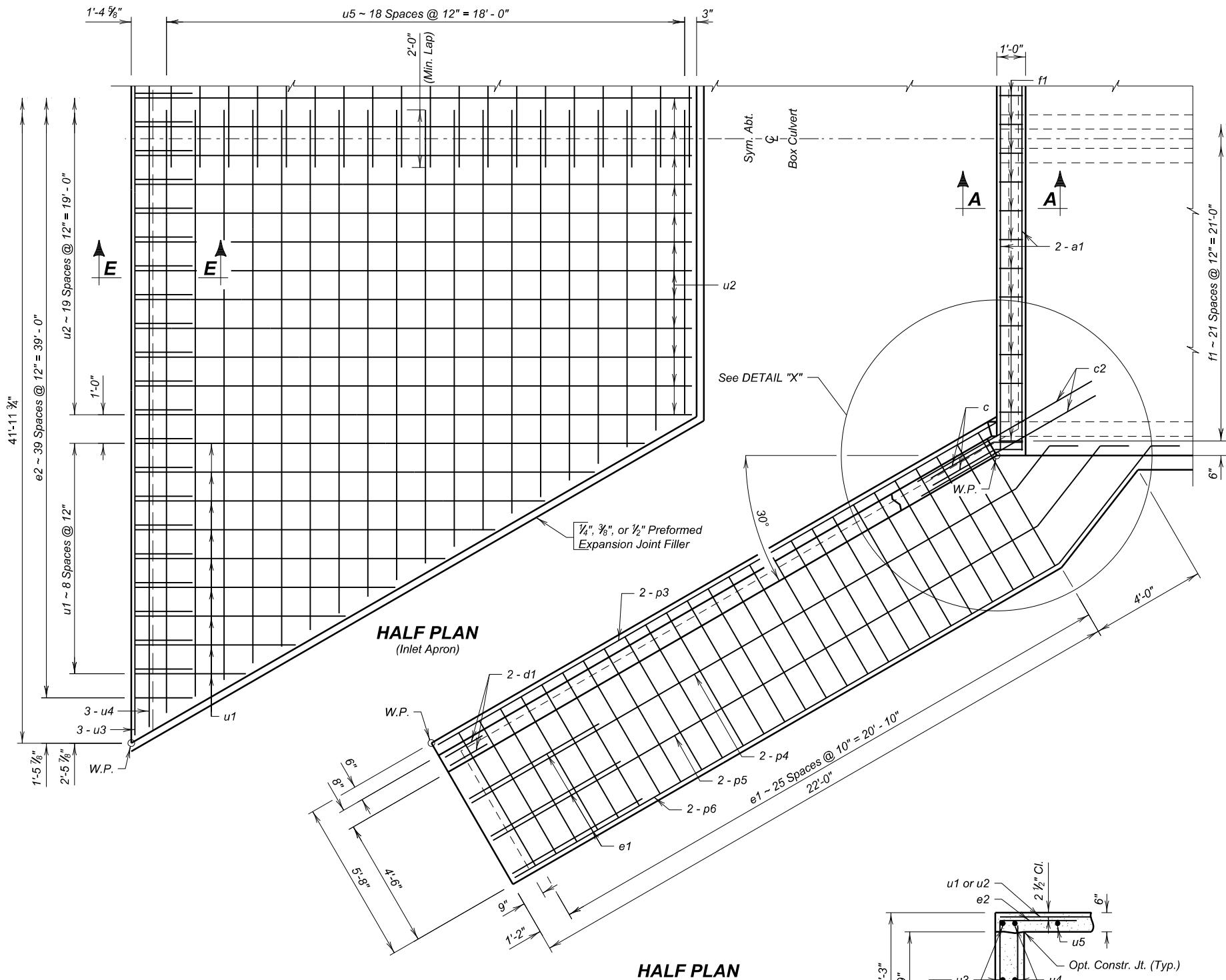
- Design Live Load: HL-93. No construction loading in excess of legal load is anticipated. If construction loading in excess of legal load is anticipated by the Contractor, the Contractor will submit a proposal including a design analysis for the anticipated construction loading, through the proper channels, to the Office of Bridge Design for approval. Upon approval, the construction load will not be applied until the depth of fill over the box culvert as required by analysis has been placed. At a minimum, 4 ft. of fill will be placed over the box culvert prior to applying the construction load. All costs associated with accommodating any construction loads will be borne by the Contractor.
- The design of the barrel sections will be based on a minimum fill height of 2 foot and include all subsequent fill heights up to and including the maximum fill height of 7.0 ft. over the box culvert.
- Design Material Strengths: Concrete $f_c = 4500$ p.s.i.
Reinforcing Steel $f_y = 60000$ p.s.i.
- All concrete will be Class A45 conforming to Section 460.
- All reinforcing steel will conform to ASTM A615 Grade 60.
- All exposed edges will be chamfered $\frac{3}{4}$ inch.
- Use 1 inch clear cover on all reinforcing steel EXCEPT as shown.
- The Contractor will imprint on the structure the date of construction as specified and detailed on Standard Plate No. 460.02.
- Care will be taken to establish Working Points (W.P.) as shown on the wings.
- Circled numbers in PLAN and ELEVATION views on the General Drawing are section I.D. Numbers (see SDDOT Materials Manual).
- Dimension "L" on the standard box culvert barrel sheet(s) is the barrel section length shown in the PLAN view on the General Drawing (for each S1, S2, etc. barrel section, as applicable).
- Compaction of earth embankment and box culvert backfill material will be governed by the Ordinary Compaction Method.
- Soils below the bottom of the proposed RCBC consist of predominantly red-to-brown gravelly silt clay (alluvium). Sporadic cobbles and boulders, as noted in the stream channel, will also be encountered at various elevations within the excavation for the proposed RCBC.

Ground water was encountered in the borings at an elevation of 3487.1 feet during the subsurface investigation conducted in July 2022.

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT BRF-B 6545 (04)	SHEET 23	TOTAL SHEETS 53
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Revised Date: 6-4-2026



INLET DETAILS (A)
FOR
2 - 10' X 10' BOX CULVERT
SPRING CREEK
STA 10+00.00
STR. NO. 41-228-112
SKEW 0°
SEC. 35-T6N-R4E
HL-93

LAWRENCE CO.
S. D. DEPT. OF TRANSPORTATION
MAY, 2026

3 OF 9

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
D.C.	J.H.	D.H.	

FOR BIDDING PURPOSES ONLY

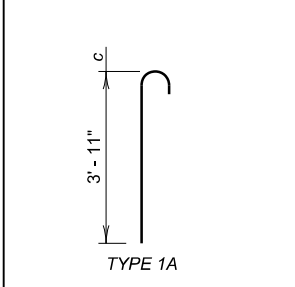
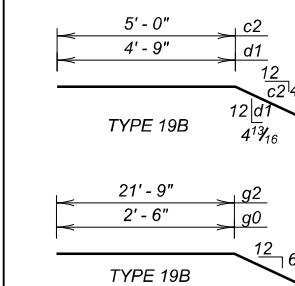
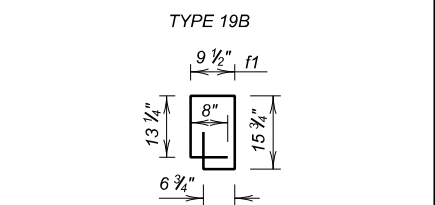
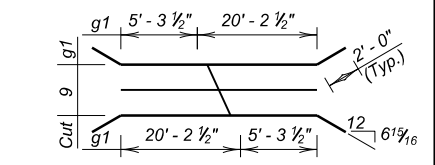
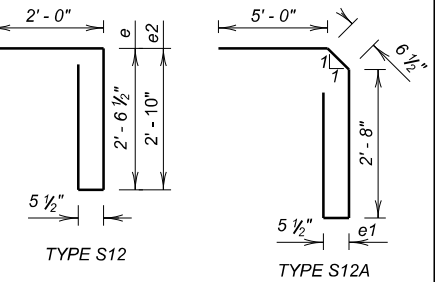
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545 (04)	24	53

Revised Date: 6-4-2026

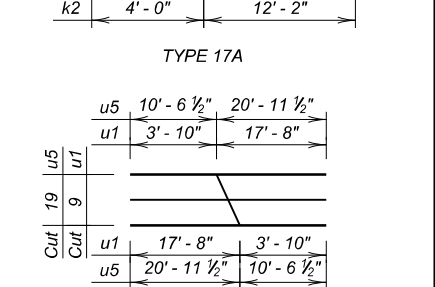
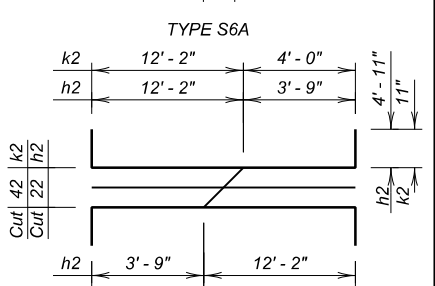
REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
a1	4	6	21' - 9"	Str.
b1	4	6	20' - 0"	Str.
* c	4	5	4' - 6"	1A
c1	8	5	23' - 6"	Str.
c2	4	5	7' - 0"	19B
d1	8	5	6' - 6"	19B
e	25	4	7' - 3"	S12
e1	58	5	11' - 3"	S12A
f1	22	4	5' - 0"	S6A
g0	12	5	5' - 0"	19B
g1	18	4	29' - 6"	19B
g2	4	4	23' - 9"	19B
h2	22	5	25' - 9"	17A
k2	42	5	18' - 0"	17A
p2	10	6	7' - 0"	Str.
* p3	10	4	24' - 6"	Str.
* p4	4	4	24' - 9"	Str.
* p5	4	4	26' - 6"	Str.
* p6	4	4	28' - 3"	Str.

INLET APRON				
e2	40	4	8' - 0"	S12
u1	9	4	20' - 6"	Str.
u2	20	4	19' - 3"	Str.
u3	3	4	41' - 6"	Str.
u4	3	4	40' - 9"	Str.
u5	19	4	31' - 6"	Str.



NOTE:
All dimensions are out to out of bars.
* Bend in field as necessary to fit.
Ø See cutting diagram.



NOTE:
All dimensions are out to out of bars.
* Bend in field as necessary to fit.
Ø See cutting diagram.

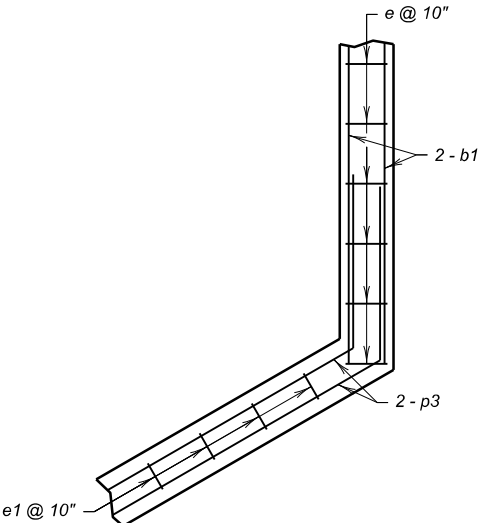
INLET DETAILS (B)
FOR
2 - 10' X 10' BOX CULVERT
SPRING CREEK
STA 10+00.00
STR. NO. 41-228-112
SKEW 0°
SEC. 35-T6N-R4E
HL-93

LAWRENCE CO.
S. D. DEPT. OF TRANSPORTATION
MAY, 2026
(4) OF (9)

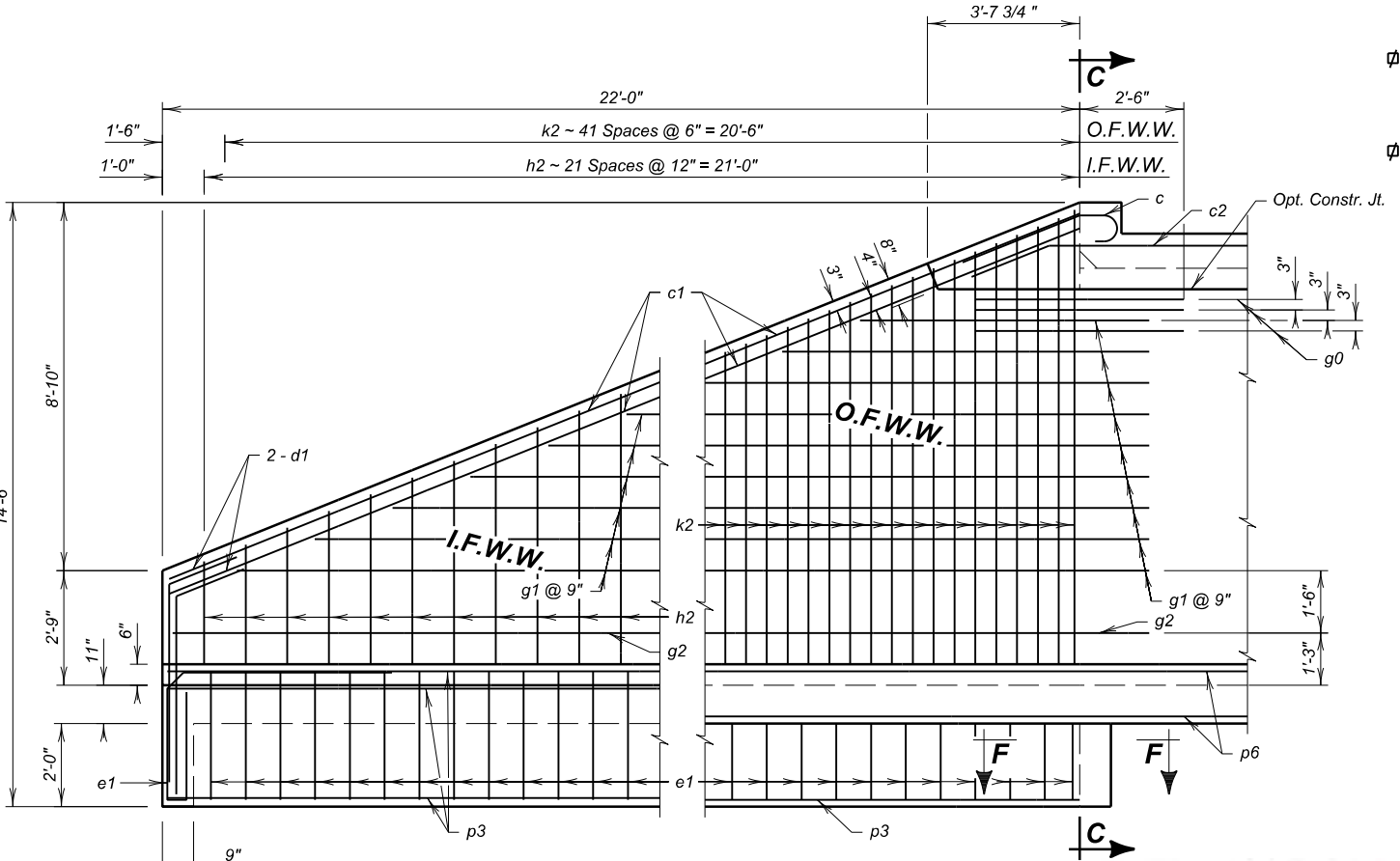
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
D.C.	J.H.	D.H.	



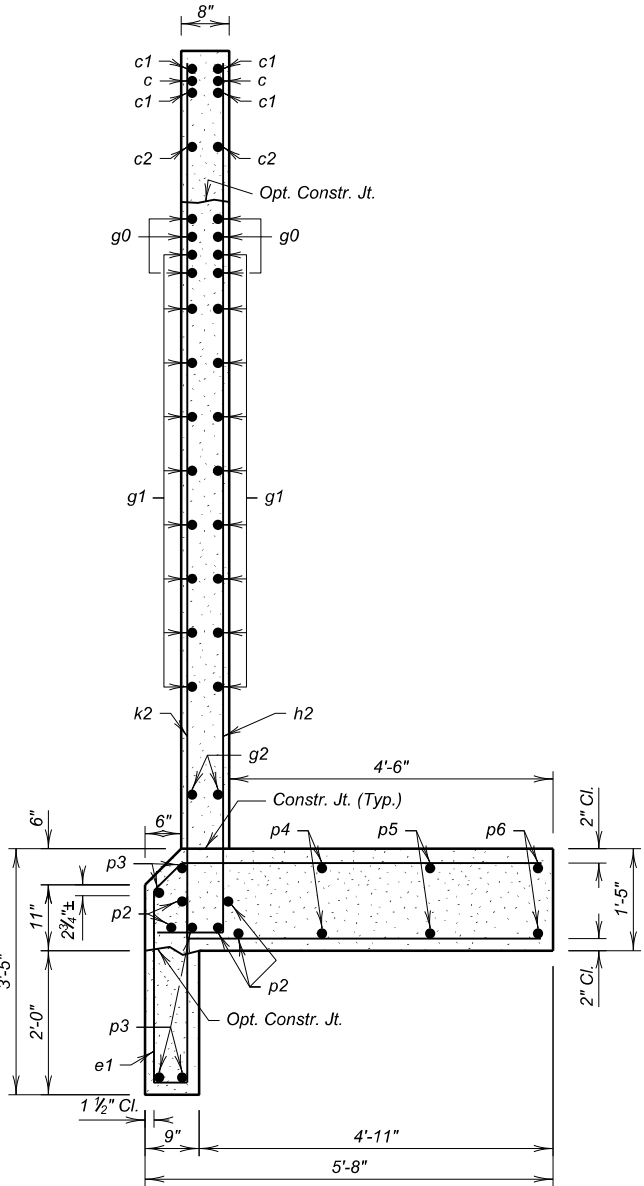
SEC. F - F



ELEVATION



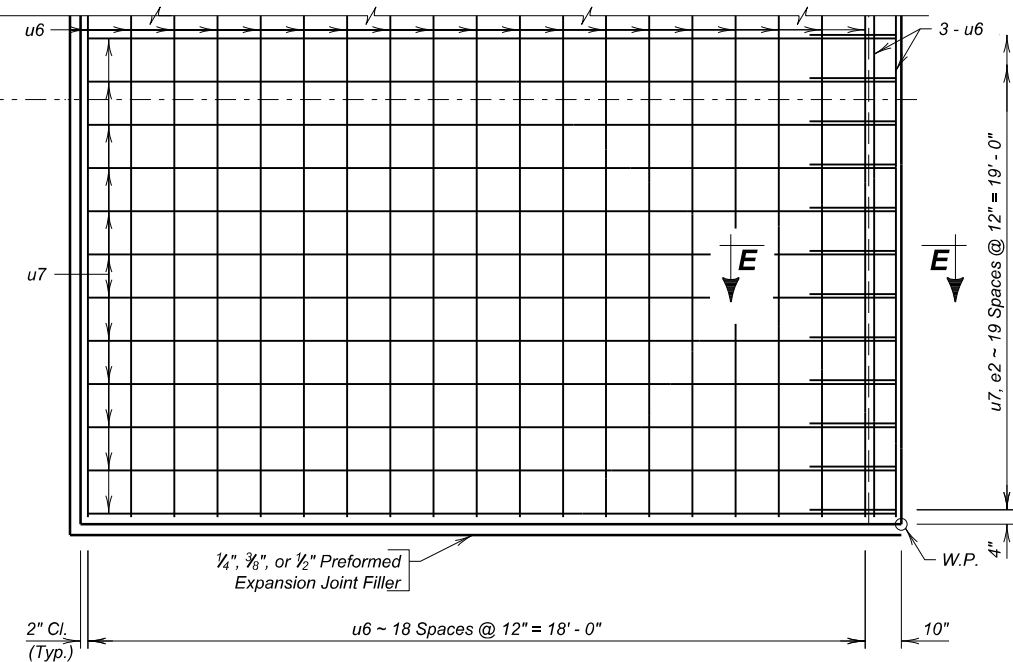
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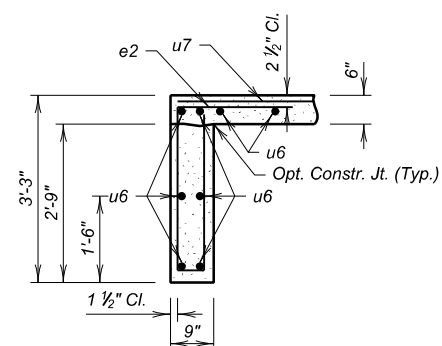
LEGEND FOR PLACING RE-STEEL	
O. F. W. W. - Outside Face of Wing Wall	
I. F. W. W. - Inside Face of Wing Wall	

