

PROJECT LOCATION

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT BRO-B 8049(25)
MINER COUNTY

STRUCTURE REPLACEMENT AND APPROACH GRADING
STRUCTURE No. 49-063-018
PCN 09AN

FOR BIDDING PURPOSES ONLY

PROJECT	SHEET NO.	TOTAL SHEETS
BRO-B 8049(25)	1	45

REVISED 7/8/2025

INDEX OF SHEETS

- SHEET 1: TITLE SHEET
SHEET 2-7: ESTIMATE OF QUANTITIES & NOTES
SHEET 8-11: SWPPP
SHEET 12-13: TYPICAL SECTION
SHEET 14-16: TRAFFIC CONTROL
SHEET 17-20: EROSION CONTROL
SHEET 21: SURVEY DATA & EASEMENTS
SHEET 22-25: PLAN & PROFILE
SHEET 26-27: STANDARD PLATES
SHEET 28-37: STRUCTURE SHEETS
SHEET 38-45: CROSS SECTIONS

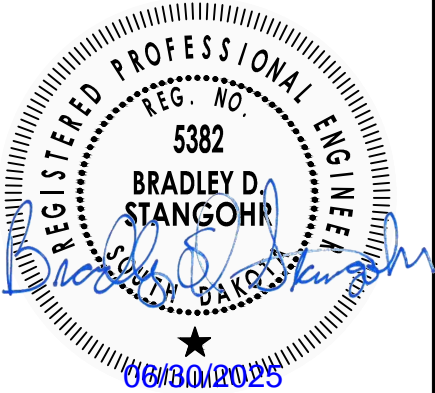
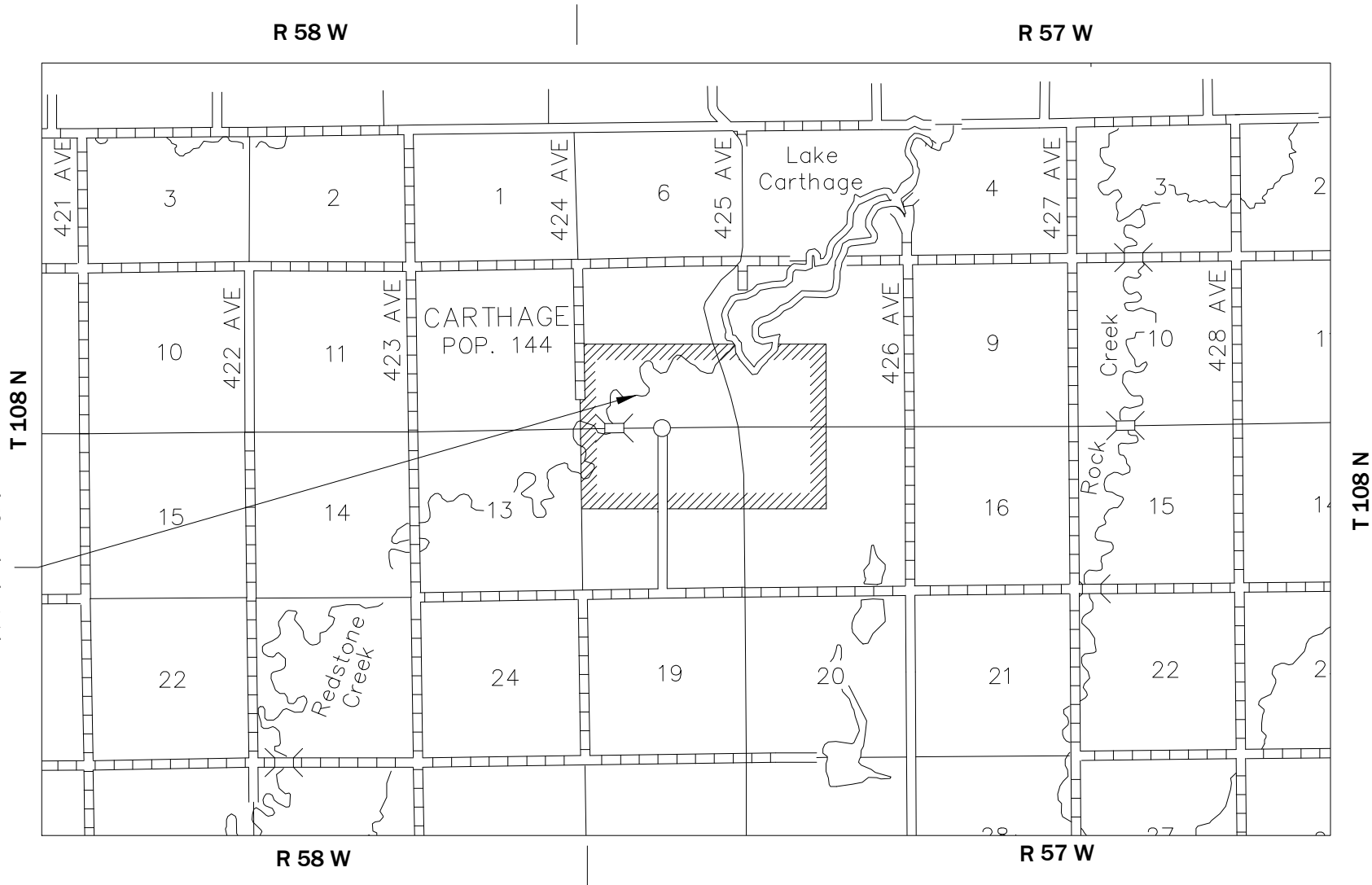
DESIGN DESIGNATION

ADT (2020): 30
ADT (2040): 49
DHV: 7
d: 50%
T DHV: 1.4%
T ADT: 3.1%
DESIGN SPEED 15 MPH

STORM WATER PERMIT

MAJOR STREAM: REDSTONE CREEK
AREA DISTURBED: 0.62 ACRES
PROJECT AREA: 1.41 ACRES

STRUCTURE NO.
49-063-018
PROJECT LOCATED AT
ENTRANCE OF
CARTHAGE CITY PARK
LOCATED ON WEST MAIN STREET



5701 S Corporate Place, Suite 1
Sioux Falls, South Dakota 57108
Phone: 605.323.2306
Fax: 605.323.2308
Web: www.Ulteig.com

3

September 3, 2025

REVISED 8/1/2025

GRADING

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.350	Mile
009E3250	Miscellaneous Staking	0.350	Mile
009E3280	Slope Staking	0.350	Mile
009E3290	Structure Staking	1	Each
009E3301	Engineer Directed Surveying/Staking	20.0	Hour
100E0020	Clear and Grub Tree	15	Each
100E0100	Clearing	Lump Sum	LS
110E5010	Salvage Delineator	1	Each
110E5020	Salvage Traffic Sign	6	Each
120E0010	Unclassified Excavation	1,636	CuYd
120E0600	Contractor Furnished Borrow	492	CuYd
230E0010	Placing Topsoil	359	CuYd
240E0010	Obliterate Old Road	2	Sta
634E0110	Traffic Control Signs	93.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	8	Each
730E0204	Type C Permanent Seed Mixture	12	Lb
731E0100	Fertilizing	930	Lb
732E0100	Mulching	1.0	Ton
734E0102	Type 2 Erosion Control Blanket	1,670	SqYd
734E0154	12" Diameter Erosion Control Wattle	451	Ft
734E0604	High Flow Silt Fence	738	Ft
734E0610	Mucking Silt Fence	43	CuYd
734E0620	Repair Silt Fence	155	Ft
734E0900	Temporary Diversion Channel for Fish Passage	1	Each

STRUCTURE No. 49-063-018

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0200	Structure Excavation, Box Culvert	80	CuYd
421E0200	Box Culvert Undercut	200	CuYd
460E0120	Class A45 Concrete, Box Culvert	160.2	CuYd
480E0100	Reinforcing Steel	22,660	Lb
700E0210	Class B Riprap	56.0	Ton
831E0110	Type B Drainage Fabric	72	SqYd

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

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/media/documents/EnvironmentalProceduresManual.pdf> >

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 0.139 acres of stream (includes temporary and permanent) becoming impacted.

Table of Impacted Streams

Stream Name	Station	Perm. Impact (Acres)	Temp. Impact (Acres)	Total Impact (Acres)
Redstone Creek	20+50 – 21+25	0.056	0.083	0.139

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 complete excavation after temporary diversion is in place, if required, with minimal standing water to create the profile of slope protection specified in plans. Once the instream work is completed, the removed material will be placed on top of the riprap to match the natural ground, proposed groundline, or specified shape and elevations shown in plans. When overburden extends into the streambed it will form the channel bottom and profile as specified in plans. The finished ground under the bridge will be shaped to match the upstream and downstream channel and flood plain

The Contractor will notify the Project Engineer if additional easement is needed to complete work adjacent to any stream. The Project Engineer will obtain an appropriate course of action from the Environmental Office before

proceeding with construction activities that affect any streams beyond the work limits and easements shown in the plans.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B1: CONSTRUCTION PRACTICES FOR STREAMS INHABITED BY THE TOPEKA SHINER

The SDDOT Environmental Office has identified the following as Topeka Shiner streams.

Table of Topeka Shiner Streams

Station	Stream Name	Ordinary High-Water Elevation
21+00	Redstone Creek	1404.72

Action Taken/Required:

The Contractor will adhere to the “Special Provision for Construction Practices in Streams Inhabited by the Topeka Shiner”.

Stream turbidity will be monitored during all stages of the project. Turbidity measurements are to be taken in conjunction with normal storm water inspections but can also be taken at the Project Engineer’s discretion during construction activities that may result in increased turbidity (e.g., placing riprap or installing a coffer dam).

Prior to the pre-construction meeting the Contractor will produce and provide the SDDOT Environmental Office a comprehensive Construction Plan that includes all products, materials, and methods of installation and removal for temporary water barriers, cofferdams, and diversion channels including de-watering, handling, storage, and disposal of excavated material and pumped effluent throughout all phases of construction, including post-construction stabilization. Work will not proceed on any of the streams identified in the Table of Topeka Shiner Streams without approval of the Construction Plan by the SDDOT Environmental Office. Upon plan approval, the Construction Plan will be amended to the SWPPP.

COMMITMENT C: WATER SOURCE

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



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8049(25)	3	45

COMMITMENT C: WATER SOURCE (CONTINUED)

holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks. The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

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 (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

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

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

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

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

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

Action Taken/Required:

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

COMMITMENT D2: SURFACE WATER DISCHARGE

The DANR General Permit for Temporary Discharge 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 cold water permanent fish life propagation waters according to the ARSD 74:51:01:45. For discharges to waters of the state classified as cold water permanent fish life propagation waters, the effluent limit for total suspended solids will be 53 mg/L daily maximum.

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

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

Action Taken/Required:

If construction dewatering is required and this project is currently covered under a General Permit for Stormwater Discharges Associated with Construction Activities, the contractor will need to submit the dewatering information to the SDDANR using the following form:

<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_AddTemplInfoFillable.pdf>

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

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

COMMITMENT E: STORM WATER

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

Action Taken/Required:

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

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

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

The form can be found at:

<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPAappendixCCA2023Fillable.pdf>

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>

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.



COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

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

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

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

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

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

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

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

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

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

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

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

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

COMMITMENT 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.

Station	Section 4(f) Property
16 +00	Str. No. 49-063-018 – Structure located in City Park

Action Taken/Required:

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

Existing Structure 49-063-018 will not be removed until the completion of the new structure and connecting roadway. Access to the Carthage City Park must be maintained throughout the project.

The Contractor is not permitted to stage equipment or materials within Carthage City Park. 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.

SEQUENCE OF OPERATIONS

The Contractor will use the following sequence of operations:

1. Install temporary traffic control signs as shown on the plans.
2. Install erosion control procedures.
3. Undercut box culvert.
4. Construct new structure.
5. Construct City Park Roadway
6. Remove old bridge
7. Construct Main Street
8. Open the roadway to through traffic.
9. Permanent seeding.
10. Complete misc cleanup under traffic.

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the County's intent for traffic control and sequencing of the work.

An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

CITY OF CARTHAGE RESPONSIBILITIES

The City of Carthage will be responsible for the following at no cost to the Contractor:

1. Right of way temporary and permanent easements.
2. Coordination of any utility adjustments.
3. Remove and Reset Camp Ground Split Rail Fence.
4. Furnish and install final surfacing.
5. Furnish and install new permanent signing of structure. Remove silt fence and erosion control wattles in permanently seeded areas.



GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 20 MGal. No separate payment will be made for the Water for Embankment and all costs associated will be incidental to the contract unit price per cubic yard of “Unclassified Excavation”.