ESTIMATED QUANTITIES			
ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
Inlet	42.7	4,924	28.6

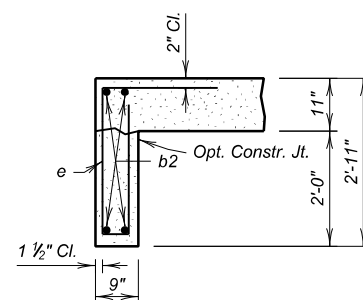
HALF PLAN



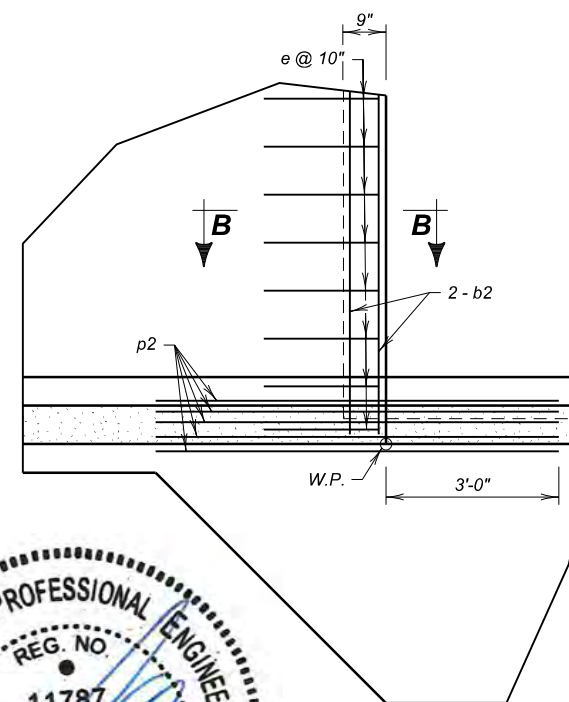
HALF PLAN



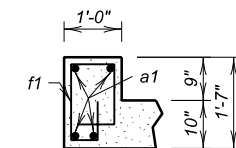
SEC. E - E



SEC. B - B



DETAIL "X"
(At Bottom Slab)



SEC. A - A
(At Top Slab)

OUTLET DETAILS (A)

FOR
2 - 10' X 10' BOX CULVERT

SPRING CREEK	SKEW 0°
STA 10+00.00	SEC. 35-T6N-R4E
STR. NO. 41-228-112	HL-93

LAWRENCE CO.
S. D. DEPT. OF TRANSPORTATION
MAY, 2026 (5) OF

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
D.C.	J.H.	D.H.	



REINFORCING SCHEDULE					Bending Details			
Mk.	No.	Size	Length	Type				
a1	4	6	21' - 9"	Str.				
b2	4	6	20' - 9"	Str.				
c	4	5	4' - 6"	1A				
c3	8	5	20' - 9"	Str.				
c4	4	5	7' - 0"	19B				
d2	8	5	6' - 6"	19B				
e	26	4	7' - 3"	S12				
e1	50	5	11' - 3"	S12A				
f1	22	4	5' - 0"	S6A				
g3	12	5	5' - 0"	Str.				
g4	18	4	26' - 0"	Str.				
h3	19	5	25' - 9"	17A				
k3	36	5	18' - 0"	17A				
p2	10	6	7' - 0"	Str.				
p7	10	4	21' - 6"	Str.				
p8	4	4	22' - 3"	Str.				
p9	4	4	24' - 3"	Str.				
p10	4	4	26' - 6"	Str.				
OUTLET APRON								
e2	20	4	8' - 0"	S12				
u6	25	4	19' - 3"	Str.				
u7	20	4	18' - 6"	Str.				
c4	4	5	4' - 6"	1A				
c3	8	5	20' - 9"	Str.				
c4	4	5	7' - 0"	19B				
d2	8	5	6' - 6"	19B				
e	26	4	7' - 3"	S12				
e1	50	5	11' - 3"	S12A				
f1	22	4	5' - 0"	S6A				
g3	12	5	5' - 0"	Str.				
g4	18	4	26' - 0"	Str.				
h3	19	5	25' - 9"	17A				
k3	36	5	18' - 0"	17A				
p2	10	6	7' - 0"	Str.				
p7	10	4	21' - 6"	Str.				
p8	4	4	22' - 3"	Str.				
p9	4	4	24' - 3"	Str.				
p10	4	4	26' - 6"	Str.				
OUTLET APRON								
e2	20	4	8' - 0"	S12				
u6	25	4	19' - 3"	Str.				
u7	20	4	18' - 6"	Str.				
c4	4	5	4' - 6"	1A				
c3	8	5	20' - 9"	Str.				
c4	4	5	7' - 0"	19B				
d2	8	5	6' - 6"	19B				
e	26	4	7' - 3"	S12				
e1	50	5	11' - 3"	S12A				
f1	22	4	5' - 0"	S6A				
g3	12	5	5' - 0"	Str.				
g4	18							



ESTIMATED QUANTITIES			
ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
Outlet	33.7	4,053	21.2

LEGEND FOR PLACING RE-STEEL
<i>O. F. W. W. - Outside Face of Wing Wall</i>
<i>I. F. W. W. - Inside Face of Wing Wall</i>

OUTLET DETAILS (B)

FOR

2 - 10' X 10' BOX CULVERT

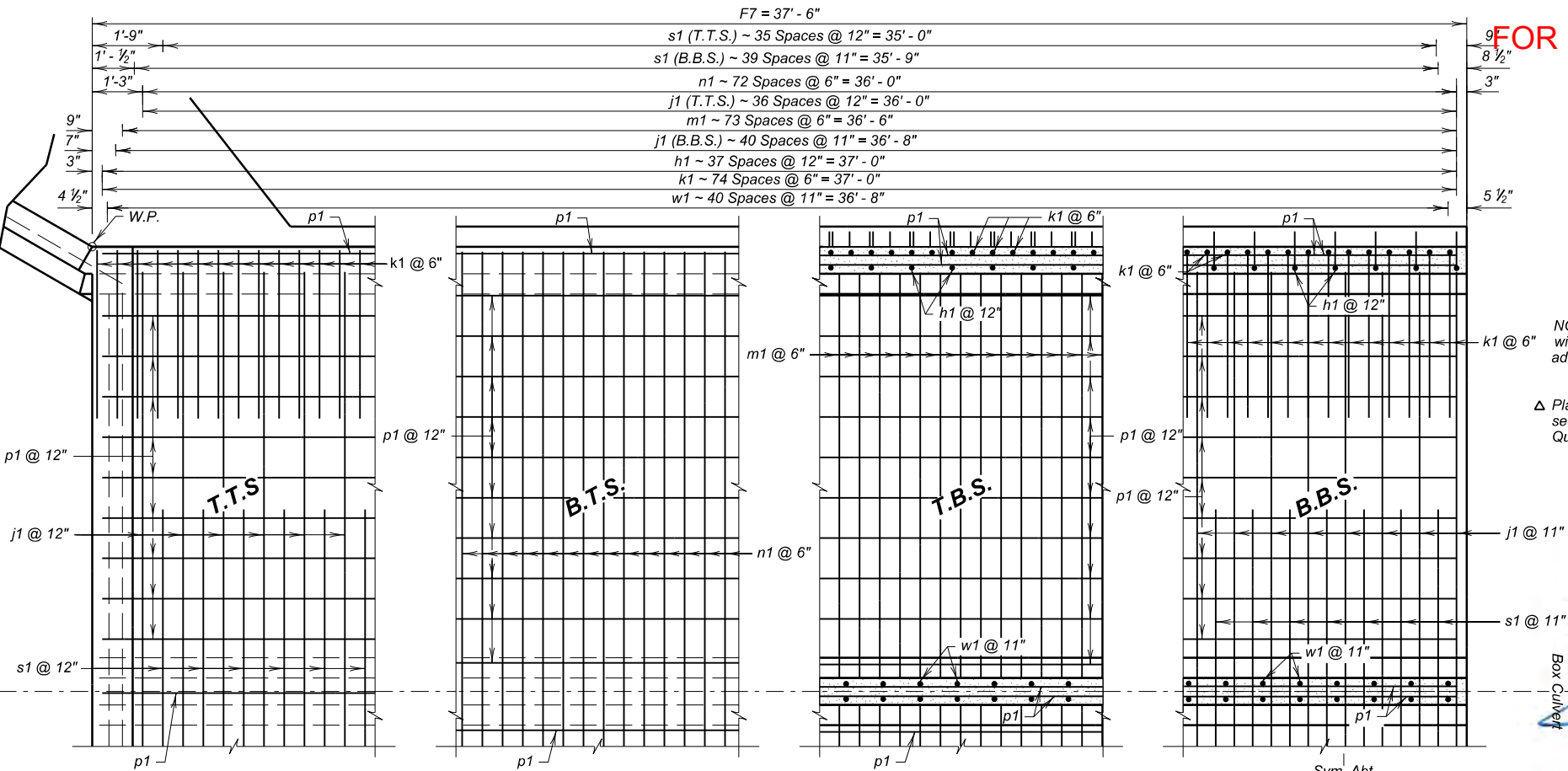
SPRING CREEK
STA 10+00.00
STR. NO. 41-228-112

SKEW 0°
SEC. 35-T6N-R4E
HL-93

LAWRENCE CO.
S. D. DEPT. OF TRANSPORTATION
MAY, 2026 (6) OF

DESIGNED BY D.C.	DRAWN BY J.H.	CHECKED BY D.H.	APPROVED
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FOR BIDDING PURPOSES ONLY



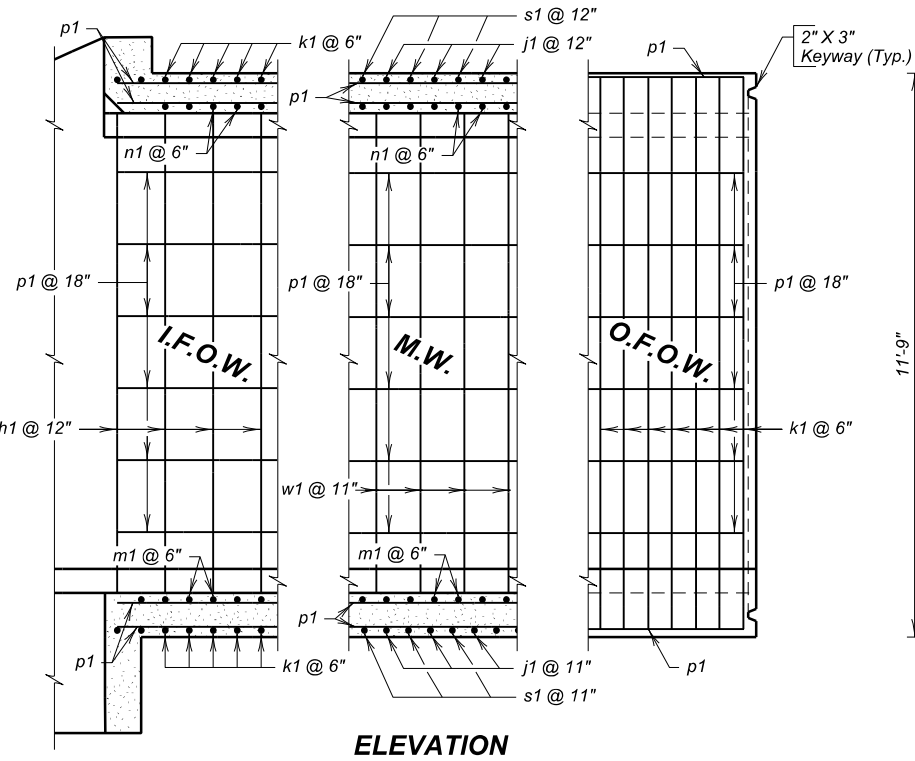
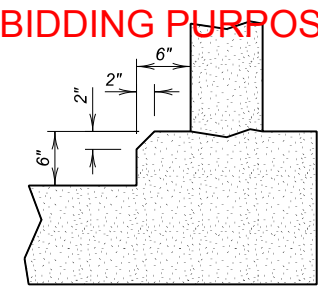
HALF PLAN
(Inlet End shown, Outlet End similar by rotation.)



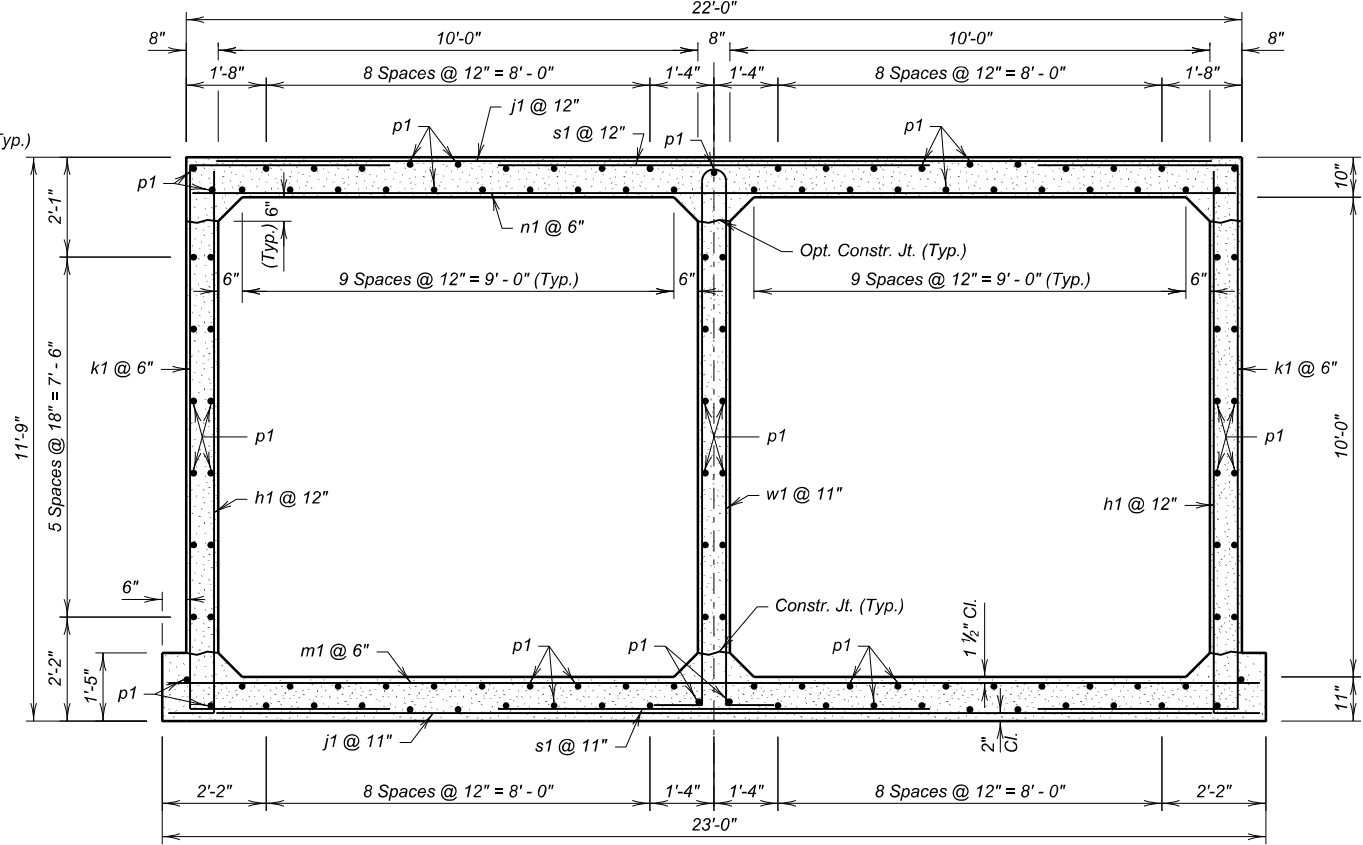
OPTIONAL FILLET DETAIL
(At Bottom Slab)

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

Δ Place z1 bars thru construction joint between barrel sections as shown on Standard Plate No. 460.10. Quantity of z1 bars is for one construction joint.