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 sections will be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

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

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

UTILITIES

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

Location	Utility	Owner	Phone Number
STA 14+16.26 to STA 18+30.12 LT	Underground Communications Line	Alliance Communications	(605) 594-3411
STA 14+08.77 to STA 18+75 LT	Underground Water Line	Kingbrook Rural Water	(605) 983-5074
STA 10+00 to STA 18+75 LT	Overhead Power Line	Xcel Energy	(605) 339-8325

SHRINKAGE FACTOR: Embankment plus 35%

EARTHWORK BALANCE:

Excavation	742	CuYd	Embankment	701	CuYd
Borrow Excavation	205	CuYd	35% Shrinkage	246	CuYd
Total	947			947	CuYd

Excavation is the quantity of Unclassified Excavation less the quantity of topsoil, excavation for RCBC installation, and gravel surfacing.

Other excavation includes the excavation for Class B Riprap (41 CuYd) and Box Culvert Undercut (200 CuYd).

These quantities are for informational purposes only, compensation for these is accounted for within the various bid items.

The Contractor may, at the discretion of the Engineer, use the material from other excavation in the inslopes and as sub-base with the condition that the material meets all requirements as set forth in the Specifications.

It is assumed (for the purpose of earthwork balance) that the Contractor will not be able to use any of the material from Other Excavation and will have to waste the material at (a) site(s) provided by the Contractor and approved by the Engineer. All cost for labor, materials, and equipment necessary to waste material as well as restoration of the waste site(s) will be incidental to the contract unit price per cubic yard of “Unclassified Excavation.”

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Excavation	742
Topsoil	359
Exc. for RCBC Installation	535
Total	1636

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

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

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

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

The Excavation quantities from individual balances and the Table of Unclassified Excavation have been reduced by the volume of in place surfacing that will be removed and/or salvaged. The plans quantity for “Unclassified Excavation” as shown in the Estimate of Quantites will be the basis of payment for this item.

SALVAGE DELINEATORS & TRAFFIC SIGNS

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

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

TABLE OF SALVAGE DELINEATORS AND SIGNS

Location	Work Item	Salvage Delineator	Salvage Sign
Sta 16+22.65 - 51’ Lt.	Salvage Weight Limit Sign		1
Sta 16+23.32 - 53’ Lt.	Salvage Type III Object Marker	1	
Sta 16+71.98 -17’ Rt.	Salvage Two Direction Large Arrow		1
Sta 16+78.84 - 34’ Lt.	Salvage Park Sign		1
Sta 16+86.87 - 17’ Lt.	Salvage Street Name Sign		1
Sta 15+61.73 - 17’ Rt	Salvage Speed Limit Sign (20 Mph)		1
Sta 15+61.76 - 17’ Rt	Salvage No Thru Trucks Sign		1
Total		1	6

CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor will provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material will be approved by the Engineer. The plans quantity for “Contractor Furnished Borrow Excavation” as shown in the Estimate of Quantities will be the basis of payment for this item.

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



EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT
INSTALLATION

Included in the quantity of "Unclassified Excavation" are 535 cubic yards of excavation for installation of reinforced concrete box culverts. All work necessary to excavate a trench for installation of reinforced concrete box culverts including labor, equipment, and incidentals will be incidental to the contract unit price per cubic yard for "Unclassified Excavation". Payment for excavation of reinforced concrete box culverts will be based only on plans quantity and measurement of these excavation quantities during construction will not be performed.

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

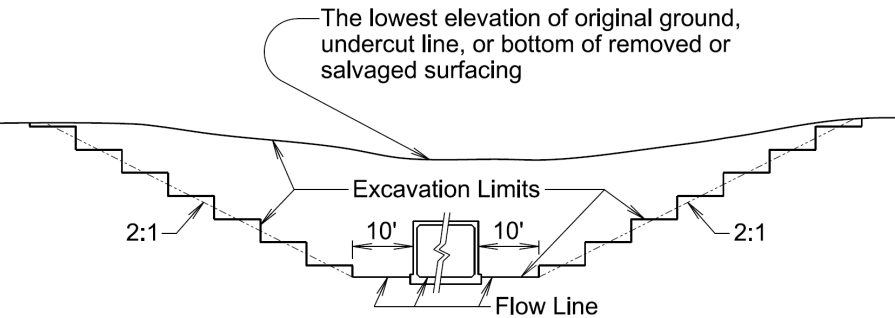


TABLE OF EXCAVATION FOR REINFORCED CONCRETE BOX
CULVERT INSTALLATION

Station	Quantity (CuYd)
20+96.73	535
Total	535

PLACING TOPSOIL

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

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

Station	to	Station	Topsoil (CuYd)
12+36.00		14+82.67	165
14+86.83		17+50.03	194
Total:			359

All costs associated with placing the topsoil along areas to be resurfaced will be incidental to the contract unit price per cubic yard for "Placing Topsoil". The plans quantity for "Placing Topsoil" as shown in the Estimate of Quantities will be the basis for payment for this item.

21 CuYd of topsoil are included for the obliterate road area.

CITY PARK ACCESS

Access to the City Park shall be maintained at all times. The project consists of two phases. Access to the park will be maintained over the existing bridge during construction of the new culvert. Upon completion of the new culvert and the adjacent portion of Main Street, public traffic will be switched to use the new park entrance over the newly installed culvert. The old bridge will then be removed and the approaches obliterated and the remainder of Main Street will be constructed.

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 bid item for "Type C 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 all-natural slow release fertilizer will be as shown below or an approved equal:

The all-natural slow release fertilizer will be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com
Nature Safe	Nature Safe Fertilizers Irving, TX Phone: 1-605-759-5622 www.naturesafe.com

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways.

Type C Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	16
Canada Wildrye	Mandan	2
Total:		18

MULCHING (GRASS HAY OR STRAW)

Grass Hay or Straw Mulch will be blown on and punched in at a rate of 2 tons per acre. The estimated area requiring mulch is 0.3 acres.

An additional 0.4 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.

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the mulch will be punched into the soil at a 3-inch depth.



TABLE OF MULCHING (GRASS HAY OR STRAW)

Station	Quantity (Ton)
15+70.16 to 16+50.08 L	0.6
Total:	0.6

TABLE OF EROSION CONTROL WATTLE

Station	Diameter (Inch)	Quantity (Ft)
13+80.17	12	115
13+89.34	12	78
15+37.41	12	58
15+52.61	12	100
Additional		100
Total:		451

HIGH FLOW SILT FENCE

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

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

High 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 734.05 for details.

An additional quantity of high flow silt fence has been added to the Estimate of Quantities for temporary sediment control.

TABLE OF HIGH FLOW SILT FENCE

Station	Quantity (Ft)
12+36.00 to 13+28.81	104
13+47.68 to 14+54.32	135
15+70.16 to 17+50.03	187
15+95.26 to 16+79.11	192
Miscellaneous	120
Total	738

TABLE OF EROSION CONTROL BLANKET

Station	Type	Quantity (SqYd)
12+36.00 to 14+82.67	2	1035
14+86.83 to 17+50.03	2	535
Additional Quantity:	2	100
Total Erosion Control Blanket:		1670

TABLE OF CONSTRUCTION STAKING

Roadway Description	and	Begin Station	End Station	Number of Lanes	Length (Ft)	Grade Staking				Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Structure Staking Quantity (Each)
						Length (Mile)	Lane Factor	*Sets of Stakes	**Grade Staking Quantity (Mile)			
Main Ave (2 Lanes Gravel)		12+00.00	17+50.00	2	550	0.15	1	1	0.15	0.15	0.15	0
Park Loop Road East (2 Lanes Gravel)		20+30.00	23+74.00	2	344	0.1	1	1	0.1	0.1	0.1	1
Park Loop Road North (2 Lanes Gravel)		30+71.00	32+22.00	2	151	0.1	1	1	0.1	0.1	0.1	0
Totals:									0.35	0.35	0.35	1

(See Special Provisions for Contractor Staking)

* 1 = Blue Top Stakes Only (Gravel Surfacing)

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

OBLITERATING OLD ROAD

The Contractor will obliterate the existing roadway at the locations listed in the Table of Obliterating Old Road.

The Contractor will obliterate the existing roadway in accordance with Section 240 of the Specifications when the existing roadway is not being removed in accordance with the template section.

The earthwork necessary for obliterating the existing road will be accomplished to such an extent that placing topsoil and seedling can be done in a satisfactory manner. Quantities of topsoil, fertilizing, mulching, and seeding for the obliterated section of the old road are included in the Plans Estimate of Quantities.

Station	to	Station	Length (Sta)
Main St – 16+30-12' LT		Park Access East – 22+40-10' RT	2.0
Total:			2.0



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** 1.41 Acres
- **5.3 (3b): Total Area to be Disturbed** 0.66 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 0.66 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** 90%
- **5.3 (3d): Description of Vegetative Cover:**
Native grasses and crop lands
- **5.3 (3e): Soil Properties:** USDA-NRCS Soil Series Classification
Bon loams (Bo), Dudley-Jerauld silt loams (Do), Ethan-Clarno loams (EgC), Stickney-Dudley silt loams (Sd)
- **5.3 (3f): Name of Receiving Water Body/Bodies**
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install stabilized construction entrance(s).	
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Install channel and ditch bottom protection.	
Clearing and grubbing.	
Remove and stockpile topsoil.	
Stabilize disturbed areas.	
Install inlet and culvert protection after completing storm drainage and other utility installations.	
Final grading.	
Removal of protection devices.	
Reseed areas disturbed by removal activities.	

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

Perimeter Controls (See Detail Plan Sheets)	
Description	Estimated Start Date
<input checked="" type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

Structural Erosion and Sediment Controls	
Description	Estimated Start Date
<input checked="" type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input checked="" type="checkbox"/> Riprap	
<input type="checkbox"/> Concrete Washout Facility	

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

Dust Controls	
Description	Estimated Start Date
<input type="checkbox"/> Watering	
<input type="checkbox"/> Stockpile location/orientation	

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

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

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 Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

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

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

- **Material Management**
 - Housekeeping
 - Only needed products will be stored on-site by the Contractor.
 - Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
 - Products must be stored in original containers and labeled.
 - Material mixing will be conducted in accordance with the manufacturer’s recommendations.
 - When possible, all products will be completely used before properly disposing of the container off-site.
 - The manufacturer’s directions for disposal of materials and containers will be followed.
 - The Contractor’s site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
 - Dust generated will be controlled in an environmentally safe manner.
 - Hazardous Materials
 - Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
 - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
 - If surplus product must be disposed of, manufacturer’s label directions for disposal will be followed.
 - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
 - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
 - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.
- **Spill Control Practices**

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

 - For all hazardous materials stored on site, the manufacturer’s recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
 - Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand,

- sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor’s site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

- **Spill Response**

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

 - The Contractor’s site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
 - If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
 - Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
 - If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
 - If a spill occurs the superintendent or the superintendent’s designee will be responsible for completing the spill reporting form and for reporting the spill to SDDANR.
 - Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor’s site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
 - Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

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

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:

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8049(25)	10	45

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 Project Engineer. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.
- Paints**
All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.
- Concrete Trucks**
Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

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

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

5.3 (11): INFEASIBILITY DOCUMENTATION

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

7.0: SPILL NOTIFICATION

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

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDANR immediately **if any one of the following** conditions exists:
 - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
 - The release or spill causes an immediate danger to human health or safety
 - The release or spill exceeds 25 gallons
 - The release or spill causes a sheen on surface water
 - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01

- The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
- The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
- The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.

- To report a release or spill, call SDDANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDANR within 14 days of the discharge

5.4: SWPPP CERTIFICATIONS

- **Certification of Compliance with Federal, State, and Local Regulations**

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

- **City of Carthage**

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO-B 8049(25)	11	45

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: _____



Project Engineer

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

SDDANR Contact Spill Reporting

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

SDDANR Contact for Hazardous Materials.

- (605) 773-3153

National Response Center Hotline

- (800) 424-8802.

SDDANR Stormwater Contact Information

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

5.5: REQUIRED SWPPP MODIFICATIONS

5.5 (1): Conditions Requiring SWPPP Modification

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

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

5.5 (2): Deadlines for SWPPP Modification

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

5.5 (3): Documentation of Modifications to the Plan

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

5.5 (4): Certification Requirements

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

5.5 (5): Required Notice to Other Operators

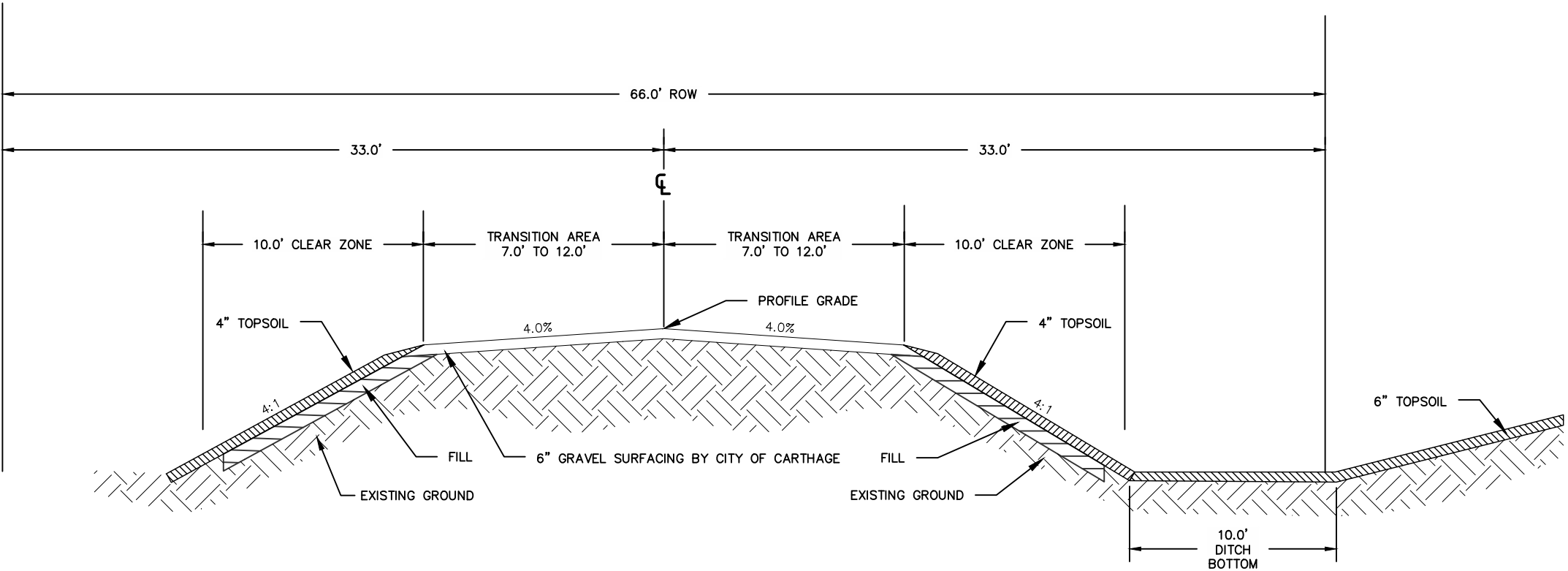
If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The 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.

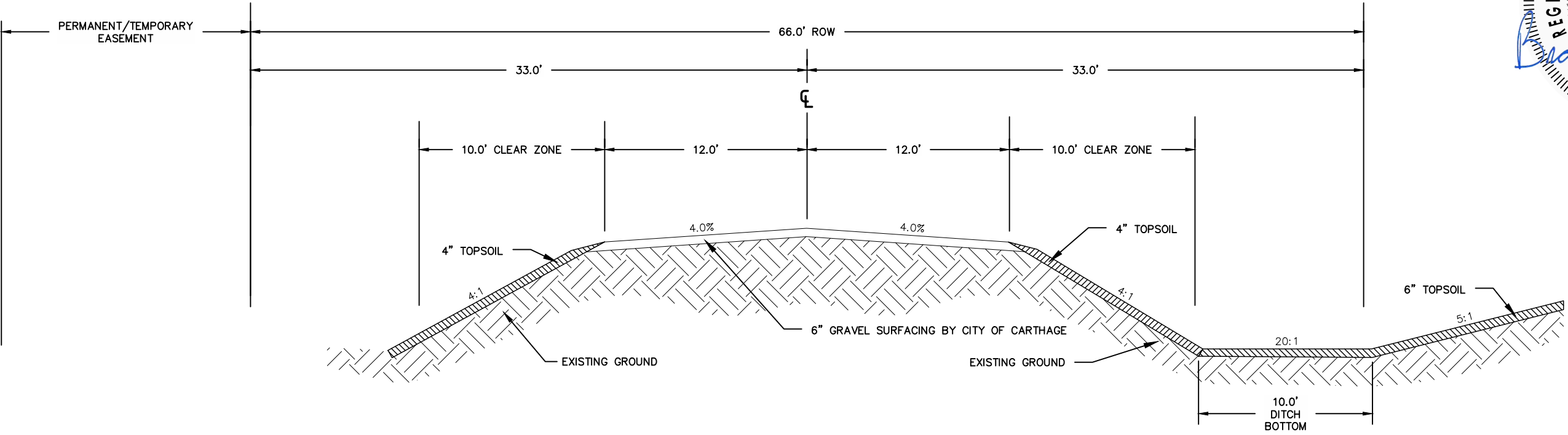
MAIN STREET TYPICAL SECTIONS

FOR BIDDING PURPOSES ONLY

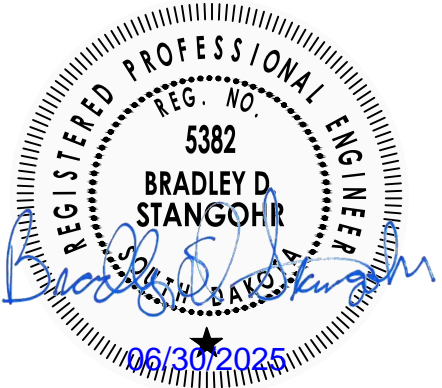
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	12	45



TYPICAL GRADING SECTION
STA 12+00.00 to STA 12+50.00 AND
STA 17+00.00 TO STA 17+50.00



TYPICAL GRADING SECTION
STA 12+50.00 to STA 17+00.00



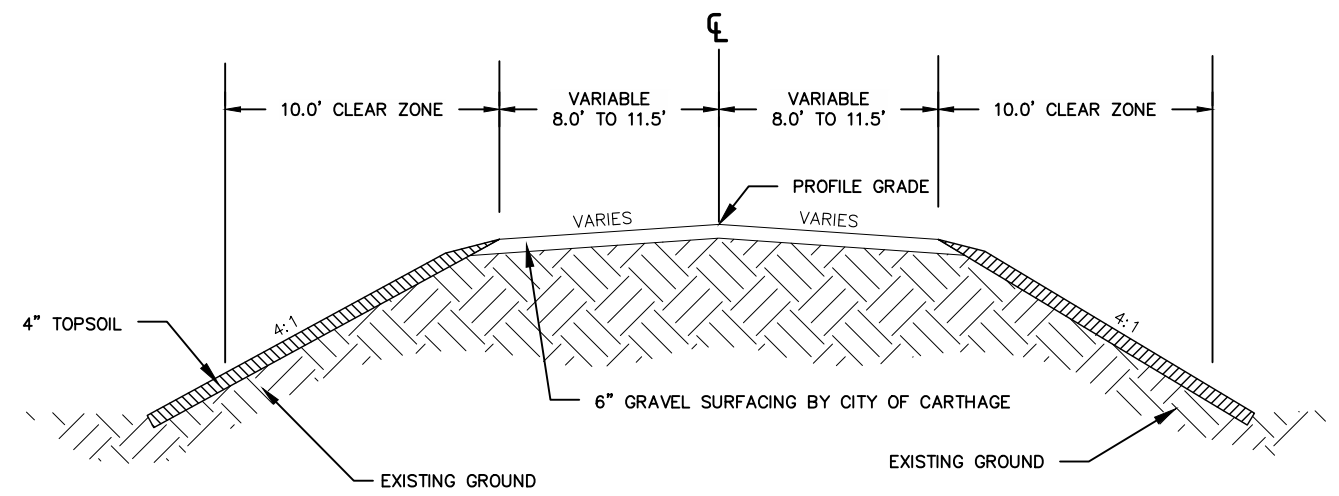
Ulteig

We listen. We solve.®

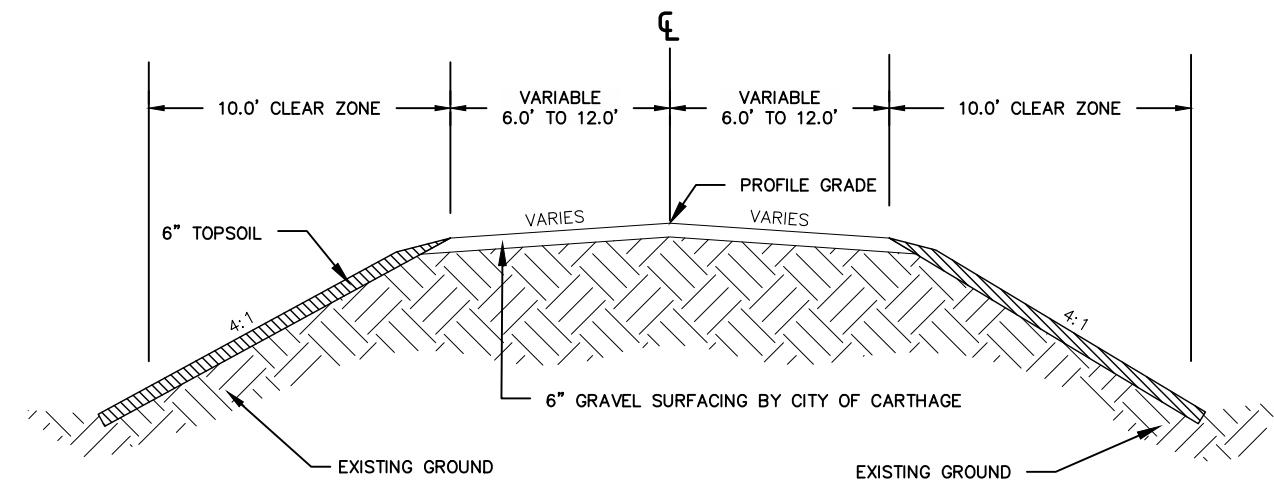
PARK LOOP ROAD TYPICAL SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	13	45