ELEVATION

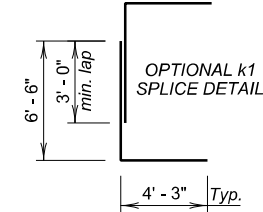


BARREL SECTION

REINFORCING SCHEDULE
(For 2 ~ F7 Barrel End Sections)

Mk.	No.	Size	Length	Type	Bending Details
h1	152	5	12' - 3"	17A	
j1	156	5	20' - 9"	Str.	
k1	300	5	20' - 0"	17	
m1	148	5	22' - 9"	Str.	
n1	146	5	21' - 9"	Str.	
p1	246	4	37' - 0"	Str.	
s1	152	5	9' - 0"	Str.	
w1	82	5	25' - 3"	S11A	
z1	58	5	3' - 6"	Str.	

OPTIONAL k1 SPLICE DETAIL



OPTIONAL k1 SPLICE DETAIL
Contractor may use optimal reinforcing steel splice, as shown. The cost of the additional reinforcing steel shall be borne by the Contractor.

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.

ESTIMATED QUANTITIES

ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
2 - F7 Barrel Sections	164.0	28,278	57.0

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
O. F. W. W. - Outside Face of Wing Wall
I. F. W. W. - Inside Face of Wing Wall
M. W. - Middle Wall

OPTIONAL POUR - BOTTOM SLAB

The Bottom Slab may 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 will be full width of the bottom slab. Care will be taken to maintain proper alignment of the keyway during the pour sequence. All additional costs of this option will be borne by the contractor.

BARREL END SECTION DETAILS

FOR
2 - 10' X 10' BOX CULVERT

SPRING CREEK
STA 10+00.00
STR. NO. 41-228-112

SKREW 0°
SEC. 35-T6N-R4E
HL-93

LAWRENCE CO.
S. D. DEPT. OF TRANSPORTATION
MAY, 2026

7 OF 9

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
D.C.	J.H.	D.H.	



1. 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.
2. Year plates will be located on structure(s) as follows:
 - a. On cast-in-place box culverts the year plates will be four and one - half (4 ½) 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.
 - b. 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.
 - c. 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.
3. 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.



BARRIER
(With Endblock)

JERSEY BARRIER

SINGLE SLOPE BARRIER

January 22, 2021

Published Date: 2027

SDOT

YEAR PLATE DETAILS

PLATE NUMBER
460.02

Sheet 1 Of 1



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"

1. *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.*
2. *Drainage Fabric Protection will be placed in accordance with Section 422, or Section 560, whichever is applicable.*



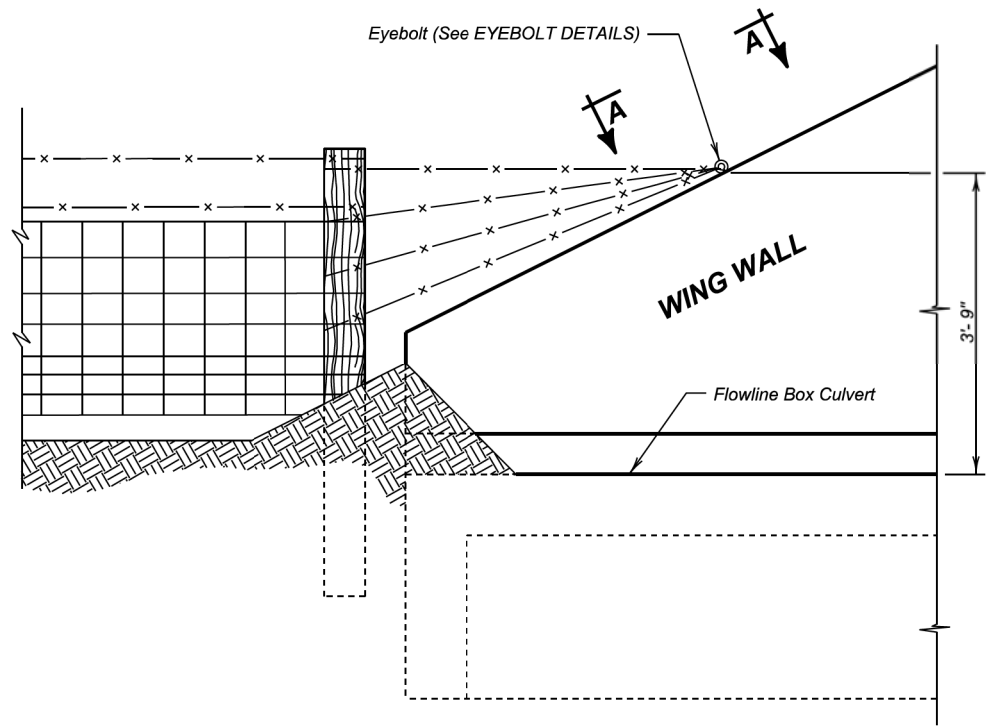
Published Date: 2027

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BOX CULVERT BARREL TIE REINFORCEMENT

PLATE NUMBER
460.10

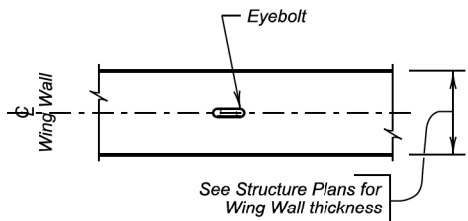
Sheet 1 of 1



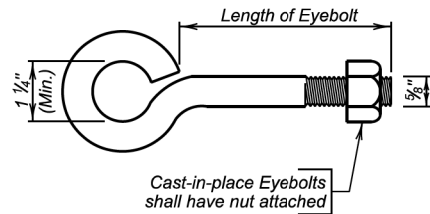
DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

- 1. The fence and post details shown are for illustrative purpose only. The fence shall be as specified elsewhere in the plans.
- 2. Eyebolts shall be placed on all of the box culvert wing walls.
- 3. Eyebolts shall be 5/8 inch diameter and shall conform to ASTM A307.
- 4. 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.
- 5. 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.
- 6. 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

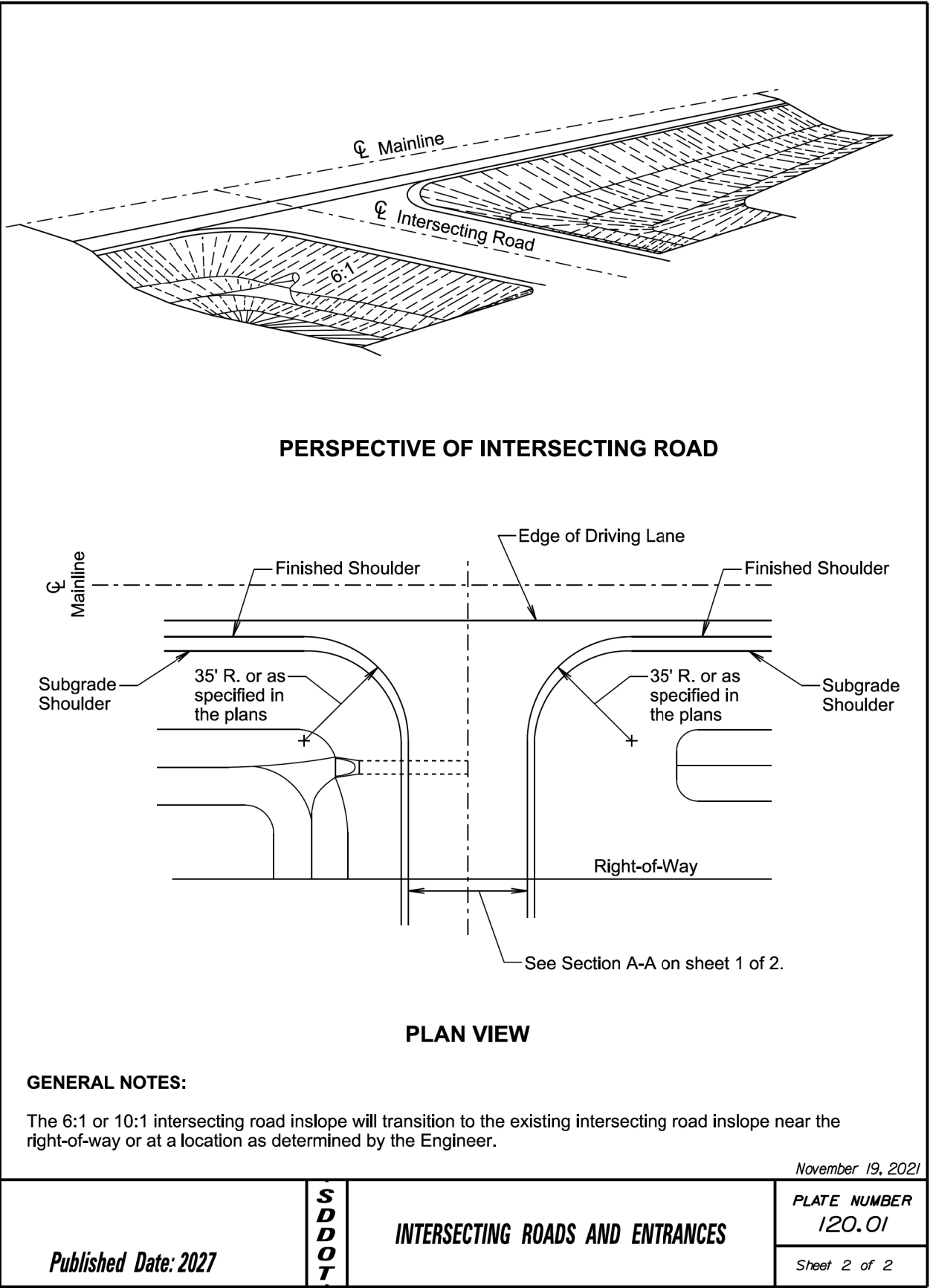
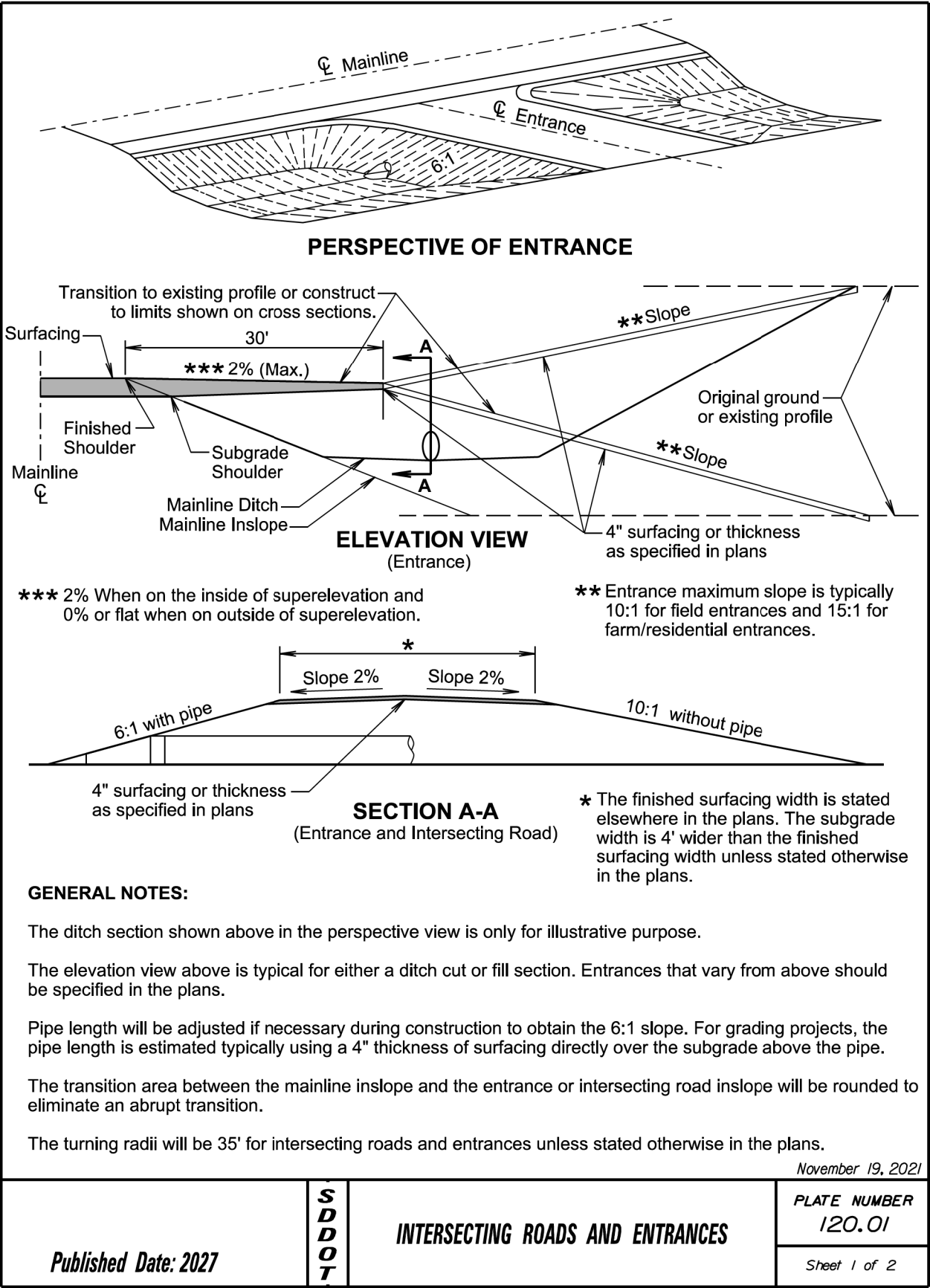
Published Date: 2027

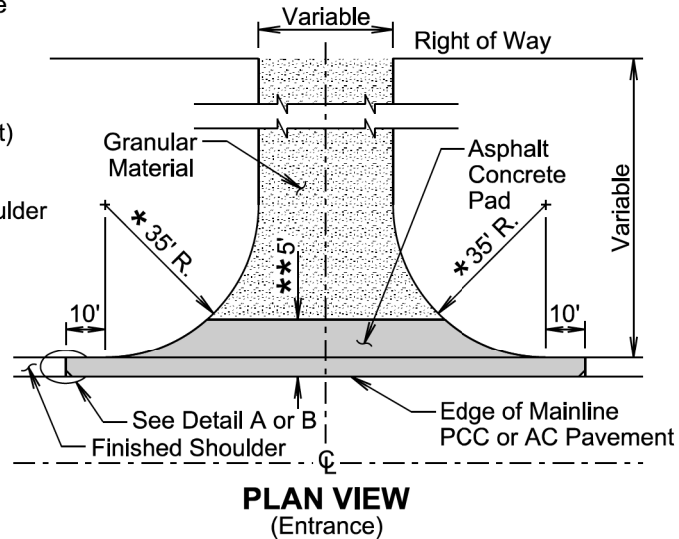
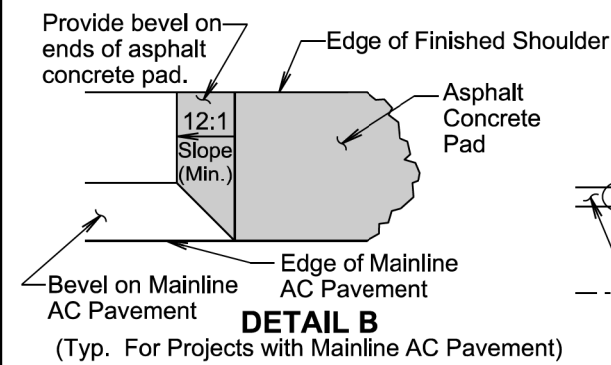
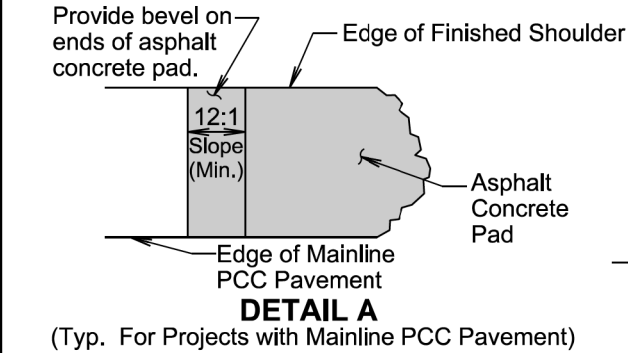
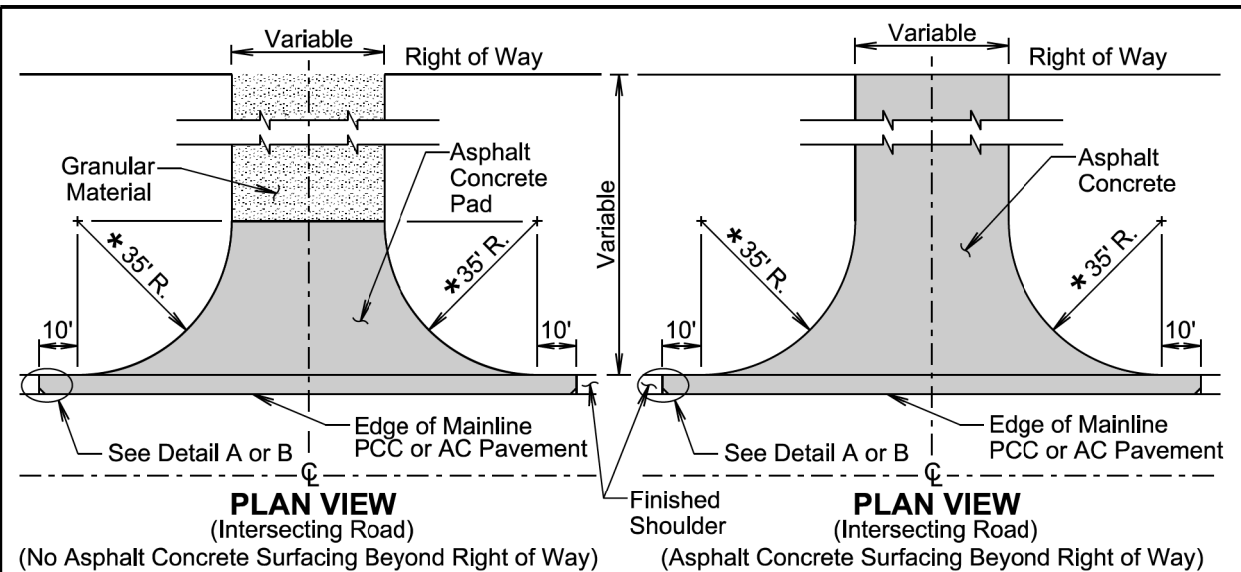
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FENCE ANCHORS FOR
BOX CULVERT WING WALLS