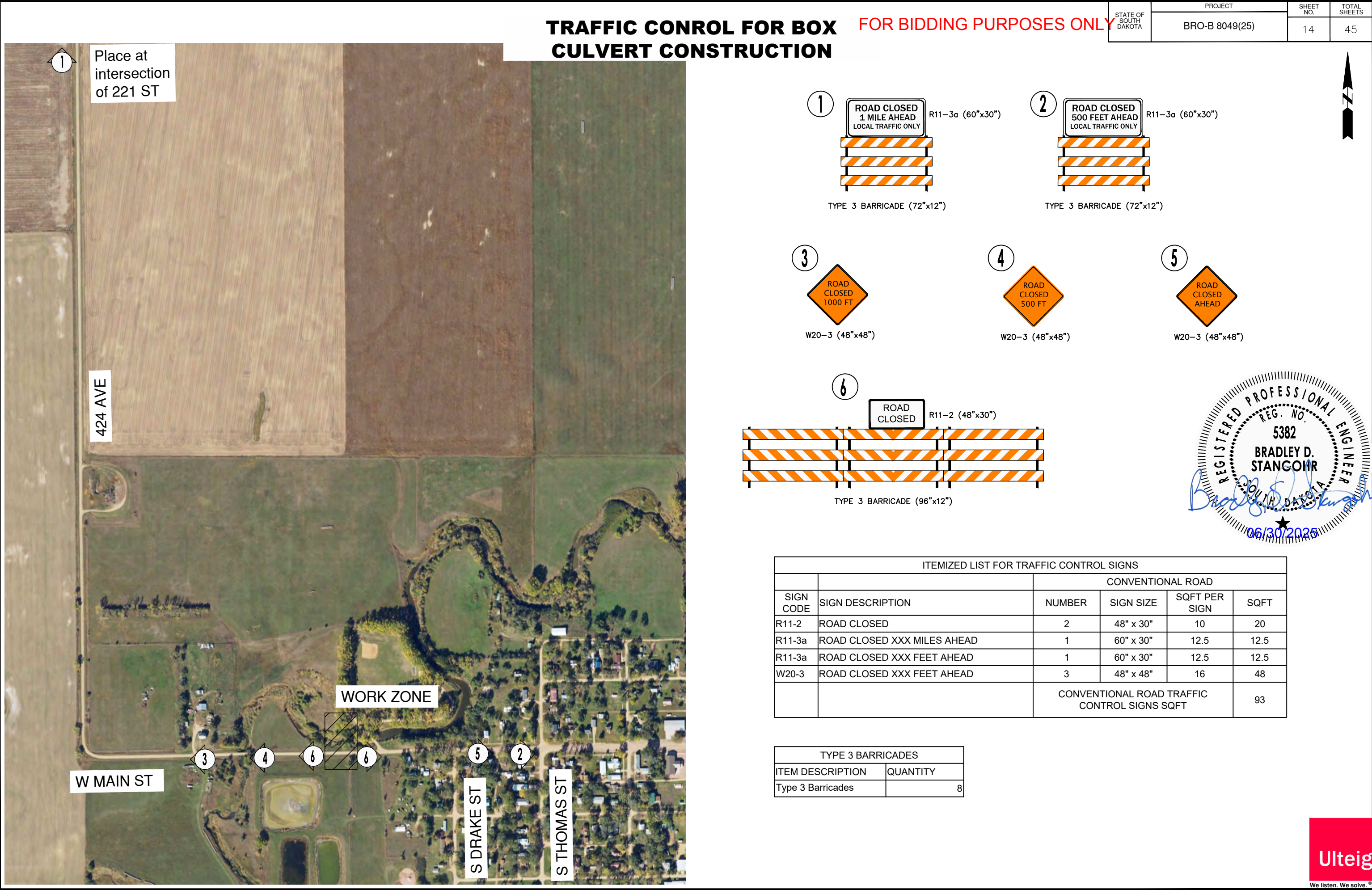


TYPICAL GRADING SECTION
STA 30+71.60 to STA 32+00.00



TYPICAL GRADING SECTION
STA 20+43.00 to STA 23+73.93

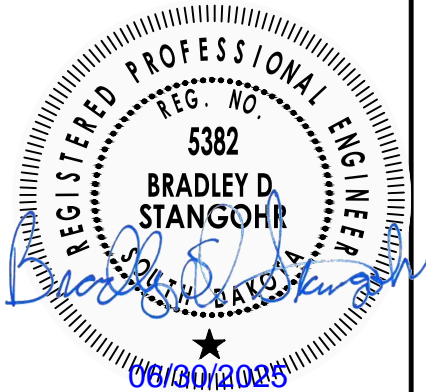
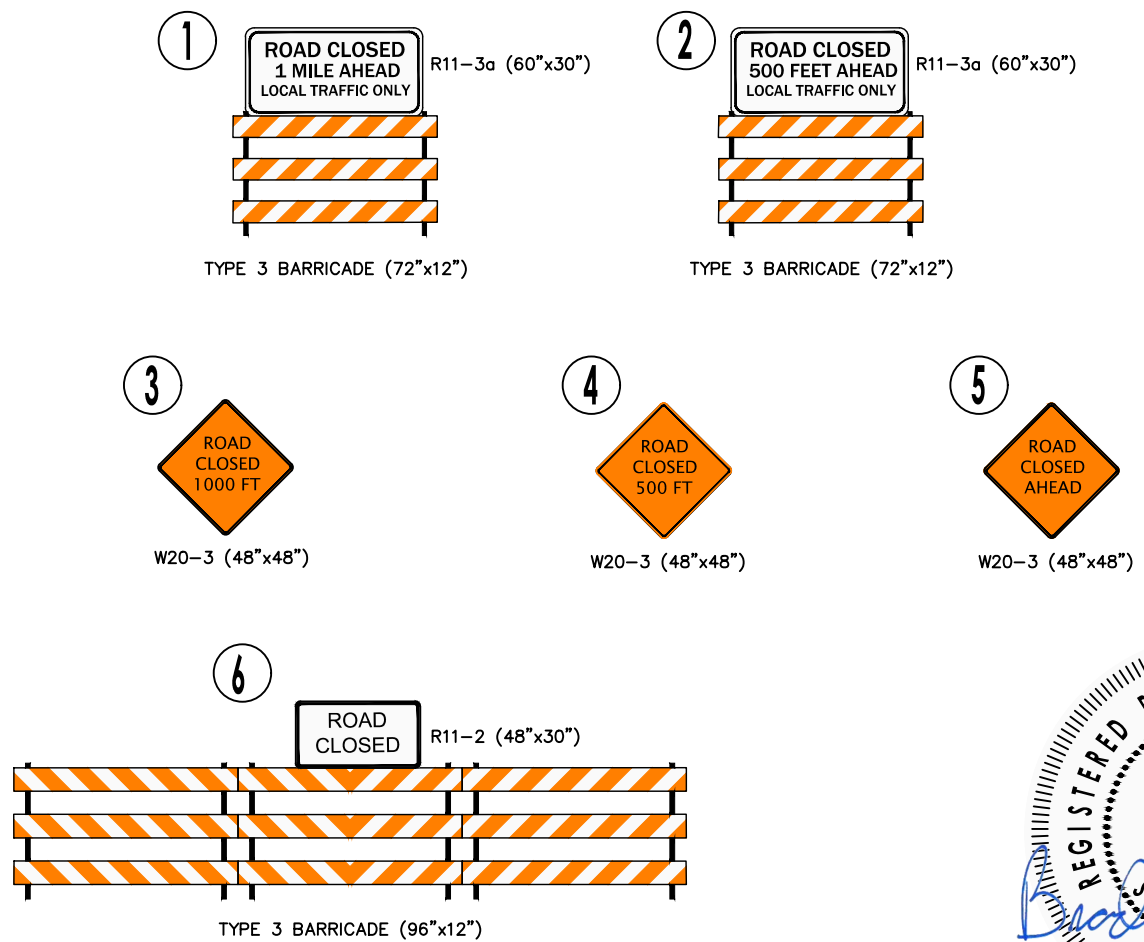




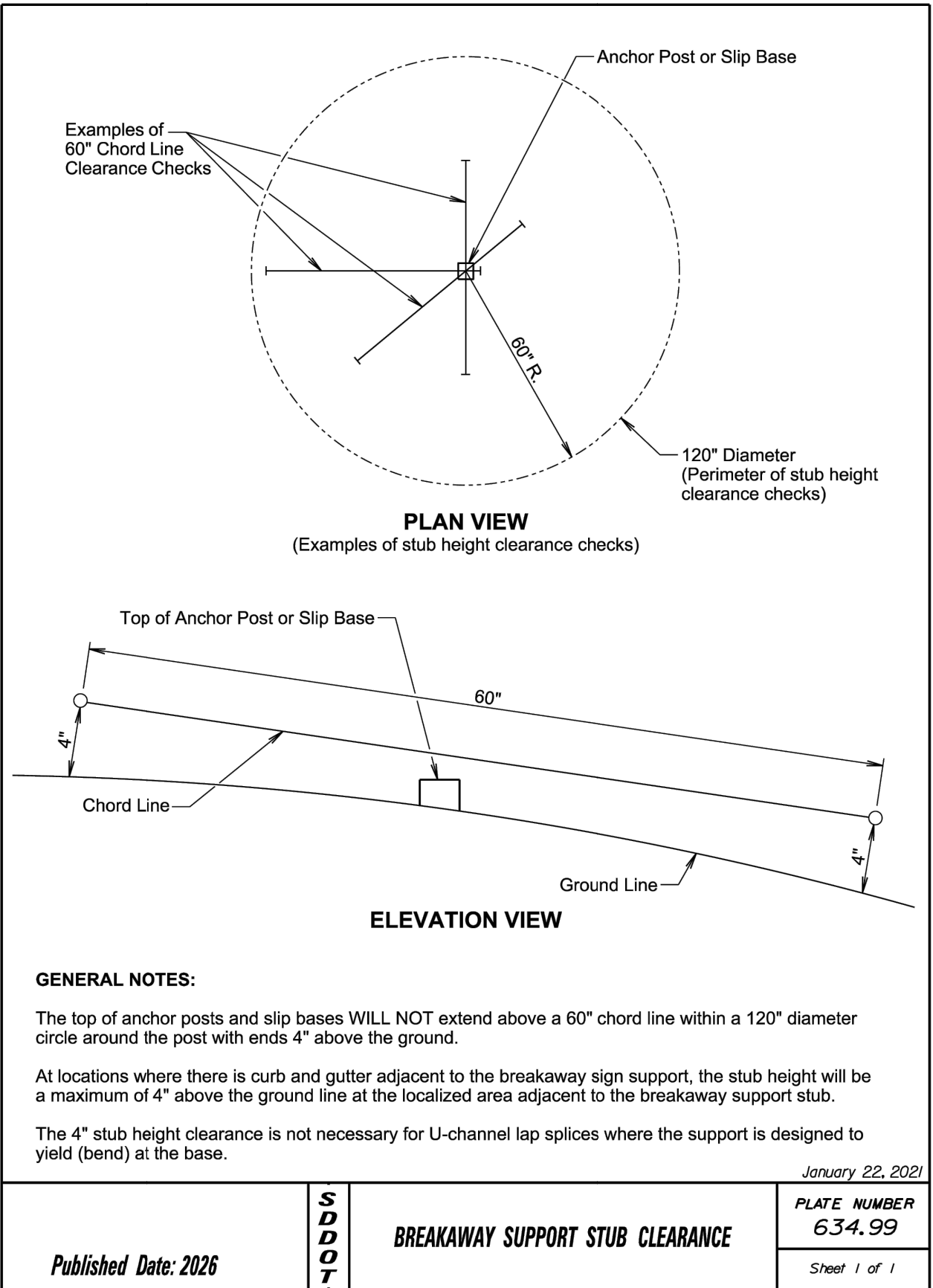
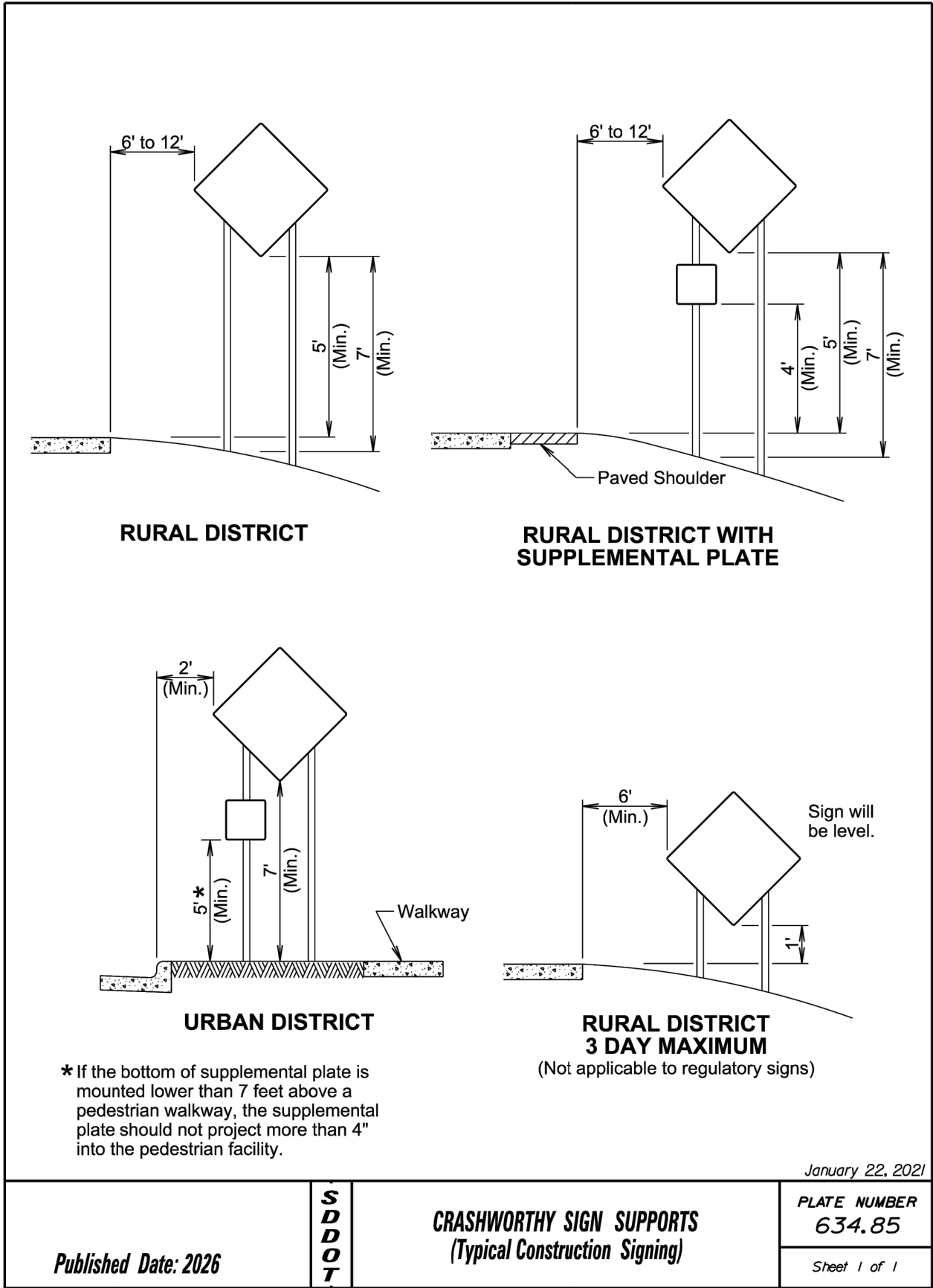
TRAFFIC CONTROL FOR MAIN STREET GRADING