PLATE NUMBER
620.16

Sheet 1 of 1





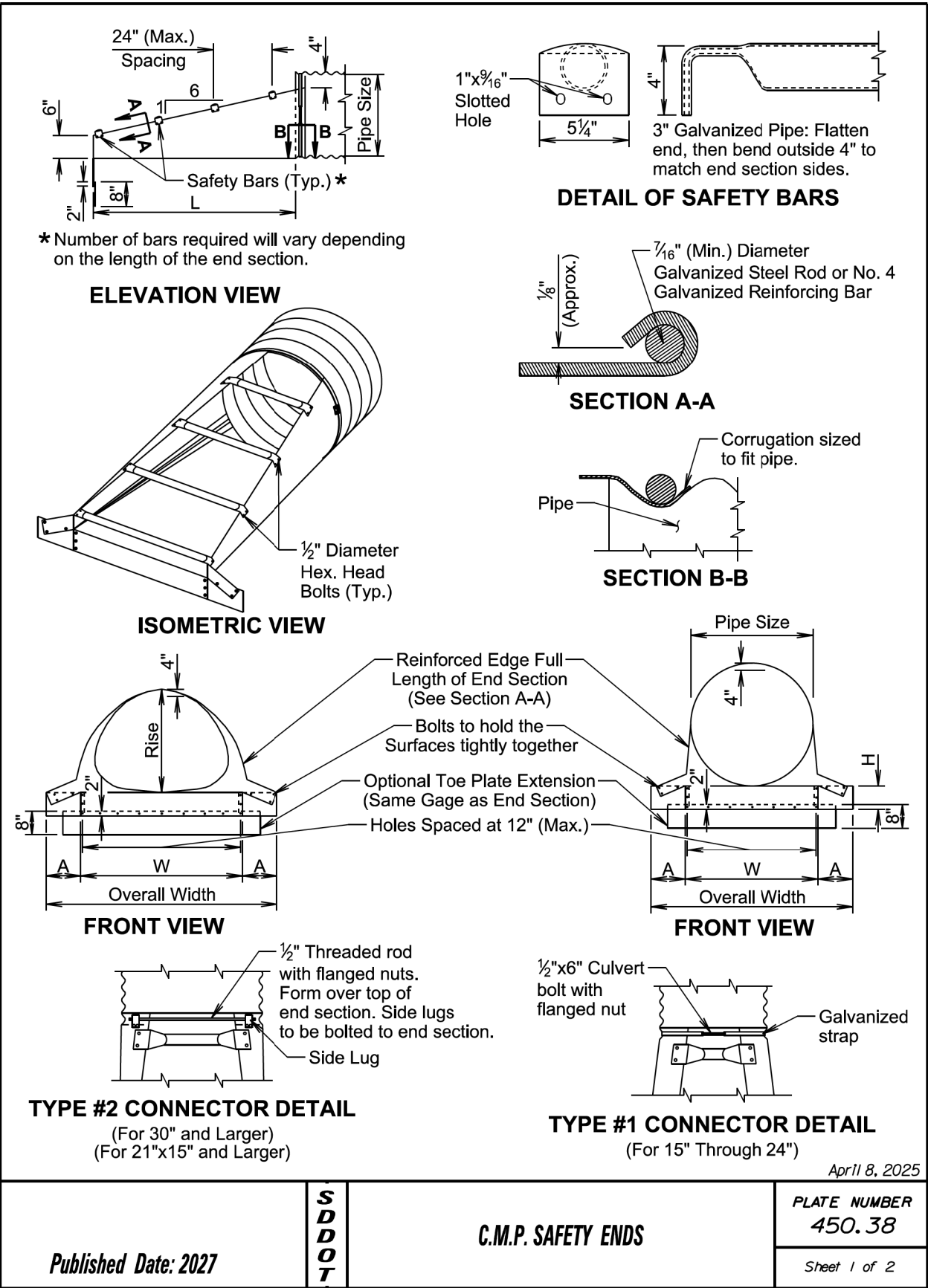
GENERAL NOTES:

The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

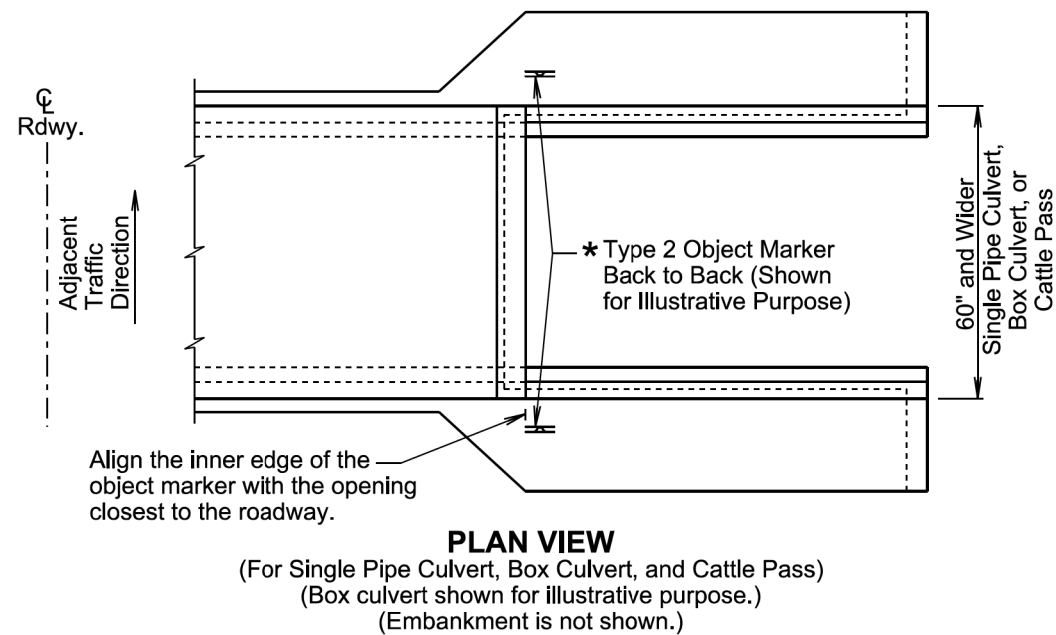
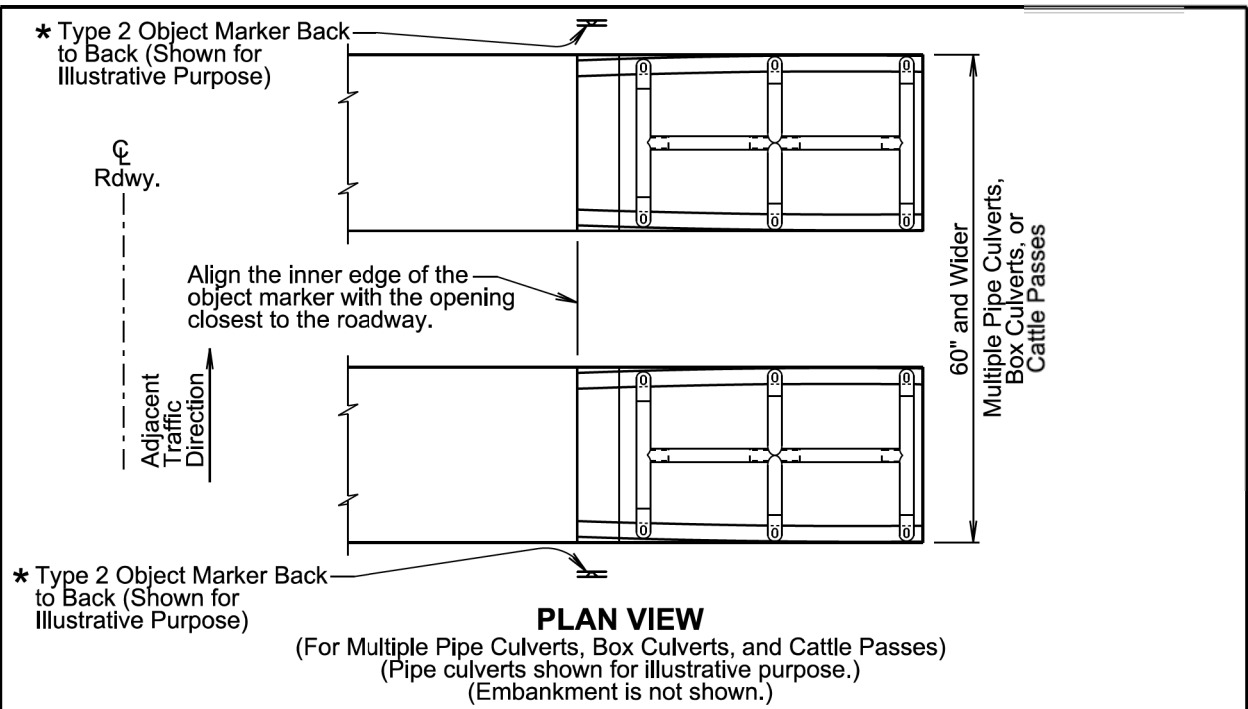
* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

** For shoulder widths < 4', the Asphalt Concrete Pad width must be 5'. For shoulders widths of 4' or more, pave the full width of the shoulder only.

August 27, 2020



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF -B 6545 (04)	33	53



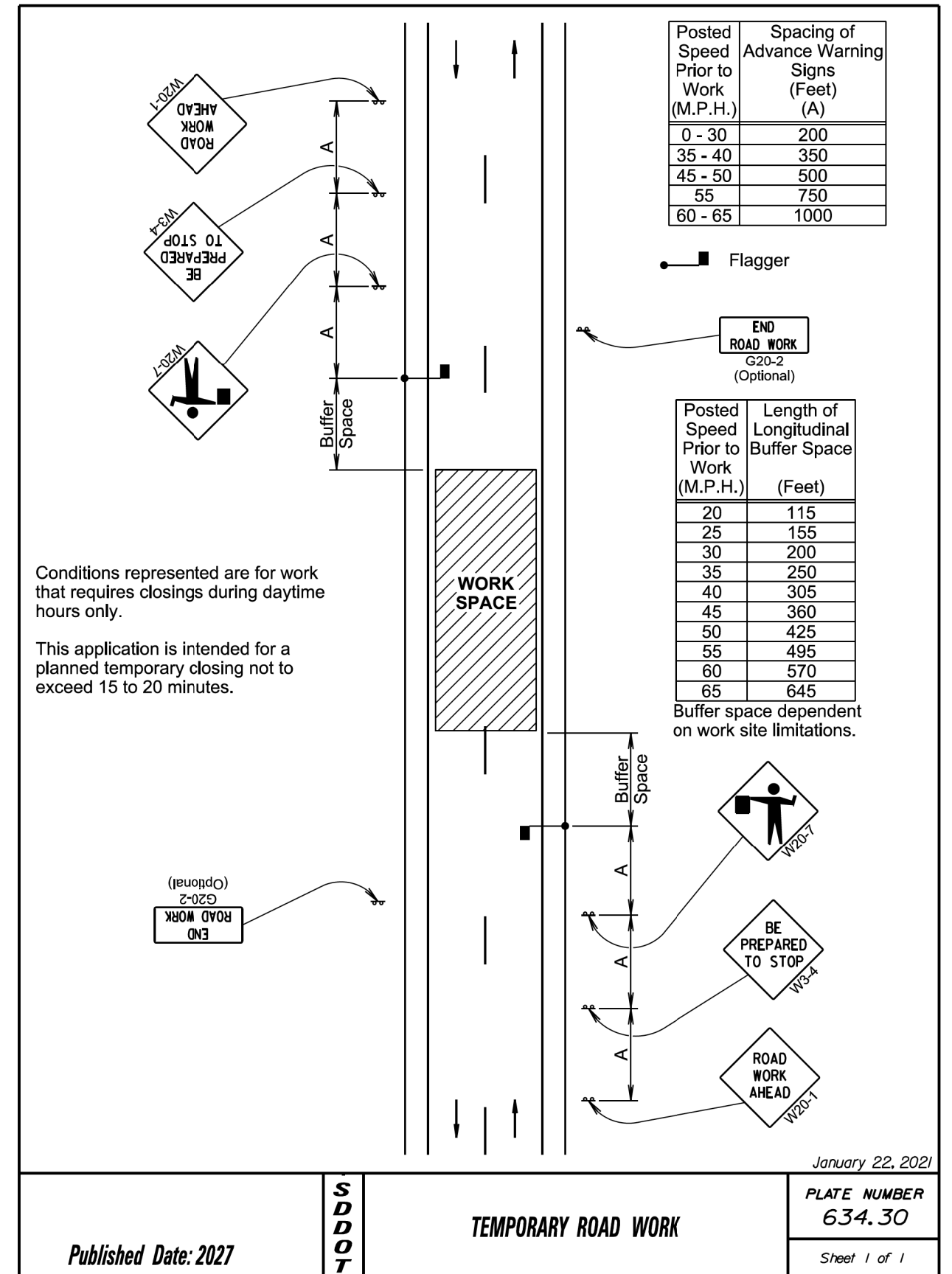
GENERAL NOTES:

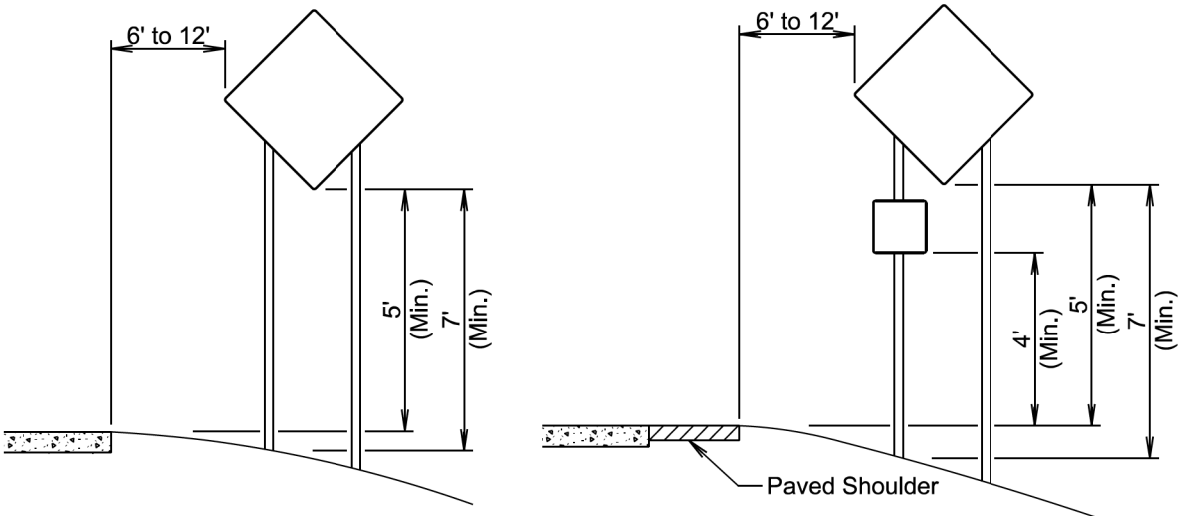
This standard plate will be used in conjunction with standard plate 632.01.