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	15	45










STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	16	45

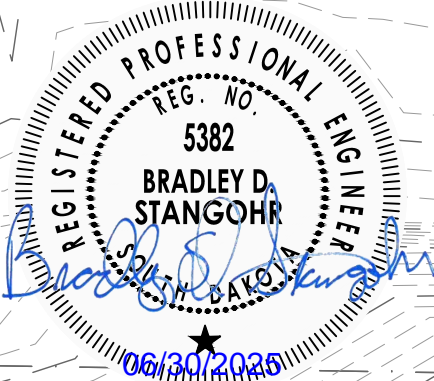
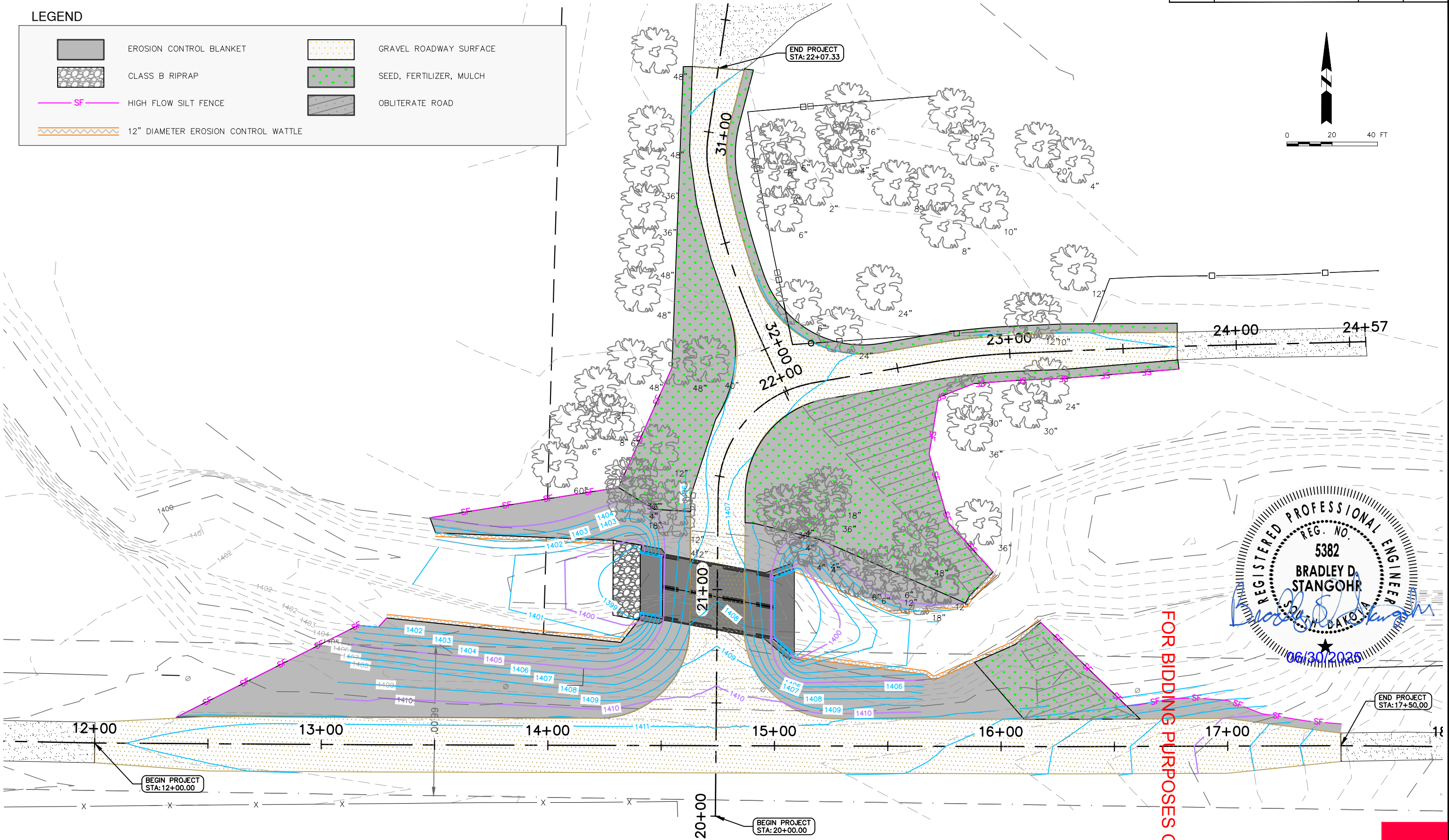
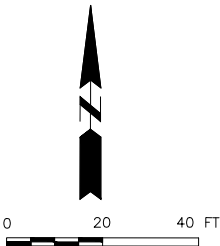


EROSION CONTROL

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	17	45

LEGEND

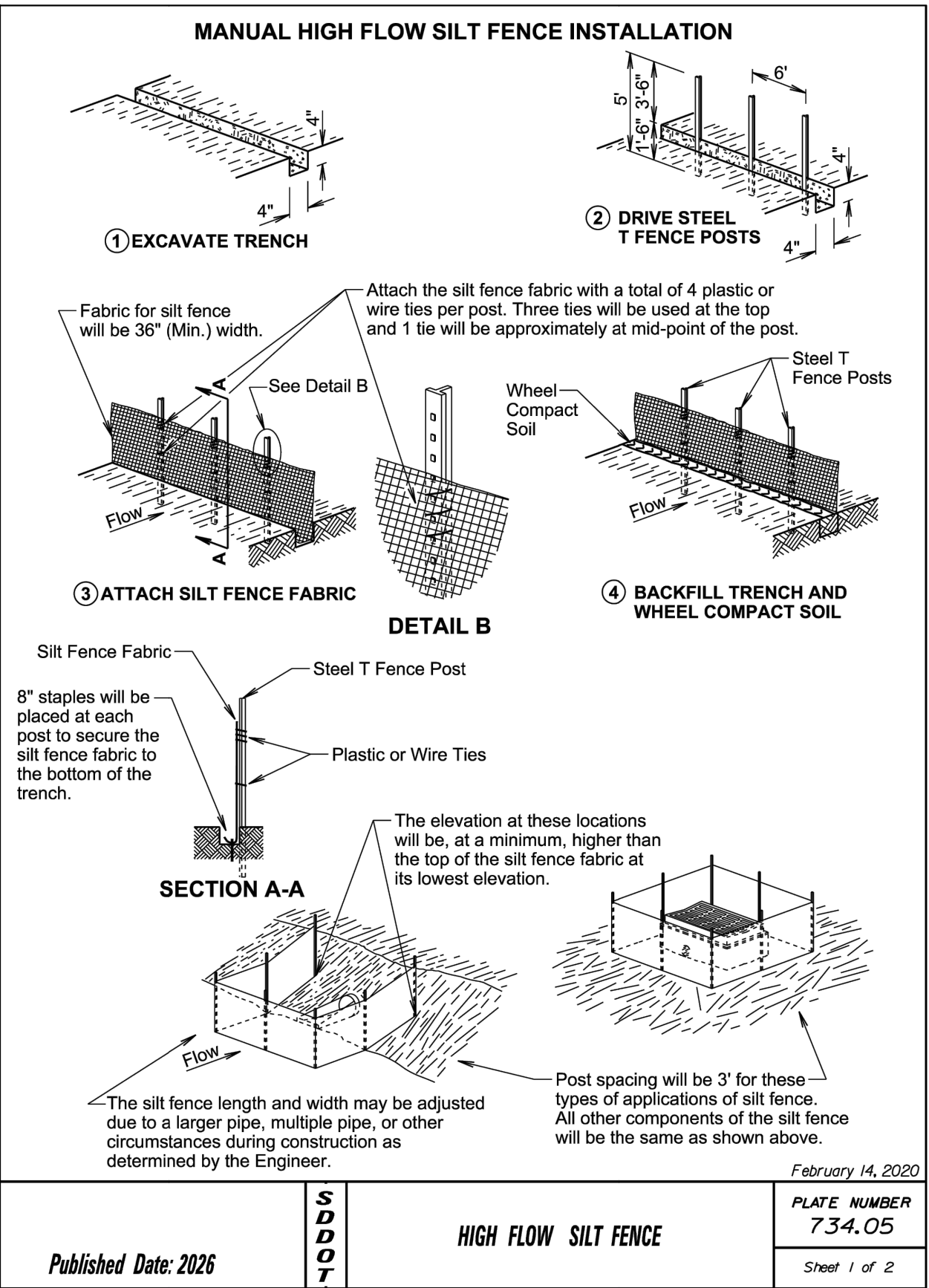
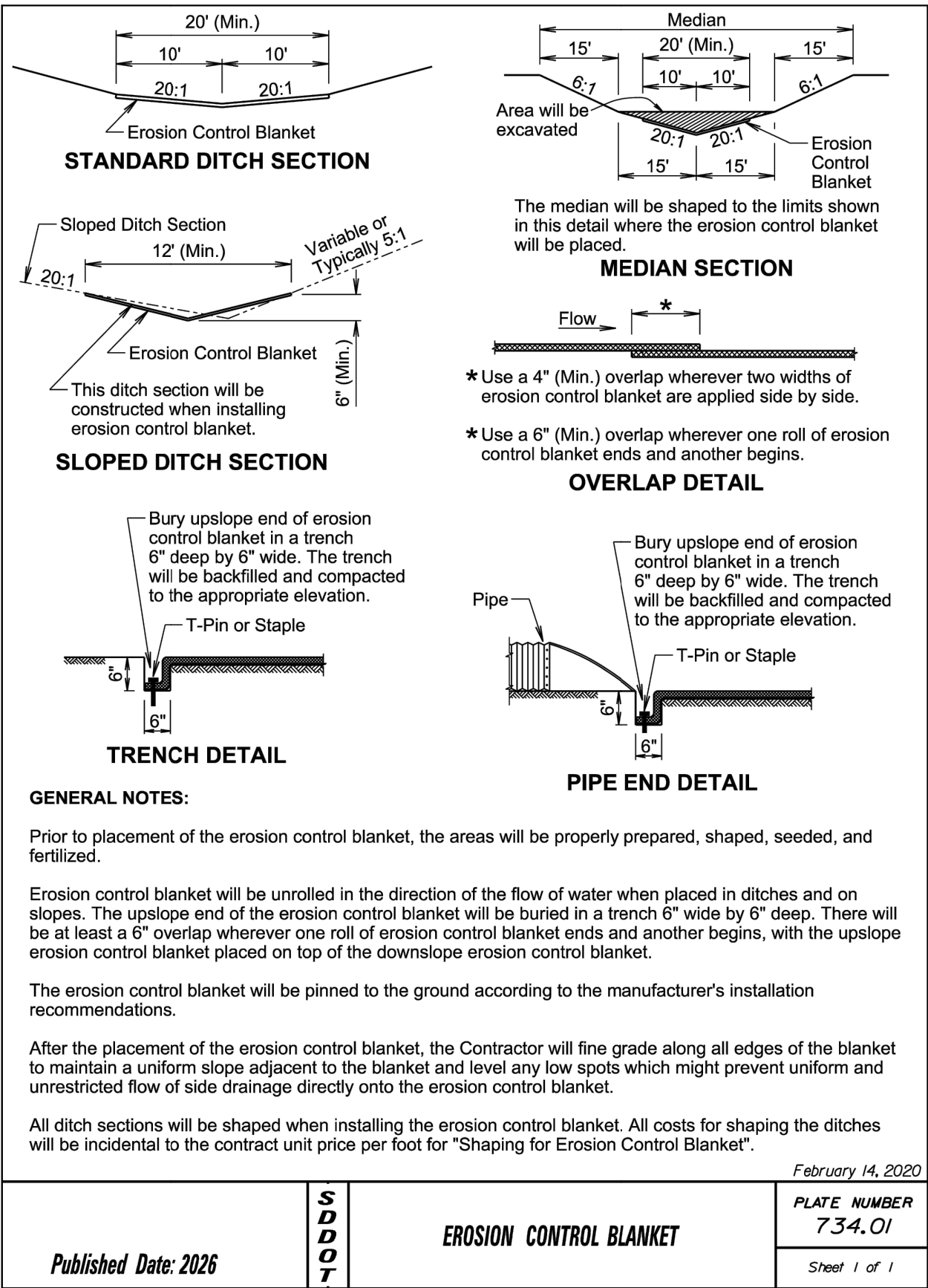
	EROSION CONTROL BLANKET		GRAVEL ROADWAY SURFACE
	CLASS B RIPRAP		SEED, FERTILIZER, MULCH
	HIGH FLOW SILT FENCE		OBLITERATE ROAD
	12" DIAMETER EROSION CONTROL WATTLE		



FOR BIDDING PURPOSES ONLY



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	18	45



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	19	45

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

1 INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

2 WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

Attach the silt fence fabric with a total of 4 plastic or wire ties per post. Three ties will be used at the top and 1 tie will be approximately at mid-point of the post.

Fabric for silt fence will be 36" (Min.) width.

See Detail B

Wheel Compacted Areas

Flow

3 ATTACH SILT FENCE FABRIC

DETAIL B

SECTION A-A

The elevation at these locations will be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.

The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

GENERAL NOTE:

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: 2026	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2

ELEVATION VIEW
(Cut or Fill Slope Installation)

DETAIL B
(Typical of All Installations)

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

Ends of Erosion Control Wattles

Wood Stake

DETAIL C
(See General Notes)

Point A

Point B

Flow

ISOMETRIC VIEW
(Ditch Installation)

Point A

Point B

Flow

PLAN VIEW
(Ditch Installation)

Wood Stake (Typ.)