* 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

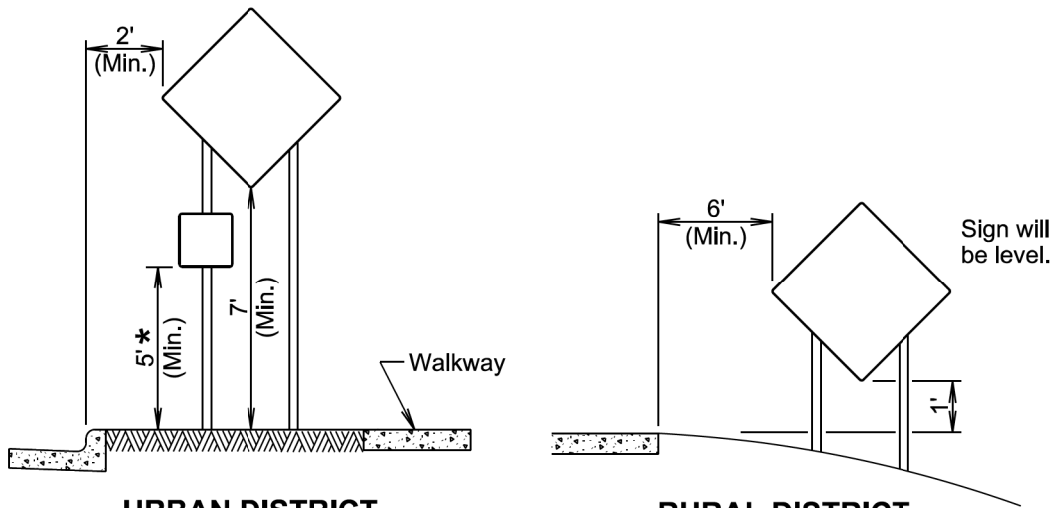
Published Date: 2027	S D D O T	TYPE 2 OBJECT MARKER AT PIPE CULVERTS, BOX CULVERTS, AND CATTLE PASSES (60" and Greater Overall Width)	PLATE NUMBER 632.04
			Sheet 1 of 1





RURAL DISTRICT

RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT

RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

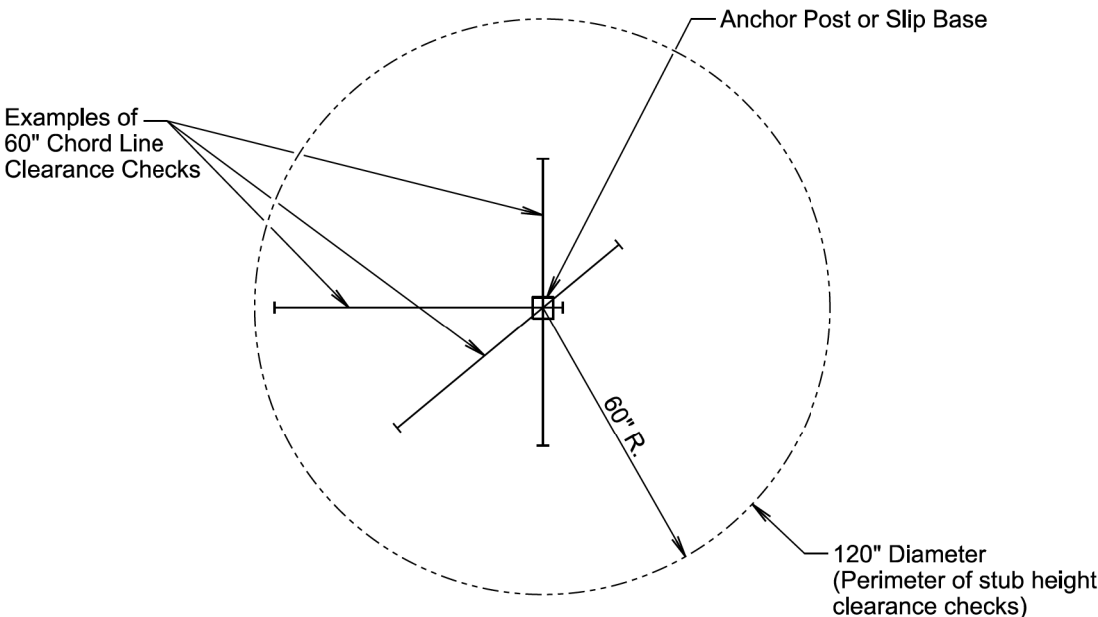
Published Date: 2027

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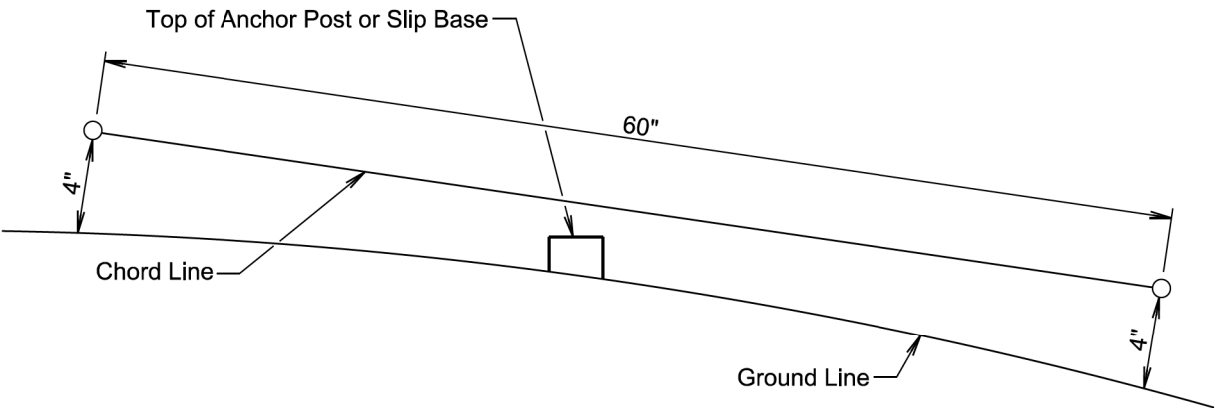
CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

PLATE NUMBER
634.85

Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

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

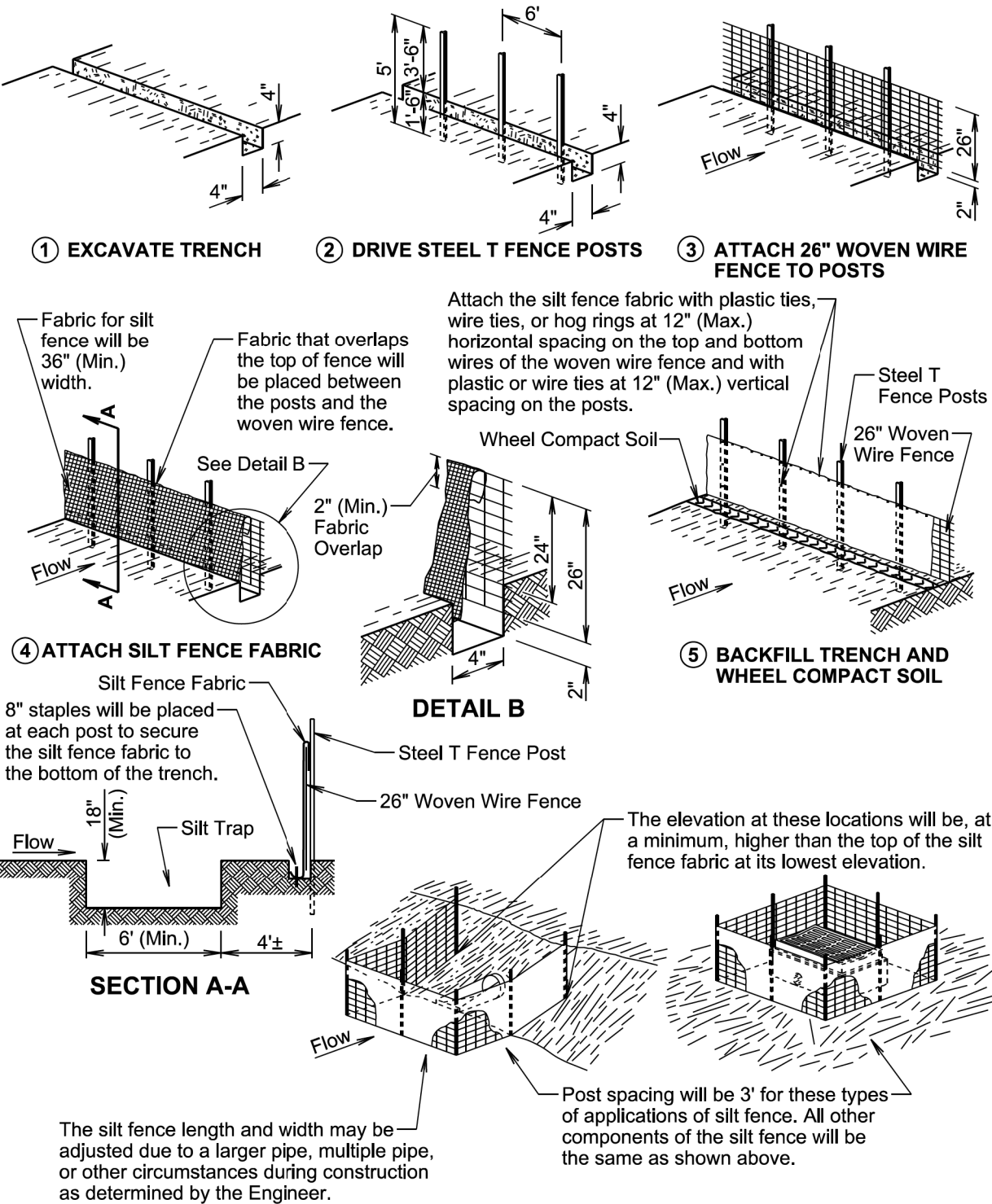
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BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER
634.99

Sheet 1 of 1

MANUAL LOW FLOW SILT FENCE INSTALLATION



February 14, 2020

Published Date: 2027

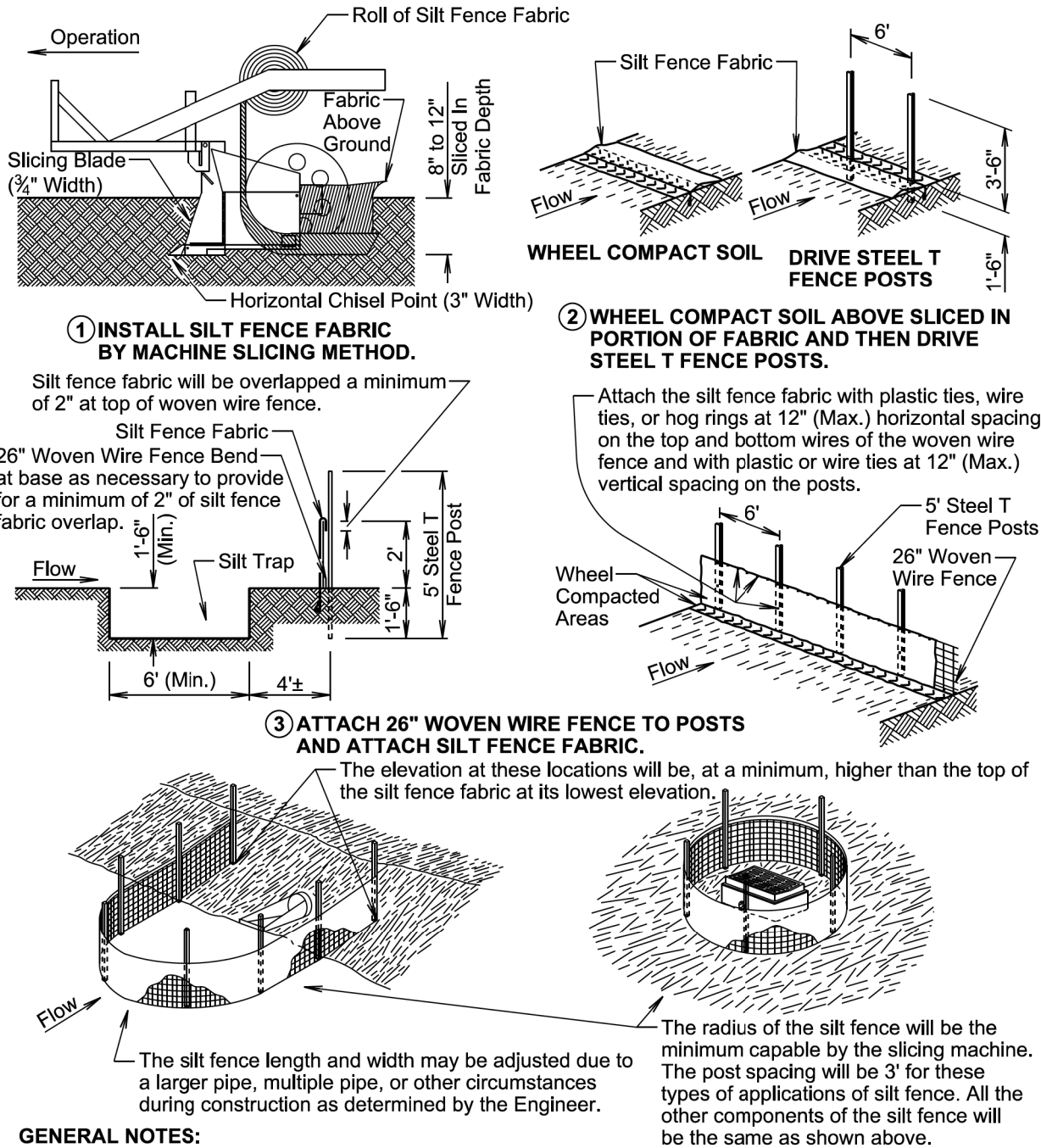
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LOW FLOW SILT FENCE
AND SILT TRAP

PLATE NUMBER
734.04

Sheet 1 of 2

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



GENERAL NOTES:

A silt trap will be provided when specified by a plan note. All costs for constructing the silt trap will be incidental to the contract unit price per cubic yard for "Silt Trap".

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

Published Date: 2027

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LOW FLOW SILT FENCE
AND SILT TRAP

PLATE NUMBER
734.04

Sheet 2 of 2

Spacing Varies (See Table)

Flow

See Detail B

ELEVATION VIEW
(Cut or Fill Slope Installation)

CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40

Excavated Material from Trench

Flow

Wood Stake

9" (Min.)

DETAIL B
(Typical of All Installations)

6"

6"

Ends of Erosion Control Wattles

Wood Stake

DETAIL C
(See General Notes)

Point A

Point B

Flow

A

ISOMETRIC VIEW
(Ditch Installation)

DITCH INSTALLATION	
Grade	Spacing (Ft.)
2%	150
3%	100
4%	75
5%	50

Point A

Point B

Flow

Wood Stake (Typ.)

PLAN VIEW
(Ditch Installation)

Point A

Point B

Wood Stake

SECTION A-A

February 14, 2020

Published Date: 2027	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

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".

TRAFFIC DIVERSION PIPE CROSS SECTION

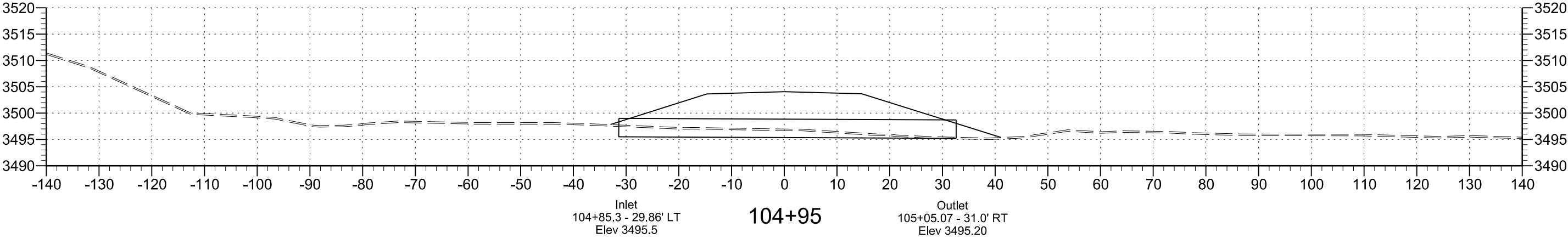
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545 (04)	38	53



Note: Shape inlet & outlet as required
Minimum of 5' around pipe ends.

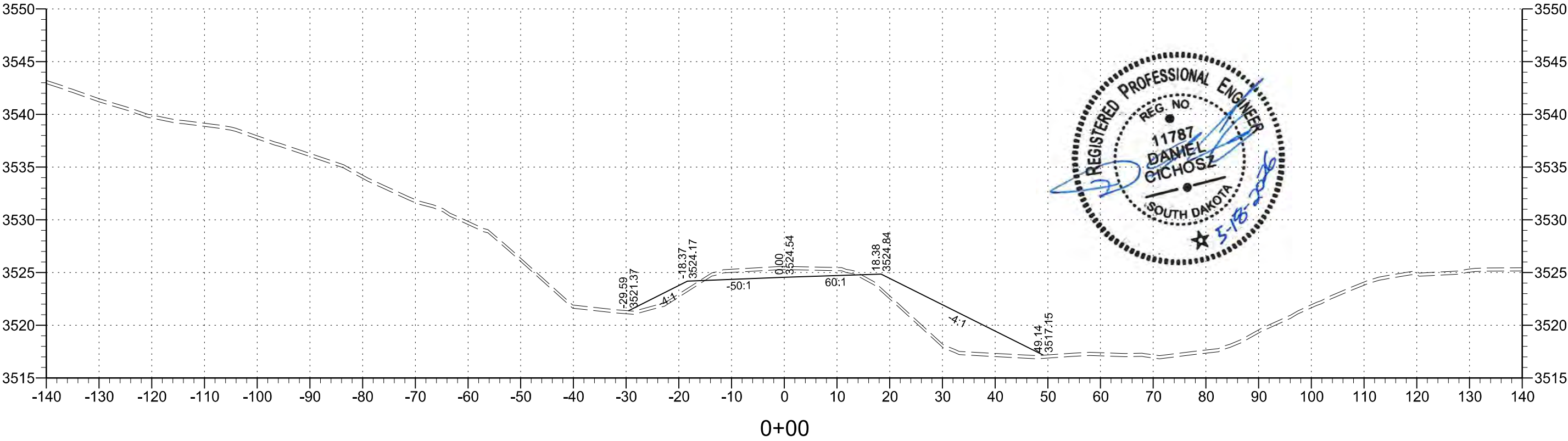
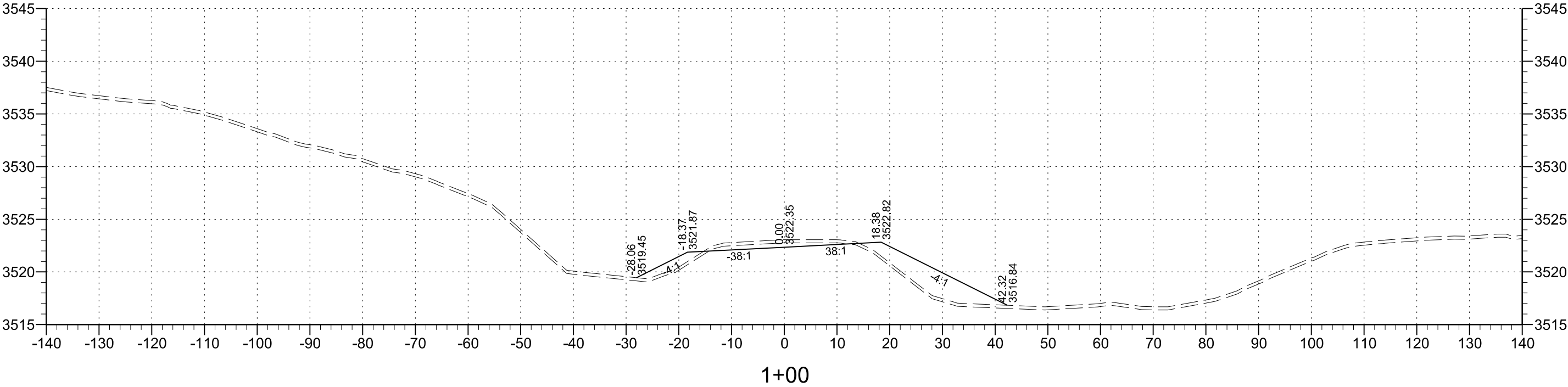
104+95 - ∇ 18° Skew RHF
Install 1 x 42" x 64' CMP (12 GA)
Or
104+95 - ∇ 18° Skew RHF
Install 2 x 30" x 64' CMP (12 GA)



MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

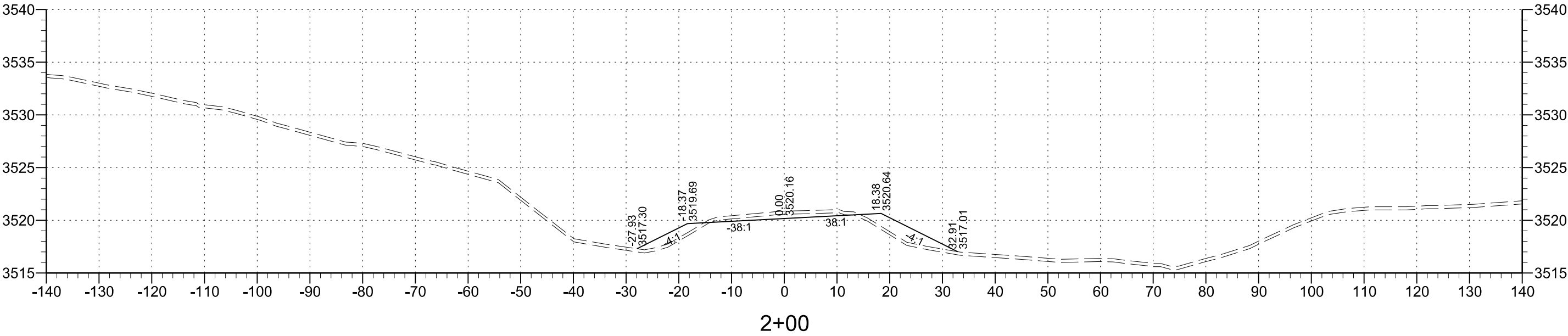
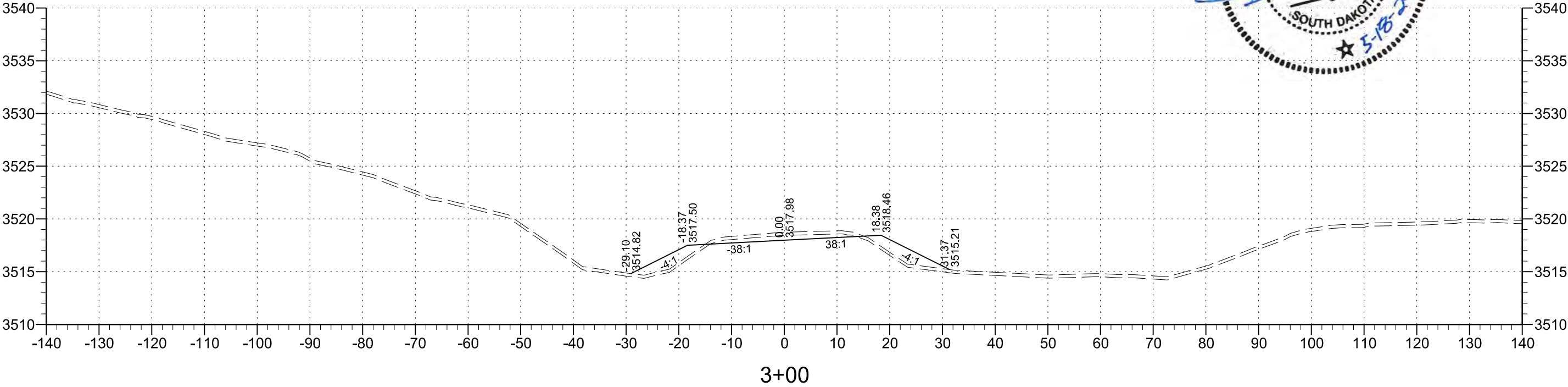
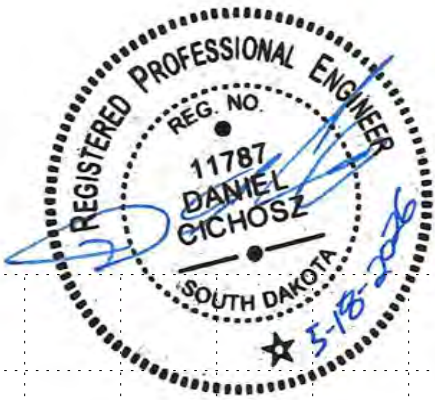
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF -B 6545 (04)	39	53



MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

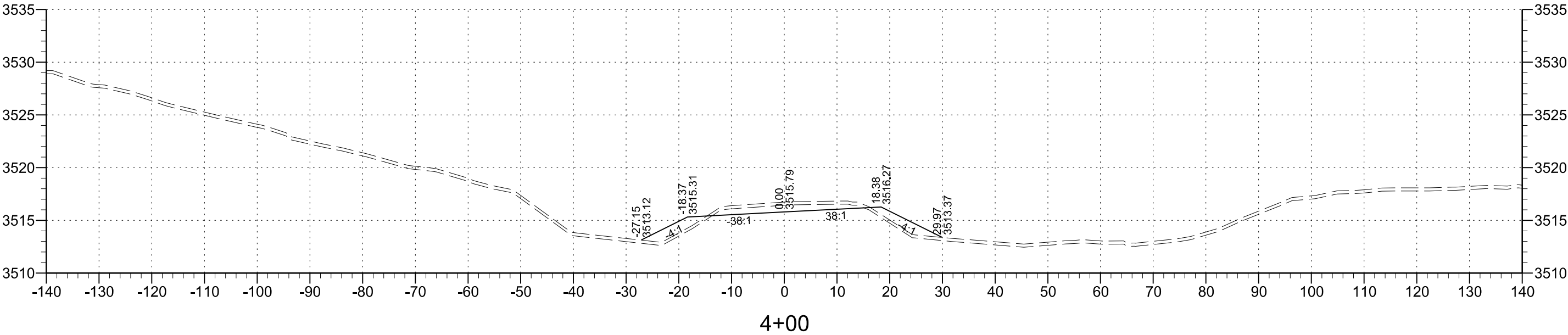
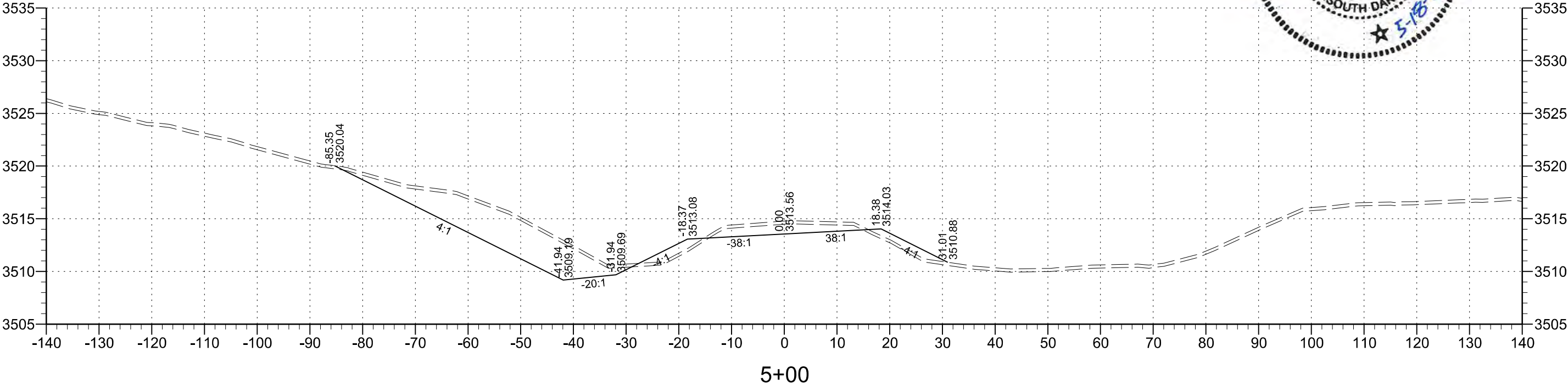
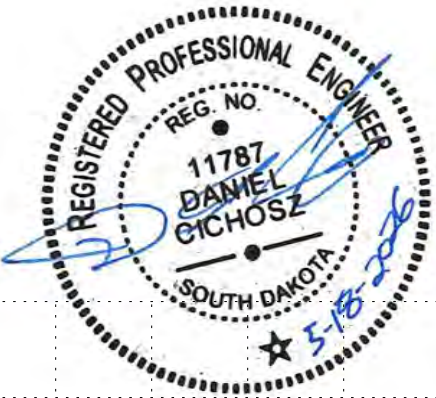
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF -B 6545 (04)	40	53



MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

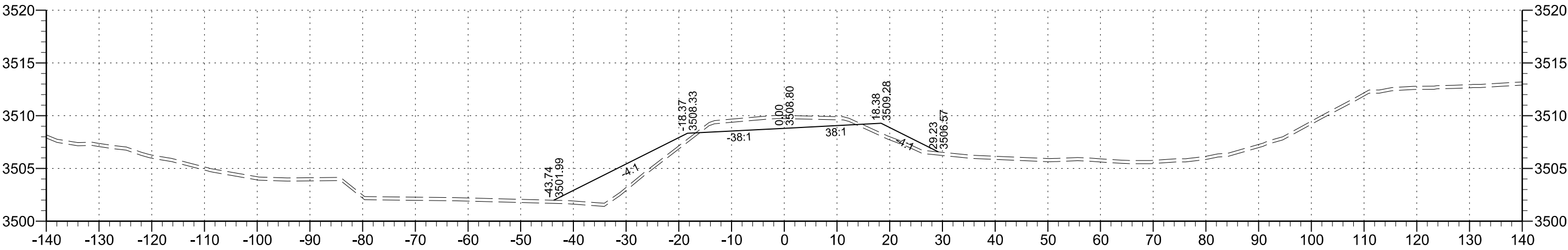
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	41	53



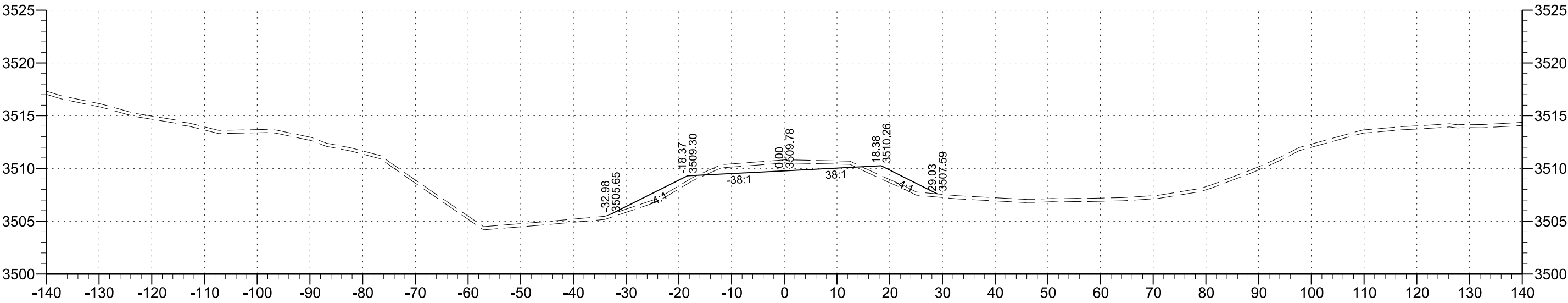
MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

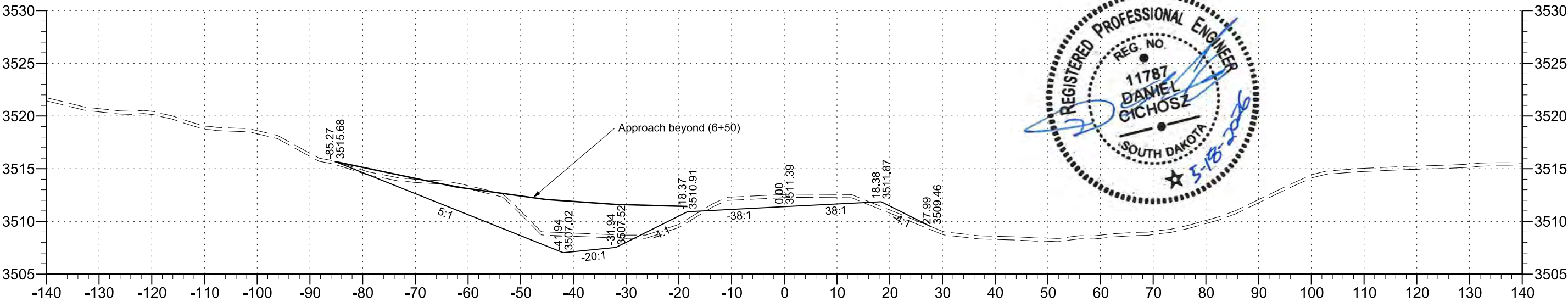
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	42	53



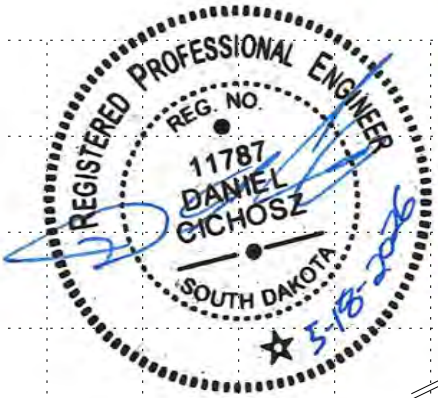
8+00



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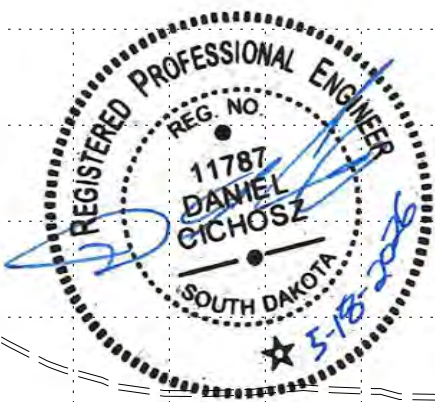
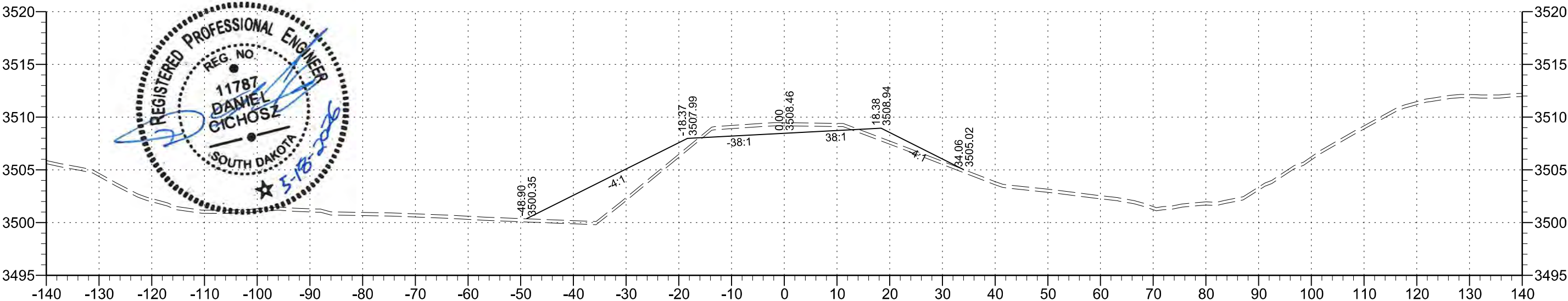
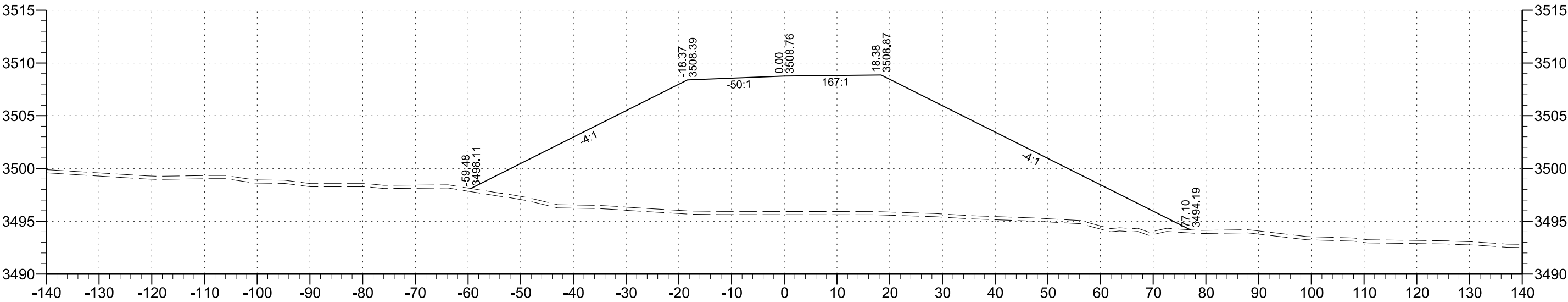
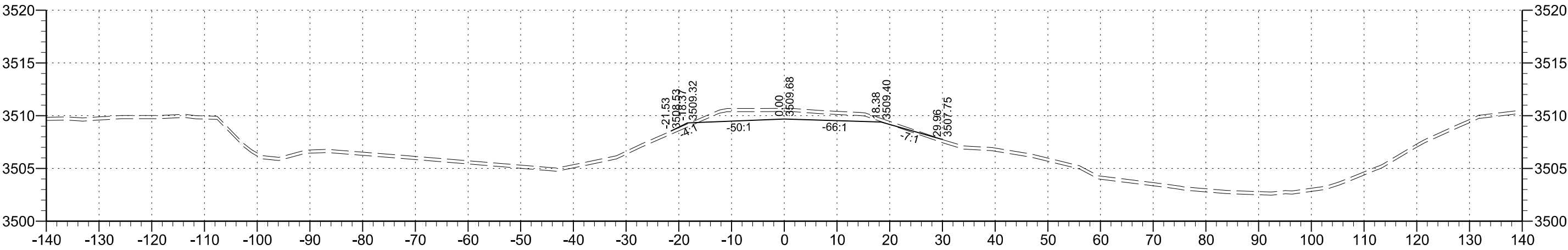
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MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