Point A

Point B

Flow

SECTION A-A

Wood Stake

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

February 14, 2020

Published Date: 2026	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

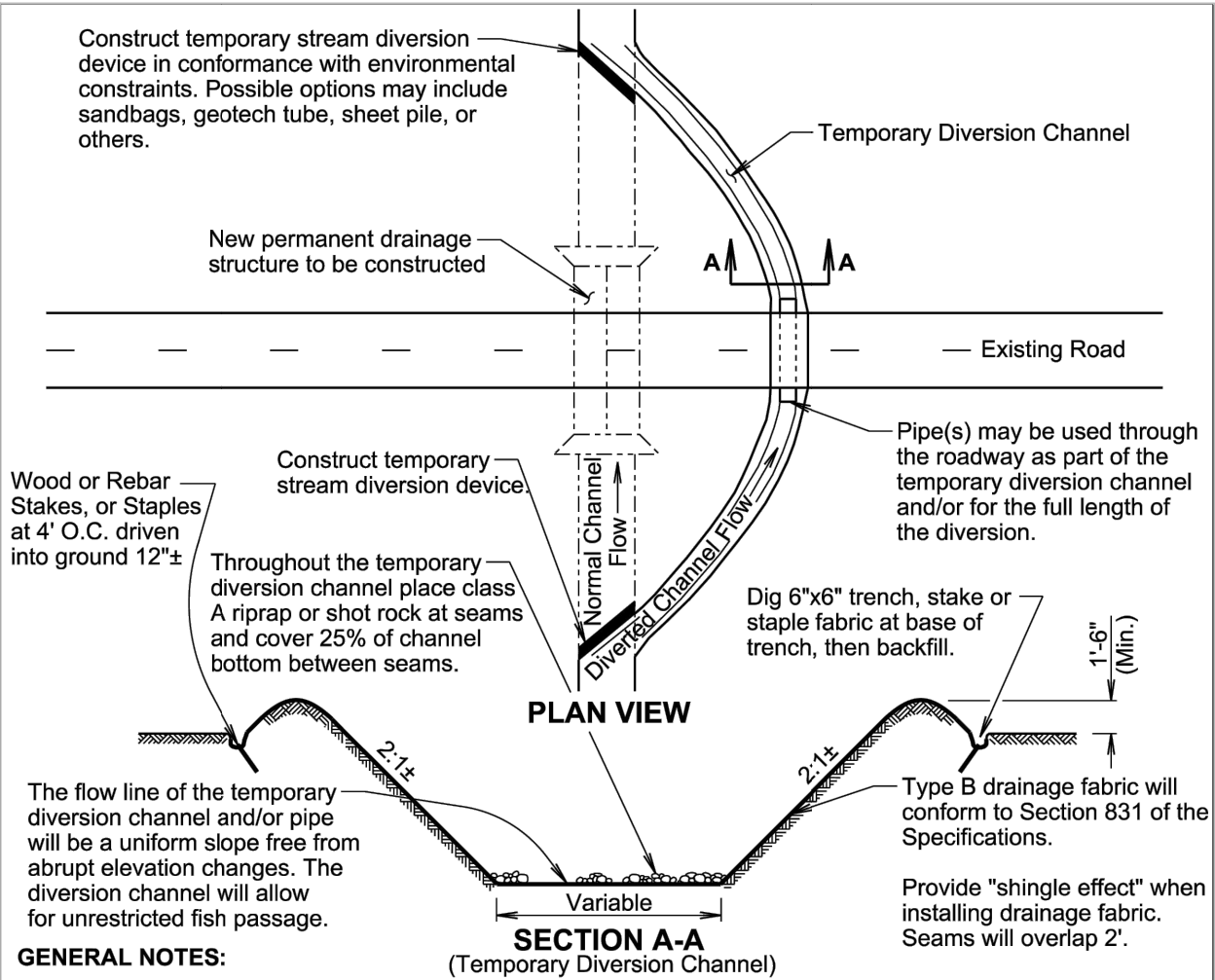
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	20	45

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".

February 14, 2020

Published Date: 2026	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER
			734.06
			Sheet 2 of 2



GENERAL NOTES:

- A temporary diversion channel and/or pipe(s) will be used to divert stream or drainage away from a construction area to provide a dry work area for construction. The diversion of streams and waterways is intended to protect the streams and waterways from various construction contaminants and sediment. Disturbing the existing stream channel and riparian zone should be minimized. Equipment will not cross through the stream outside of the work area.
- Sizing of the temporary diversion channel and/or pipe(s) will be the Contractor's responsibility.
- The method and materials used to construct the stream diversion device will be the Contractor's responsibility, however, earthen berms are not acceptable since their removal causes siltation problems.
- The Contractor will restore the original channel bottom to its original condition prior to returning any flows. Upon completion of the new permanent drainage structure, the temporary stream diversion block or device will be removed in a manner that will not cause violation of water quality standards. The temporary diversion channel will then be backfilled and any pipe(s) (if used) will be removed. The entire work area will be cleaned and restored to smooth/even contours.
- All costs for labor, equipment, materials, and incidentals as indicated on this sheet to complete a satisfactory temporary diversion channel and/or pipe(s) will be incidental to the contract unit price per each for "Temporary Diversion Channel For Fish Passage". "Temporary Diversion Channel For Fish Passage" will be paid for once per structure site regardless of the number of times water is diverted at the individual site.

February 14, 2020

Published Date: 2026	S D D O T	TEMPORARY DIVERSION CHANNEL FOR FISH PASSAGE	PLATE NUMBER
			734.30
			Sheet 1 of 1



SURVEY DATA & EASEMENTS FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	21	45

Permanent and Temporary Easements			
#	Station	Offset	Side
1	12+92.25	44.24'	LT
2	12+95.62	126.18'	LT
3	13+99.94	123.48'	LT
4	13+97.78	43.02'	LT

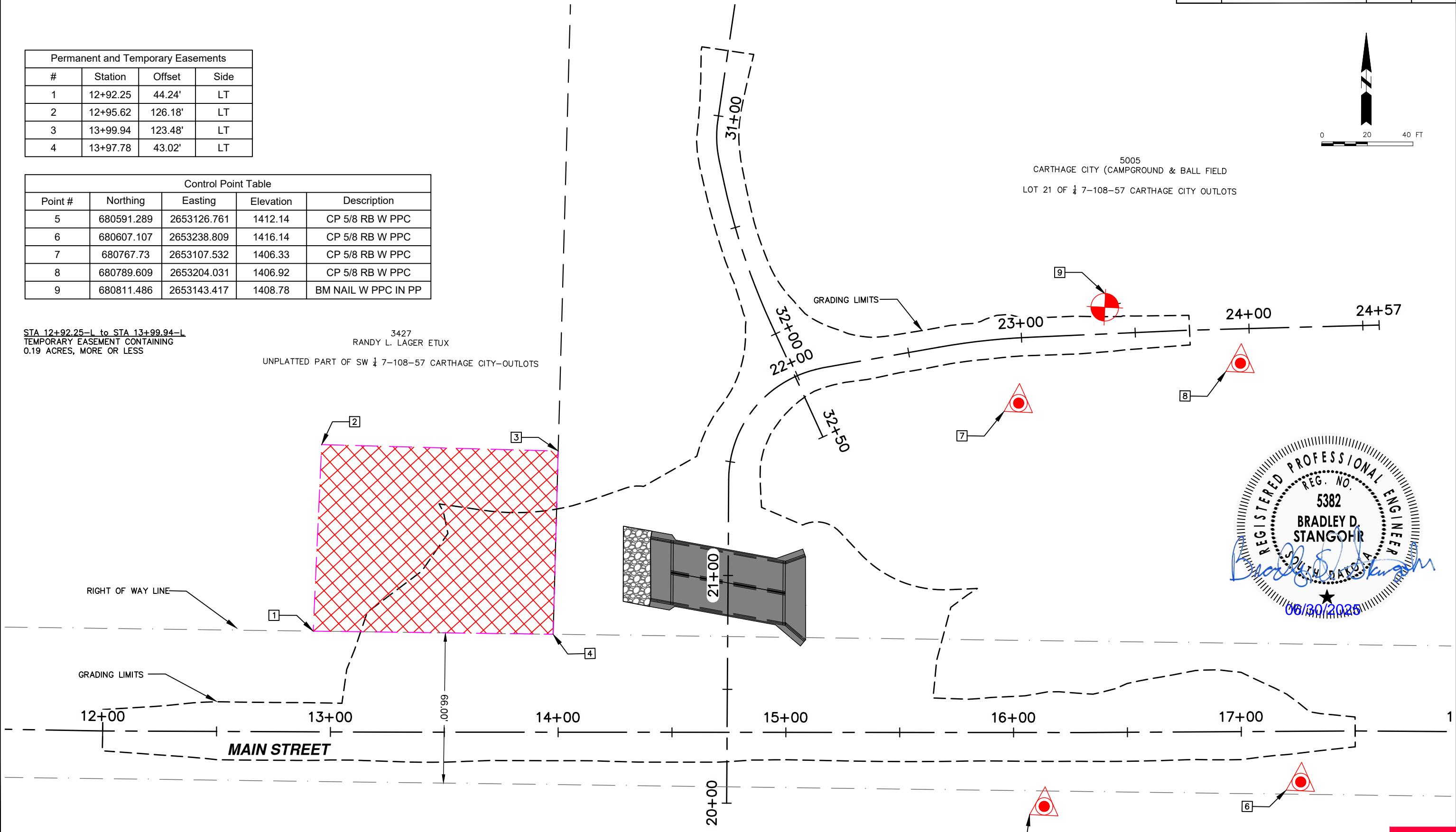
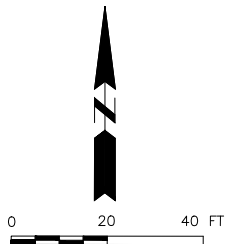
Control Point Table				
Point #	Northing	Easting	Elevation	Description
5	680591.289	2653126.761	1412.14	CP 5/8 RB W PPC
6	680607.107	2653238.809	1416.14	CP 5/8 RB W PPC
7	680767.73	2653107.532	1406.33	CP 5/8 RB W PPC
8	680789.609	2653204.031	1406.92	CP 5/8 RB W PPC
9	680811.486	2653143.417	1408.78	BM NAIL W PPC IN PP

STA 12+92.25--L to STA 13+99.94--L
TEMPORARY EASEMENT CONTAINING
0.19 ACRES, MORE OR LESS

3427
RANDY L. LAGER ETUX

UNPLATTED PART OF SW 1/4 7-108-57 CARTHAGE CITY-OUTLOTS

5005
CARTHAGE CITY (CAMPGROUND & BALL FIELD)
LOT 21 OF 1/4 7-108-57 CARTHAGE CITY OUTLOTS



LEGEND			
	PERMANENT DRAINAGE EASEMENT		TEMPORARY CONSTRUCTION EASEMENT



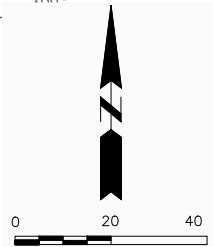
- TABLE OF SALVAGED DELINEATORS & TRAFFIC SIGNS
- SALVAGE WEIGHT LIMIT SIGN
STA: 16+22.65 - 51' LT
 - SALVAGE TYPE III OBJECT MARKER
STA: 16+23.32 - 53' LT
 - SALVAGE TWO DIRECTIONAL LARGE ARROW
STA: 16+71.98 - 17' RT
 - SALVAGE PARK SIGN
STA: 16+78.84 - 34' LT
 - SALVAGE STREET NAME SIGN
STA: 16+86.87 - 17' LT
 - SALVAGE SPEED LIMIT SIGN (20 MPH)
STA: 15+61.73 - 17' LT
 - SALVAGE NO THRU TRUCKS SIGN
STA: 15+61.73 - 17' LT

3427
RANDY L. LAGER
UNPLATTED PART OF SW 1/4 7-108-57
CARTHAGE CITY OUTLOTS

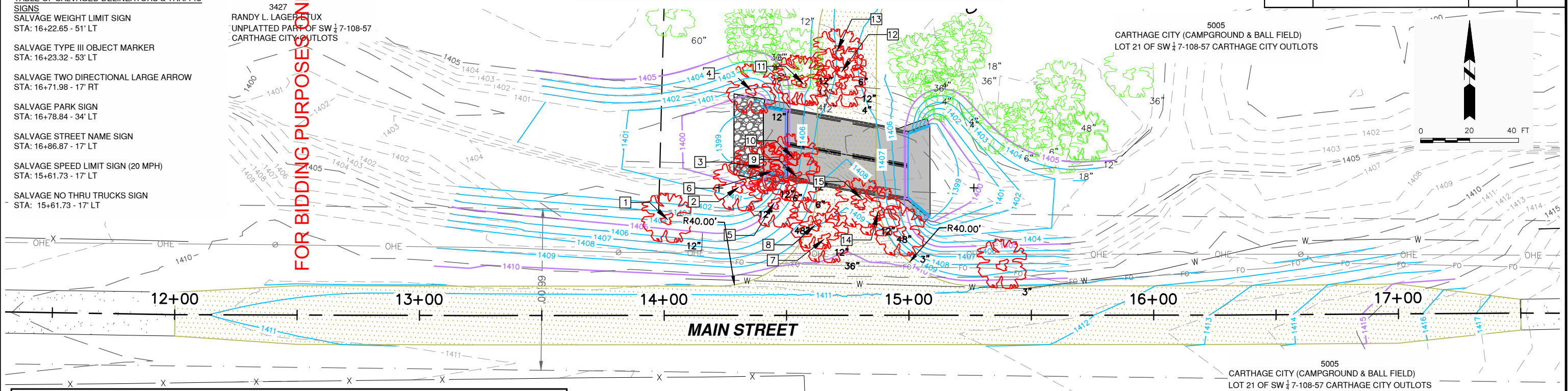
PLAN & PROFILE

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	22	45

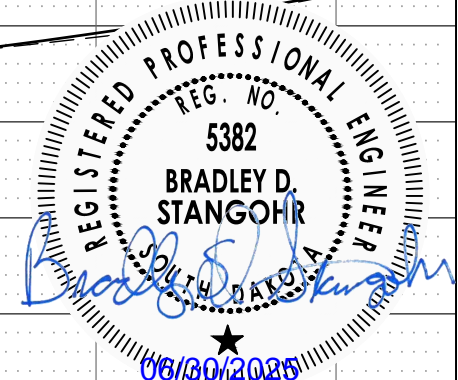
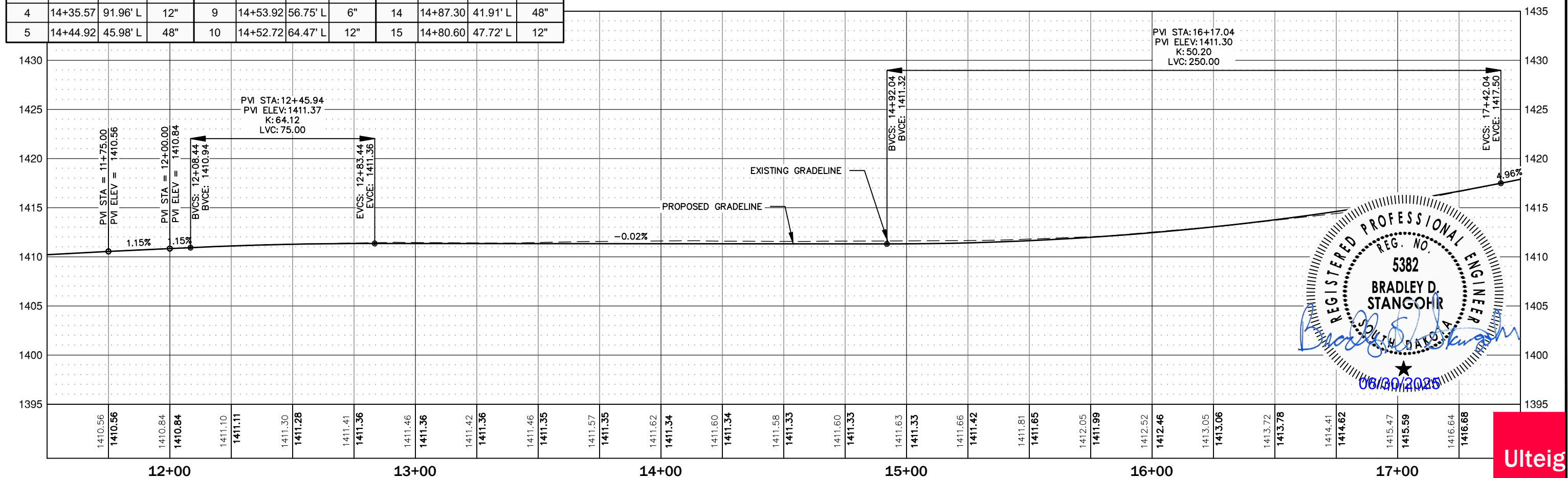
5005
CARTHAGE CITY (CAMPGROUND & BALL FIELD)
LOT 21 OF SW 1/4 7-108-57 CARTHAGE CITY OUTLOTS



FOR BIDDING PURPOSES ONLY



CLEAR AND GRUB TREE											
Number	Station	Offset	Diameter	Number	Station	Offset	Diameter	Number	Station	Offset	Diameter
1	14+01.37	39.23' L	12"	6	14+43.92	58.83' L	6"	11	14+56.86	94.76' L	12"
2	14+30.40	52.40' L	12"	7	14+65.24	31.00' L	36"	12	14+72.61	99.59' L	12"
3	14+39.56	60.46' L	12"	8	14+61.56	36.79' L	12"	13	14+70.71	108.11' L	6"
4	14+35.57	91.96' L	12"	9	14+53.92	56.75' L	6"	14	14+87.30	41.91' L	48"
5	14+44.92	45.98' L	48"	10	14+52.72	64.47' L	12"	15	14+80.60	47.72' L	12"



Ulteig

PLAN & PROFILE

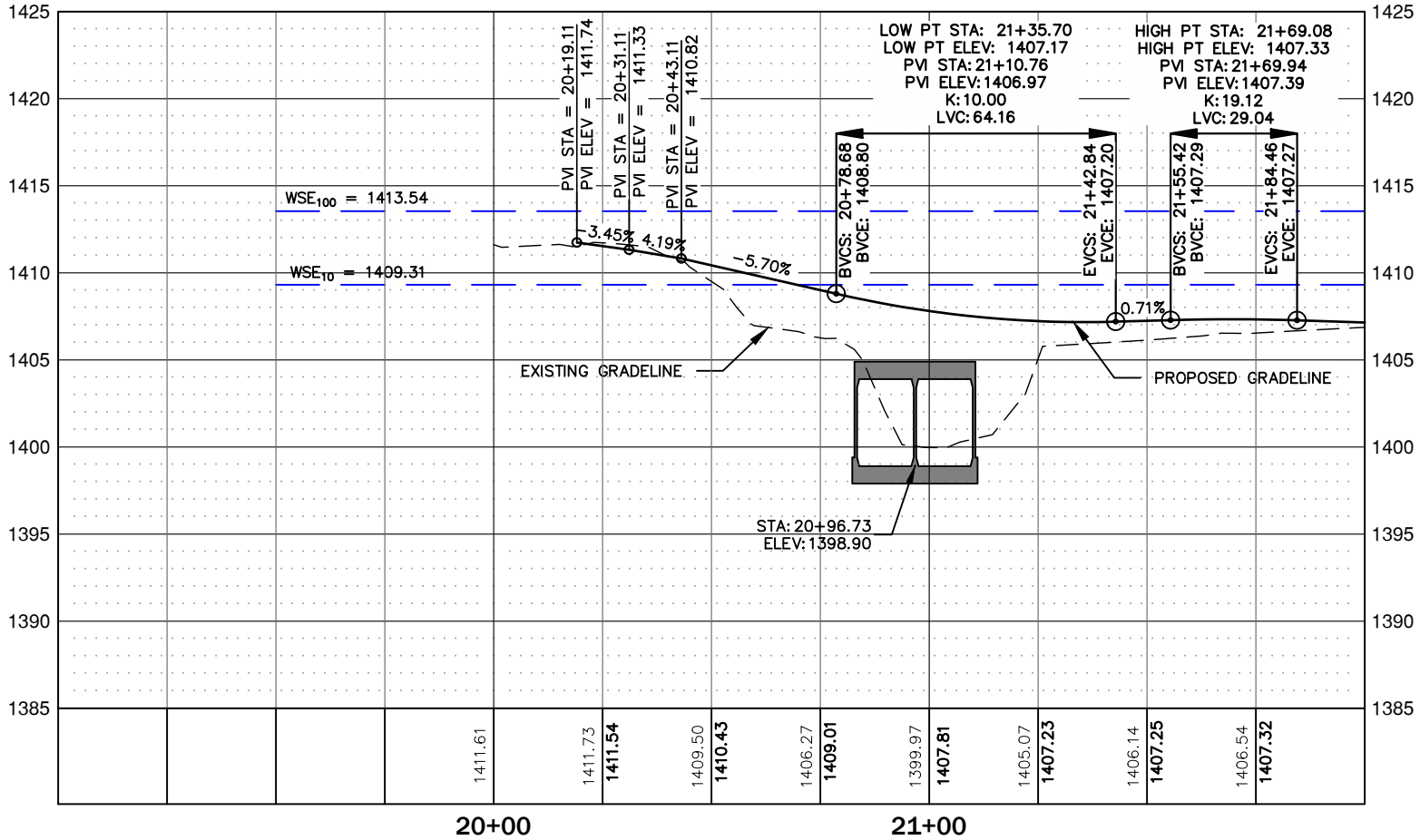
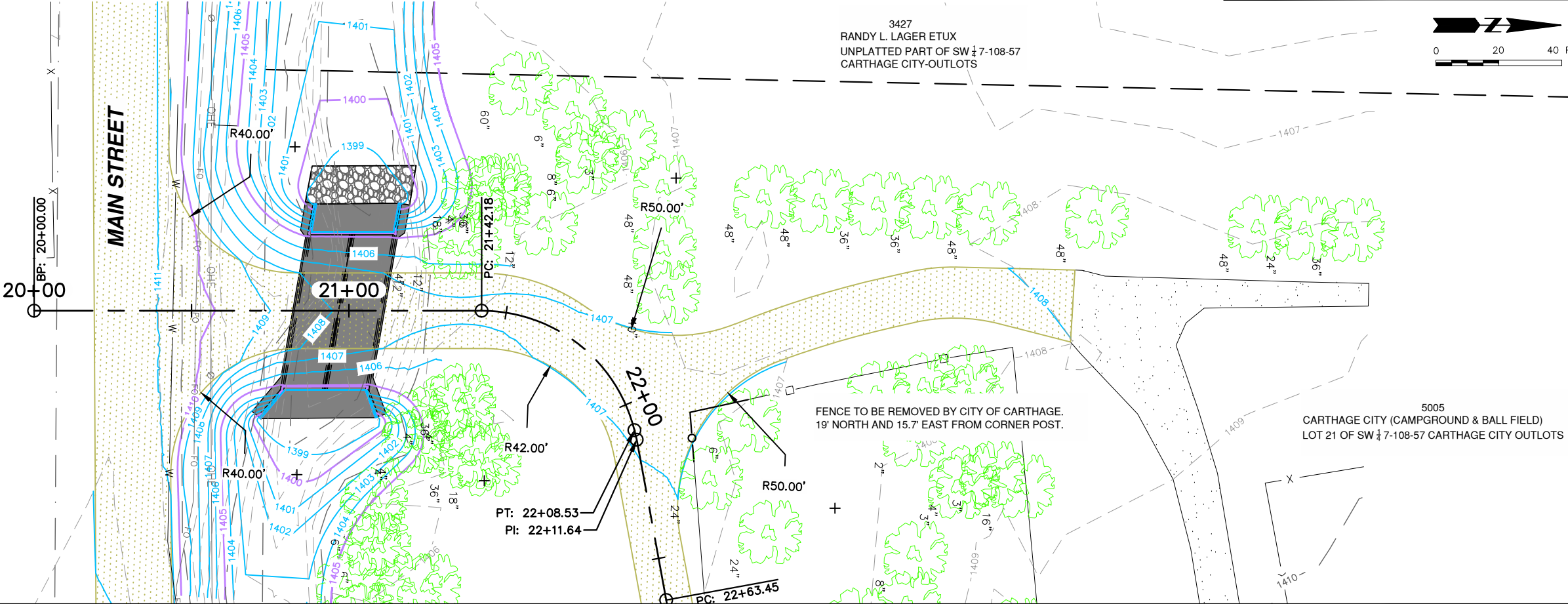
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	23	45

STA 16+00.00
REMOVE EXISTING
24-FOOT ONE-SPAN STEEL I-BEAM GIRDER BRIDGE
(INCIDENTAL WORK, STRUCTURE)

STA 20+96.73
INSTALL 61' X 5' CAST-IN-PLACE RCBC
10° LHF SKEW
DA = 143.5 SQ. MI.