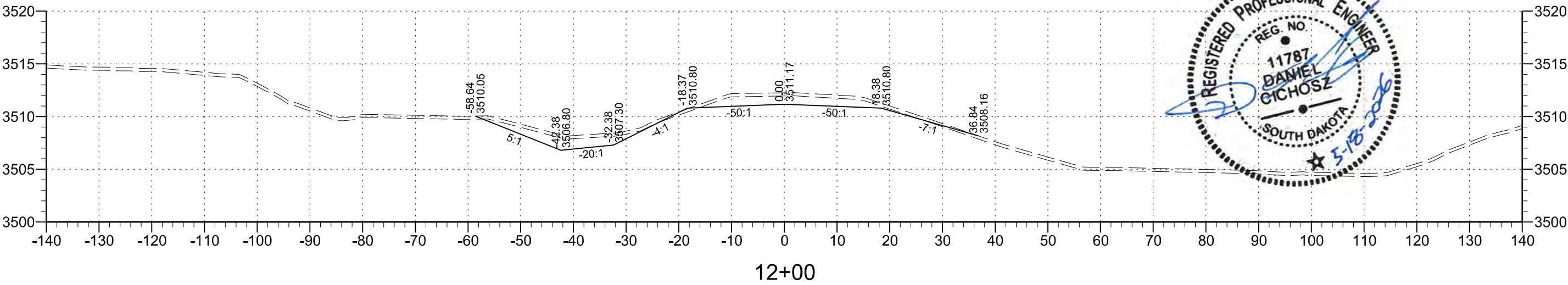
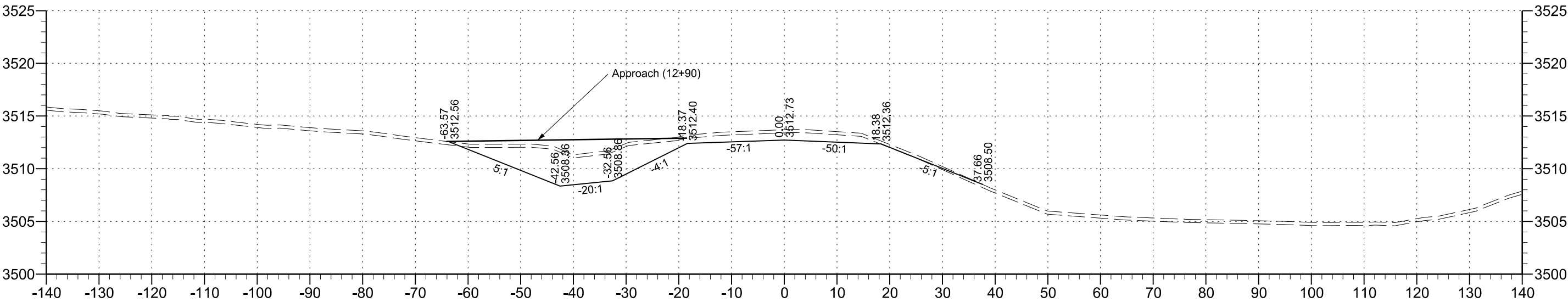
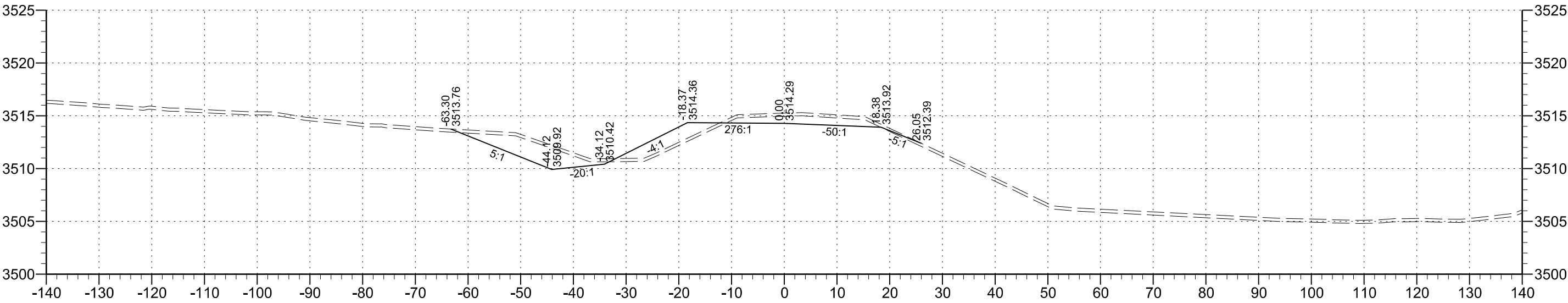
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	43	53



MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

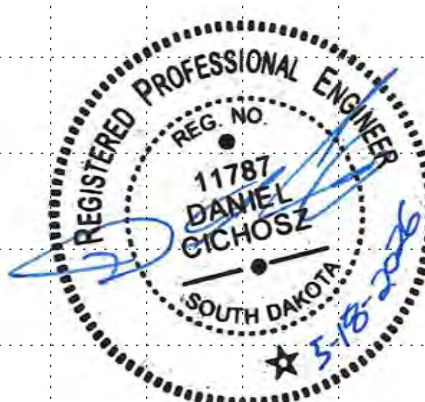
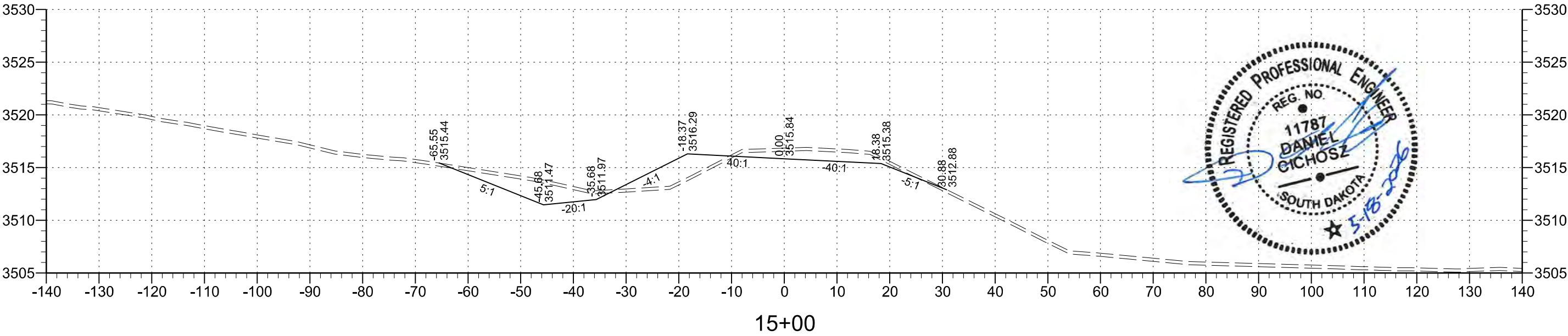
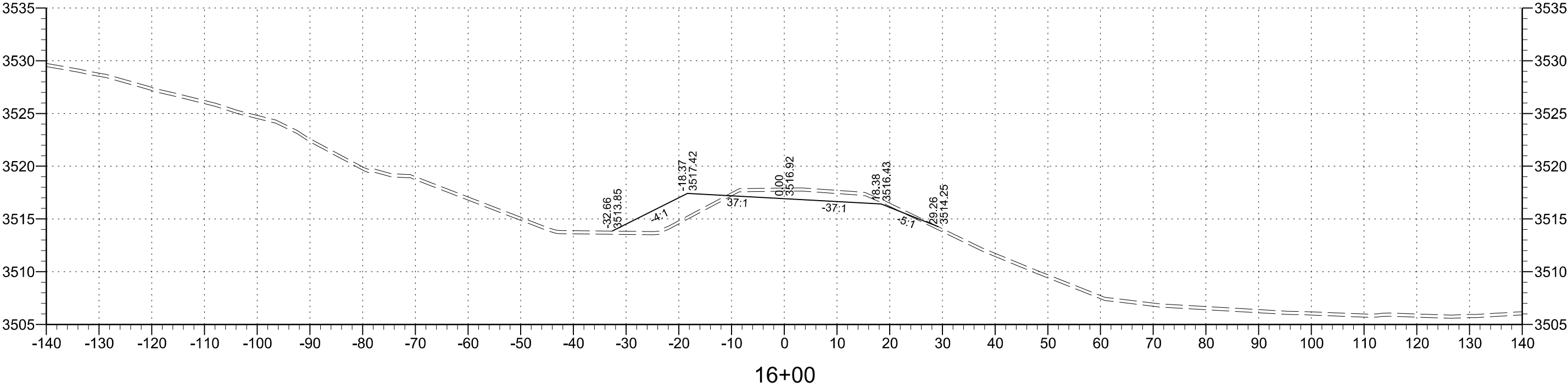
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	44	53



MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

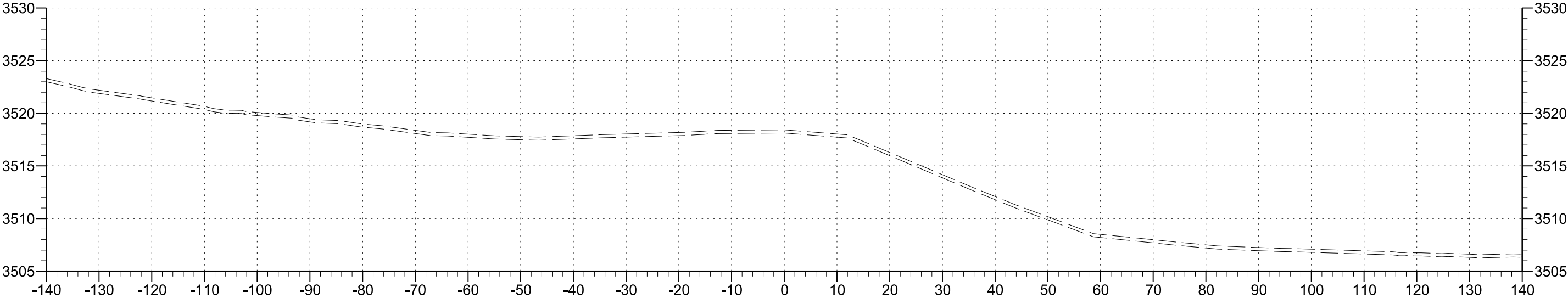
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF -B 6545 (04)	45	53



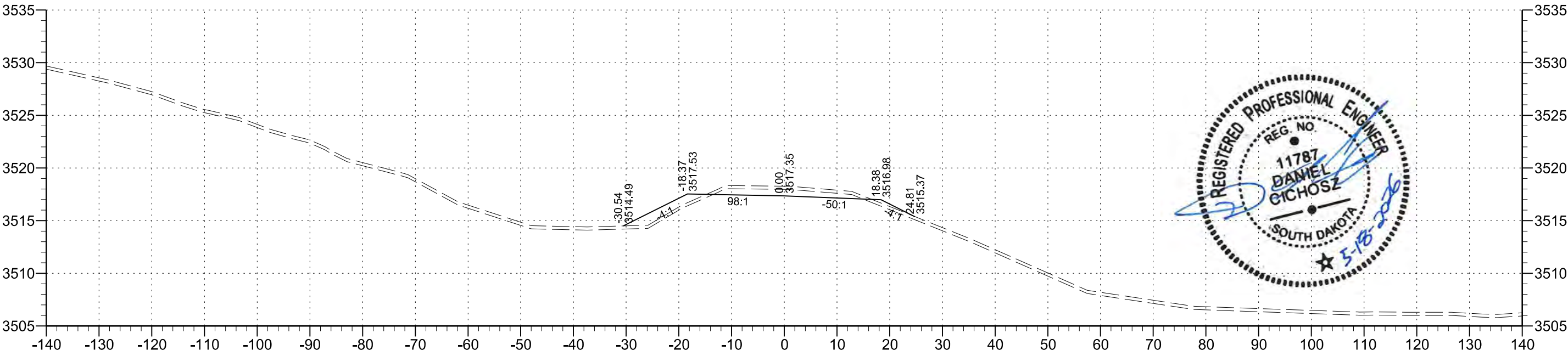
MAINLINE CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF -B 6545 (04)	46	53



18+00

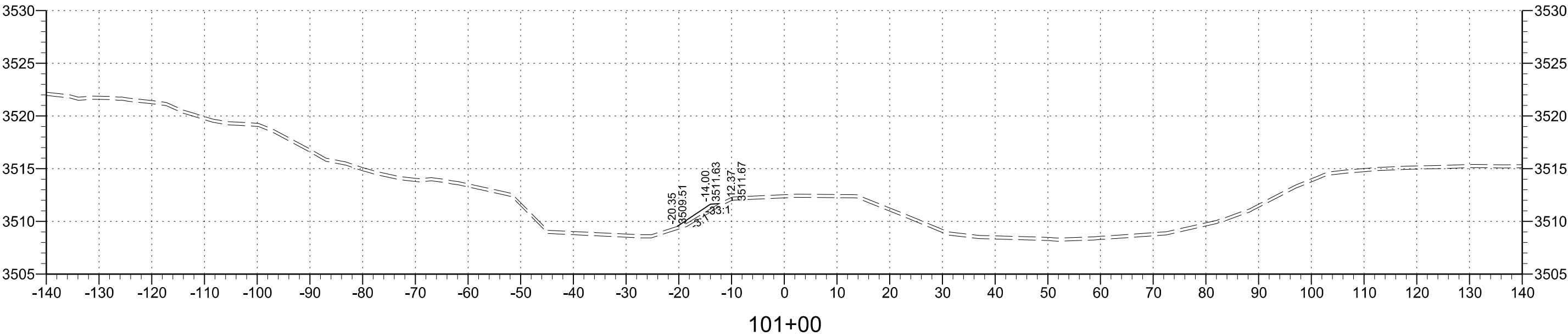
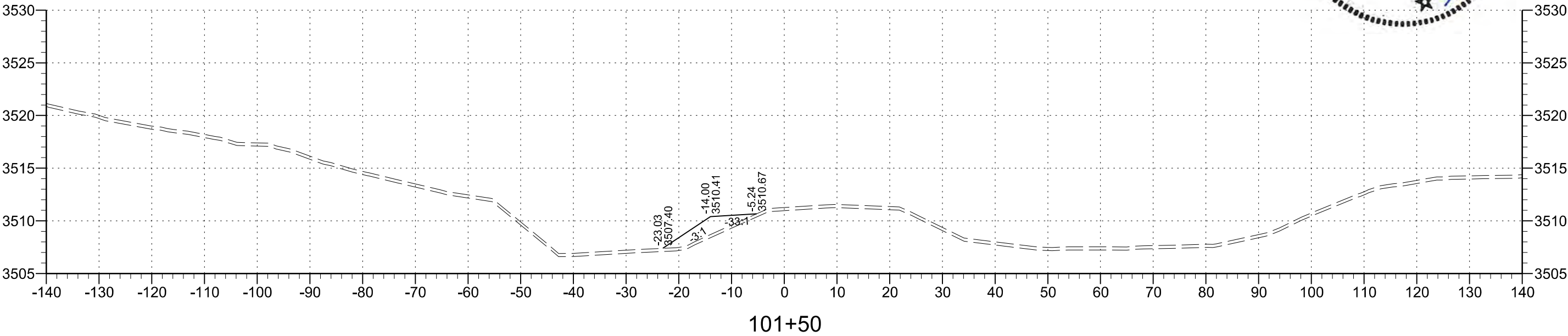


17+00

TRAFFIC DIVERSION CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

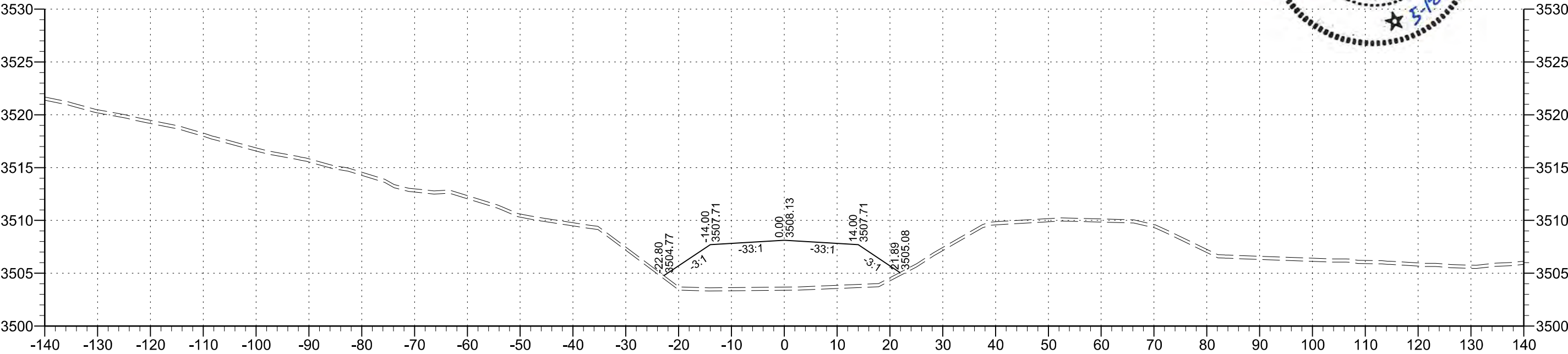
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	BRF-B 6545(04)	47	53



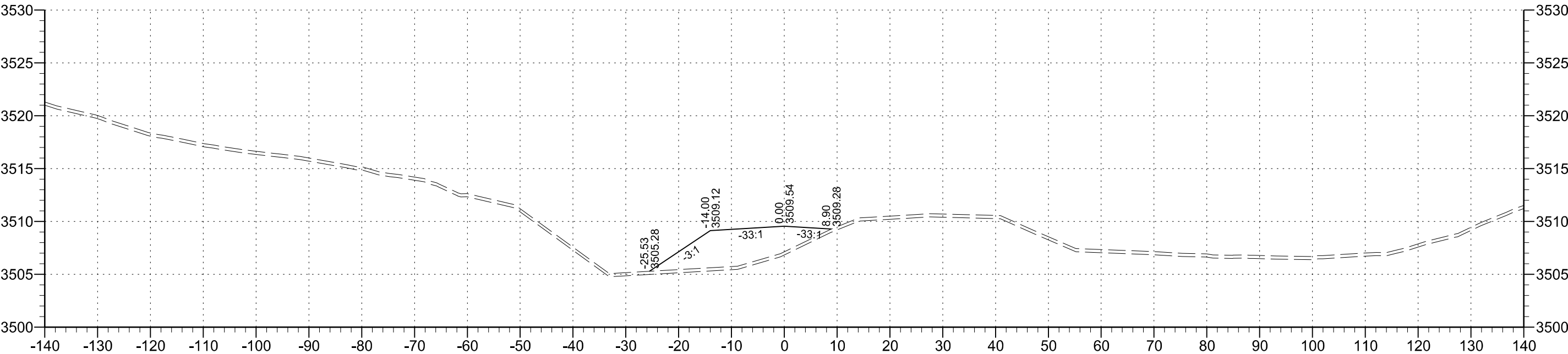
TRAFFIC DIVERSION CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	48	53



102+50

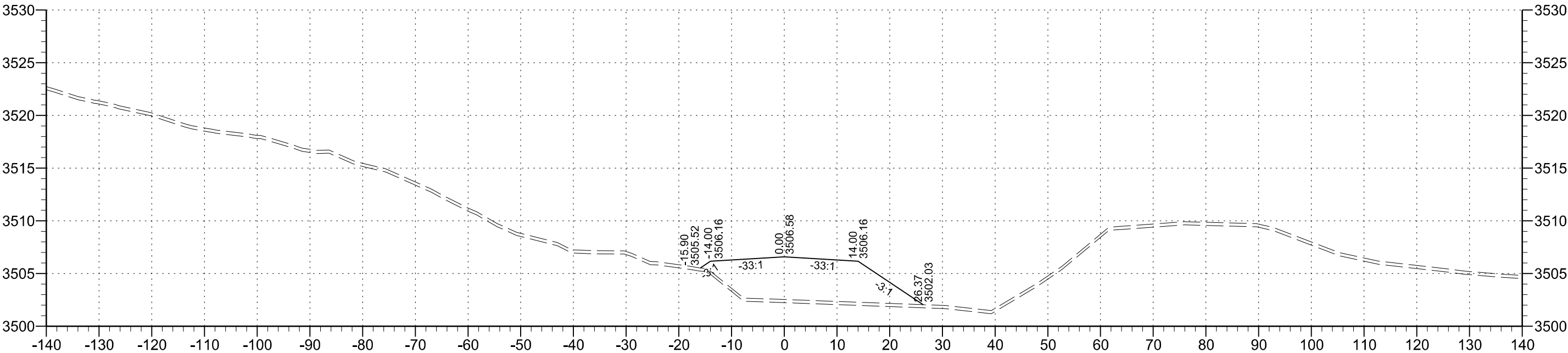
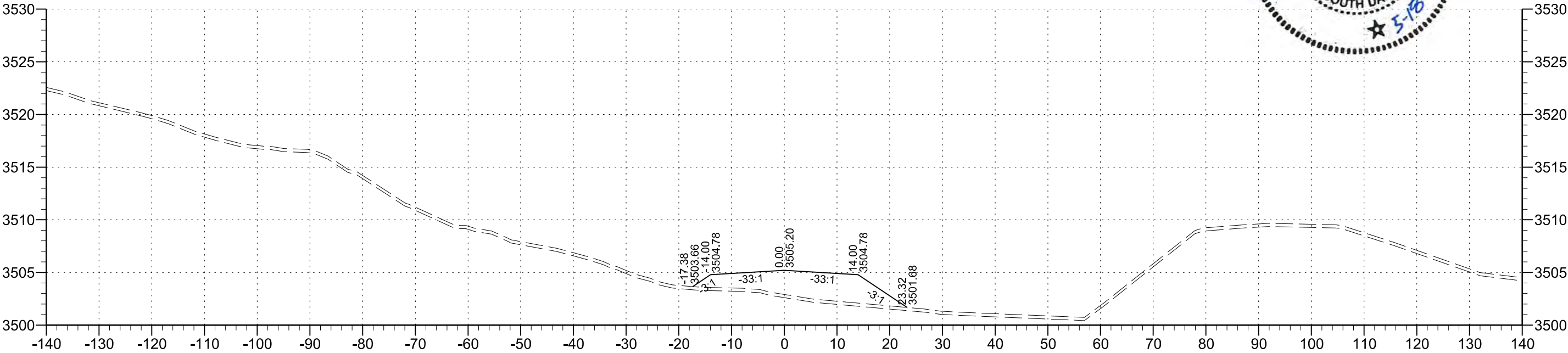
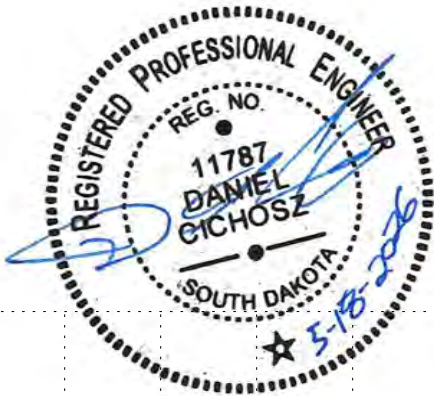


102+00

TRAFFIC DIVERSION CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

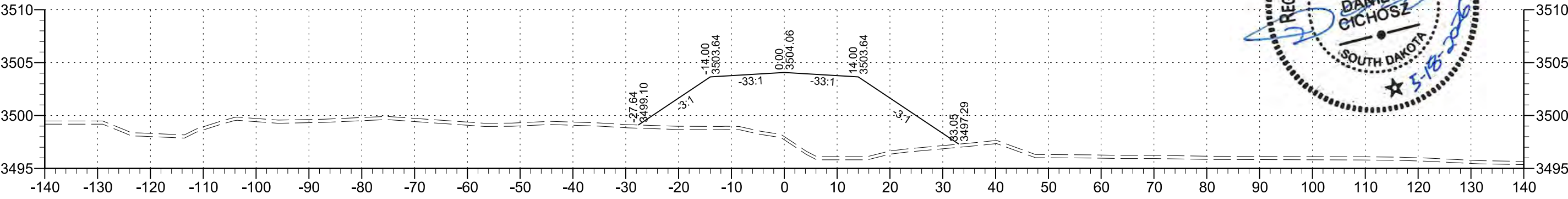
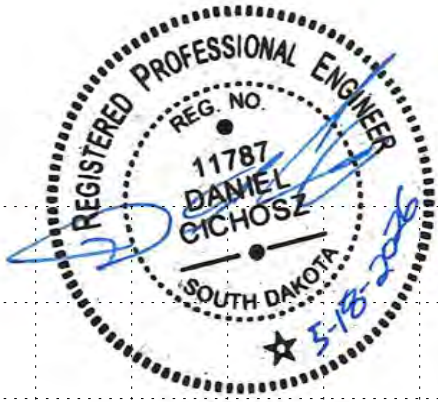
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	49	53



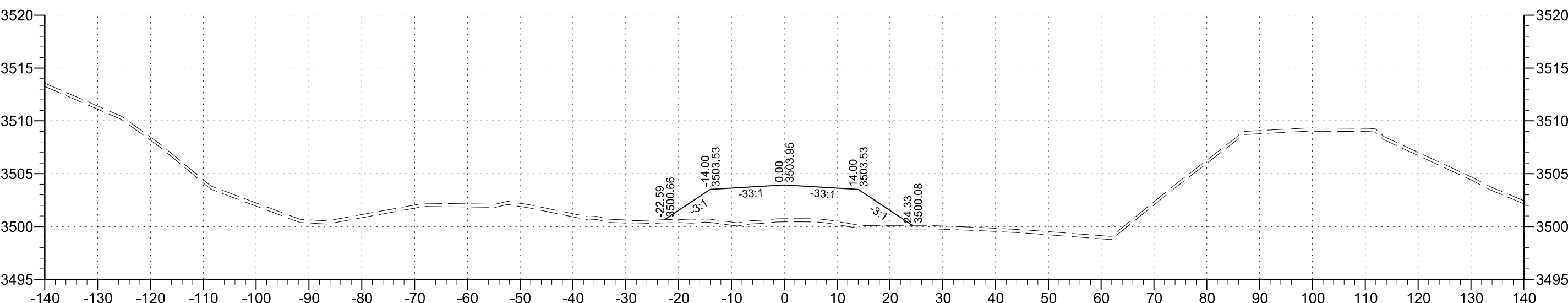
TRAFFIC DIVERSION CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

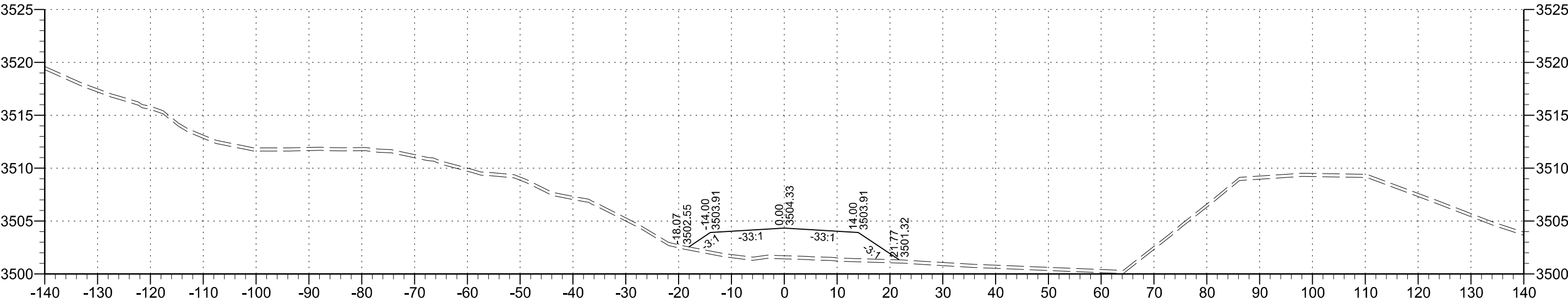
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	50	53



105+00



104+50

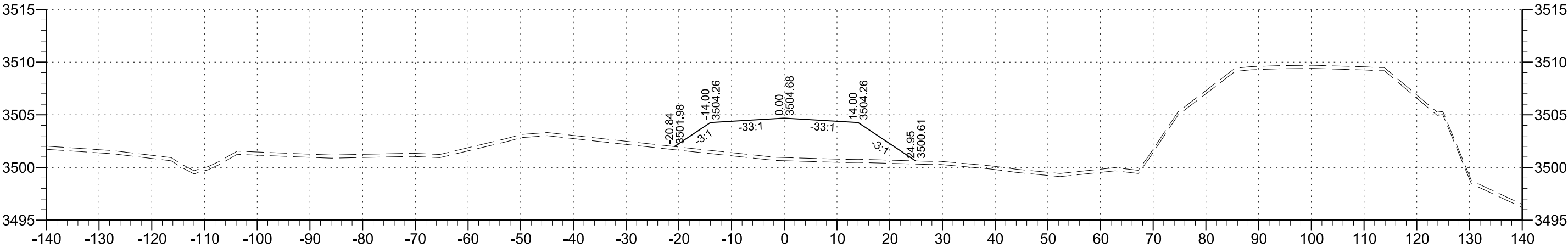
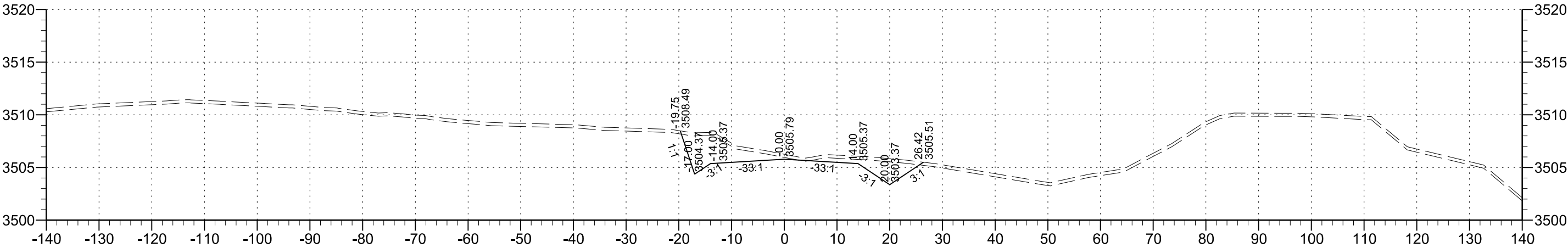
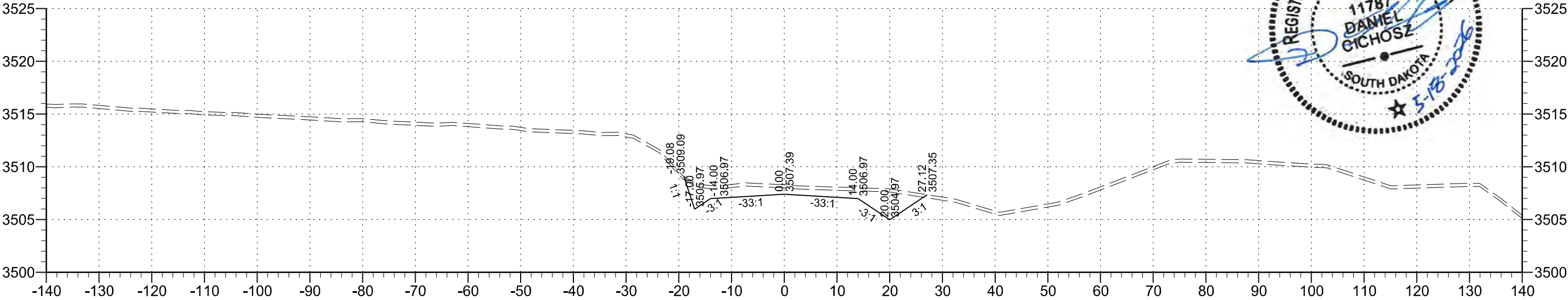


104+00

TRAFFIC DIVERSION CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

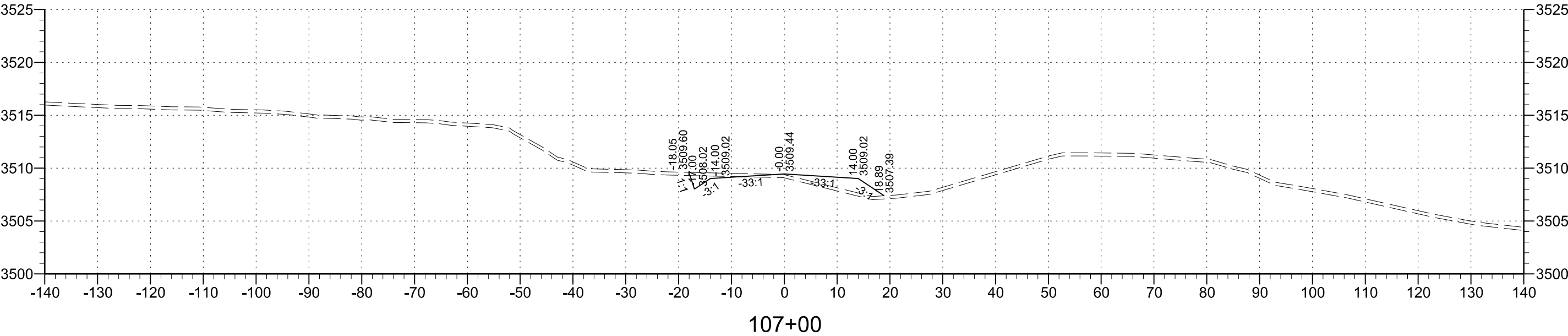
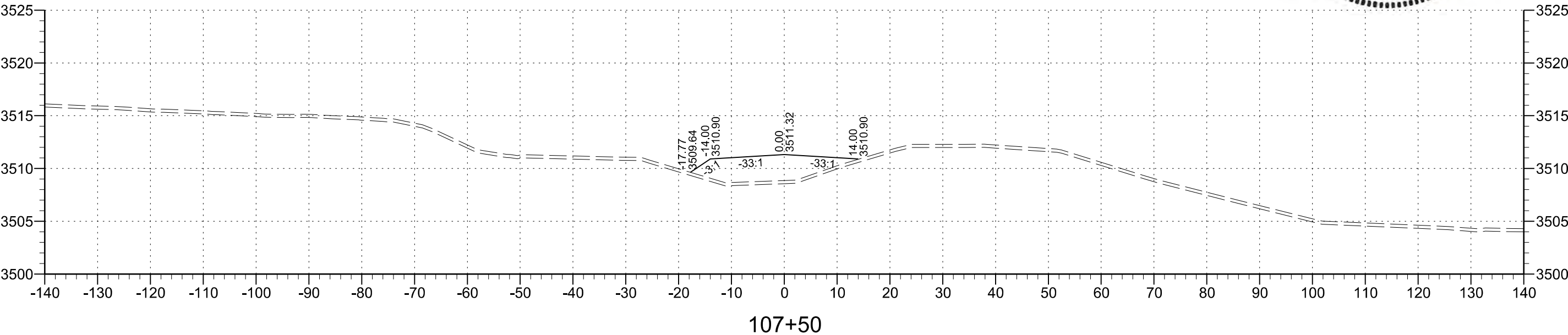
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	51	53



TRAFFIC DIVERSION CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545(04)	52	53



TRAFFIC DIVERSION CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF-B 6545 (04)	53	53