Flow				Elevation	
Q _d =	431	cfs		1409.31	
Q ₁₀₀ =	5360	cfs		1413.54	
Q _{OT} = Q	3	=	299	cfs	1406.50



Ulteig

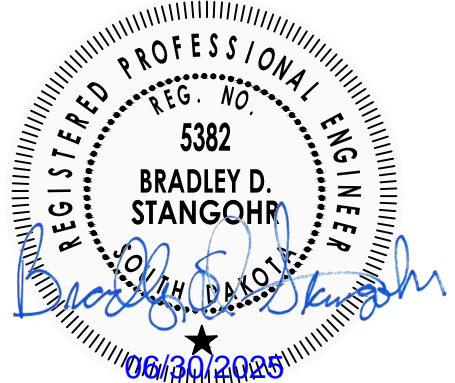
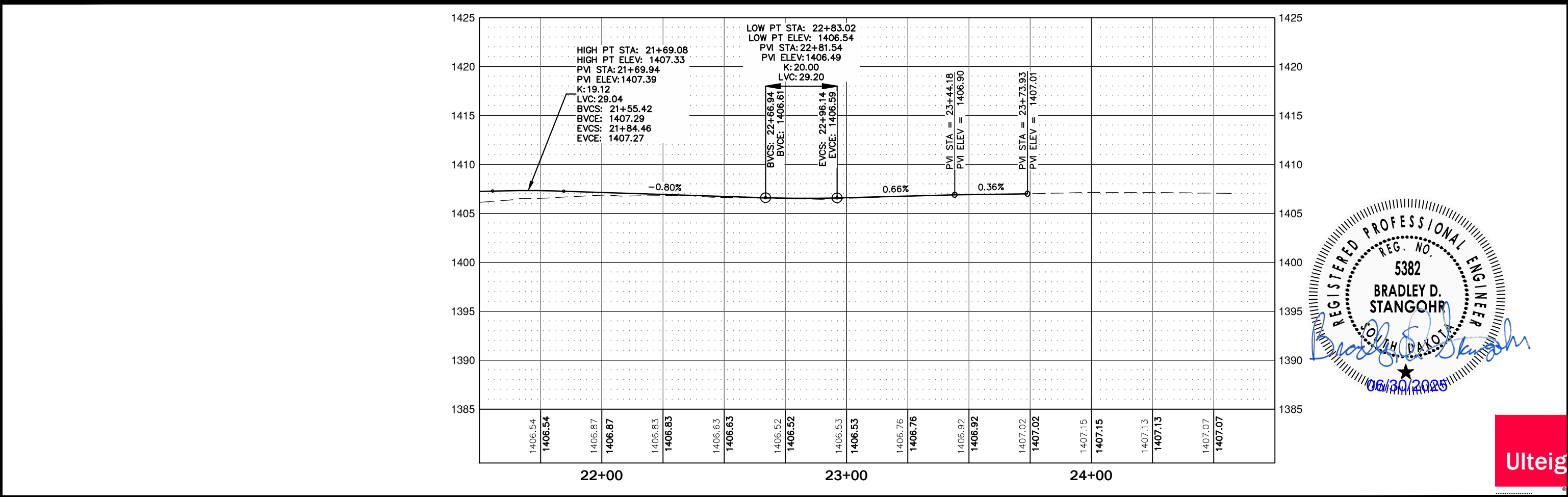
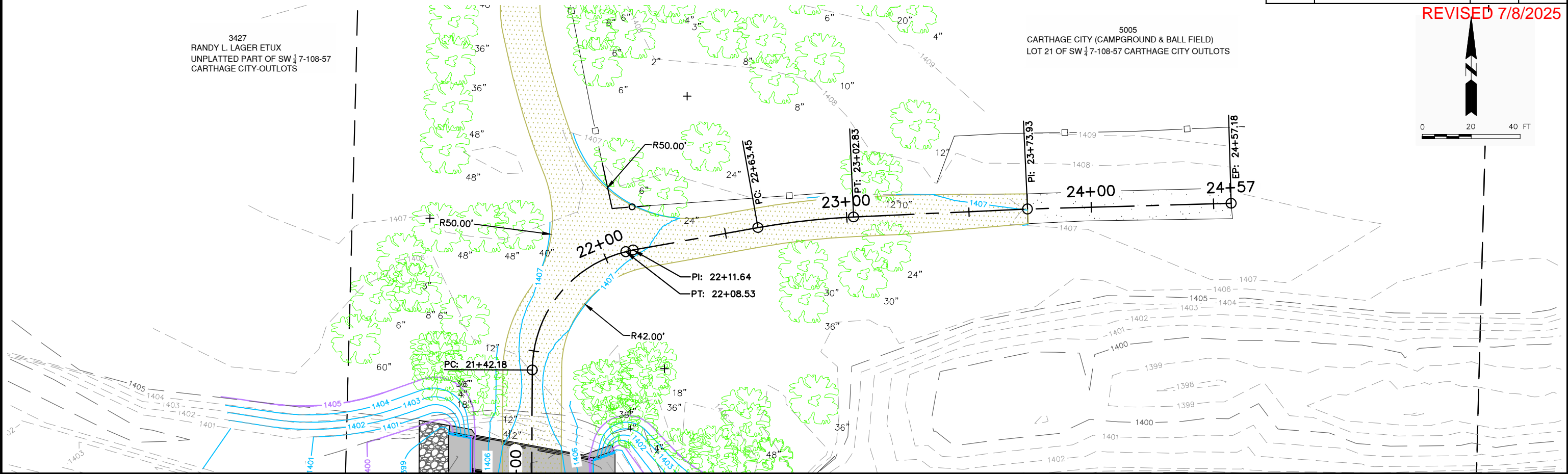
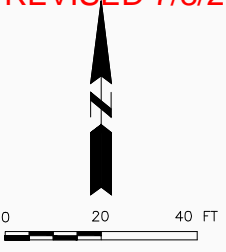
We listen. We solve.®

PLAN & PROFILE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	24	45

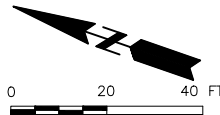
REVISED 7/8/2025



PLAN & PROFILE

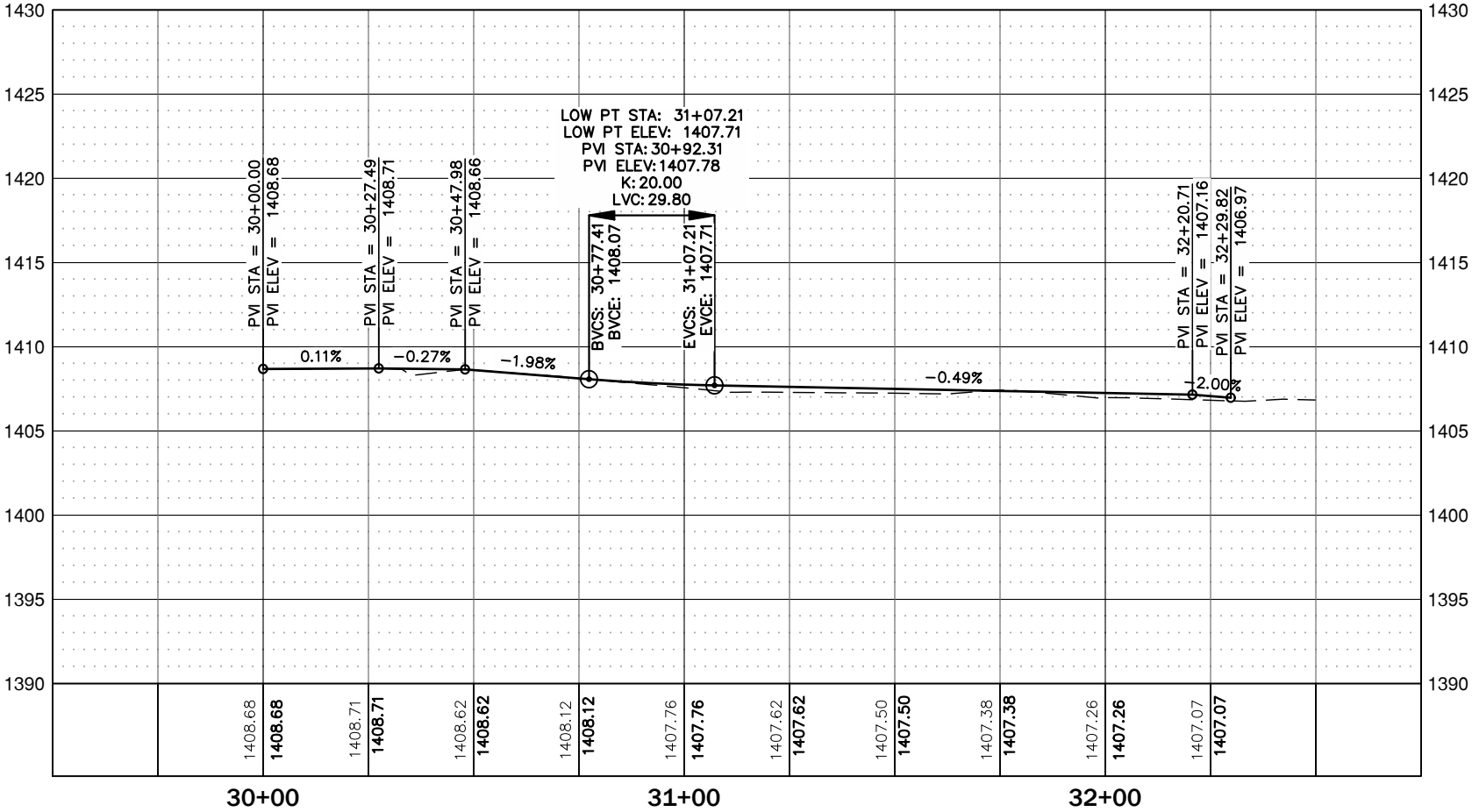
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	25	45

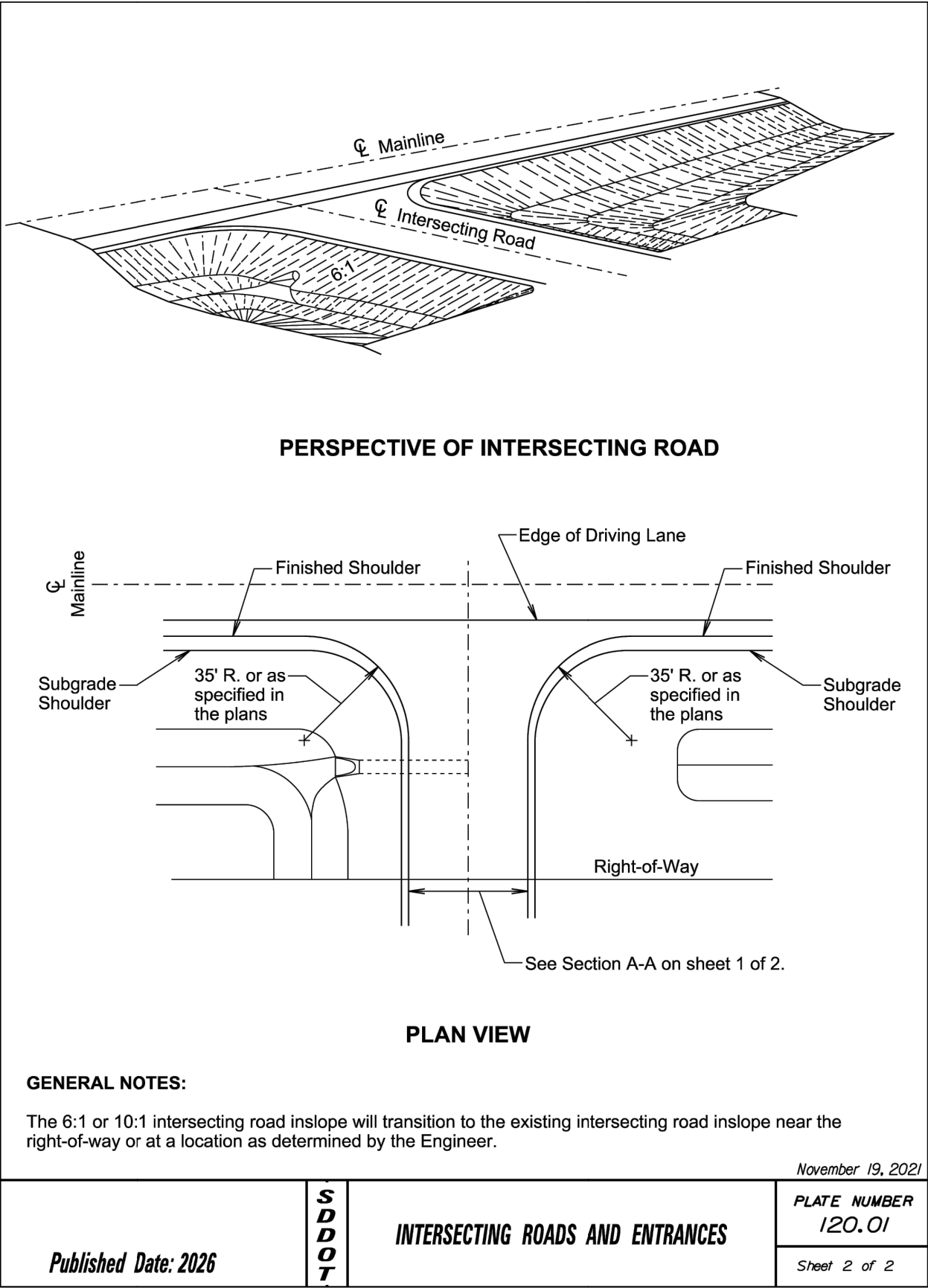
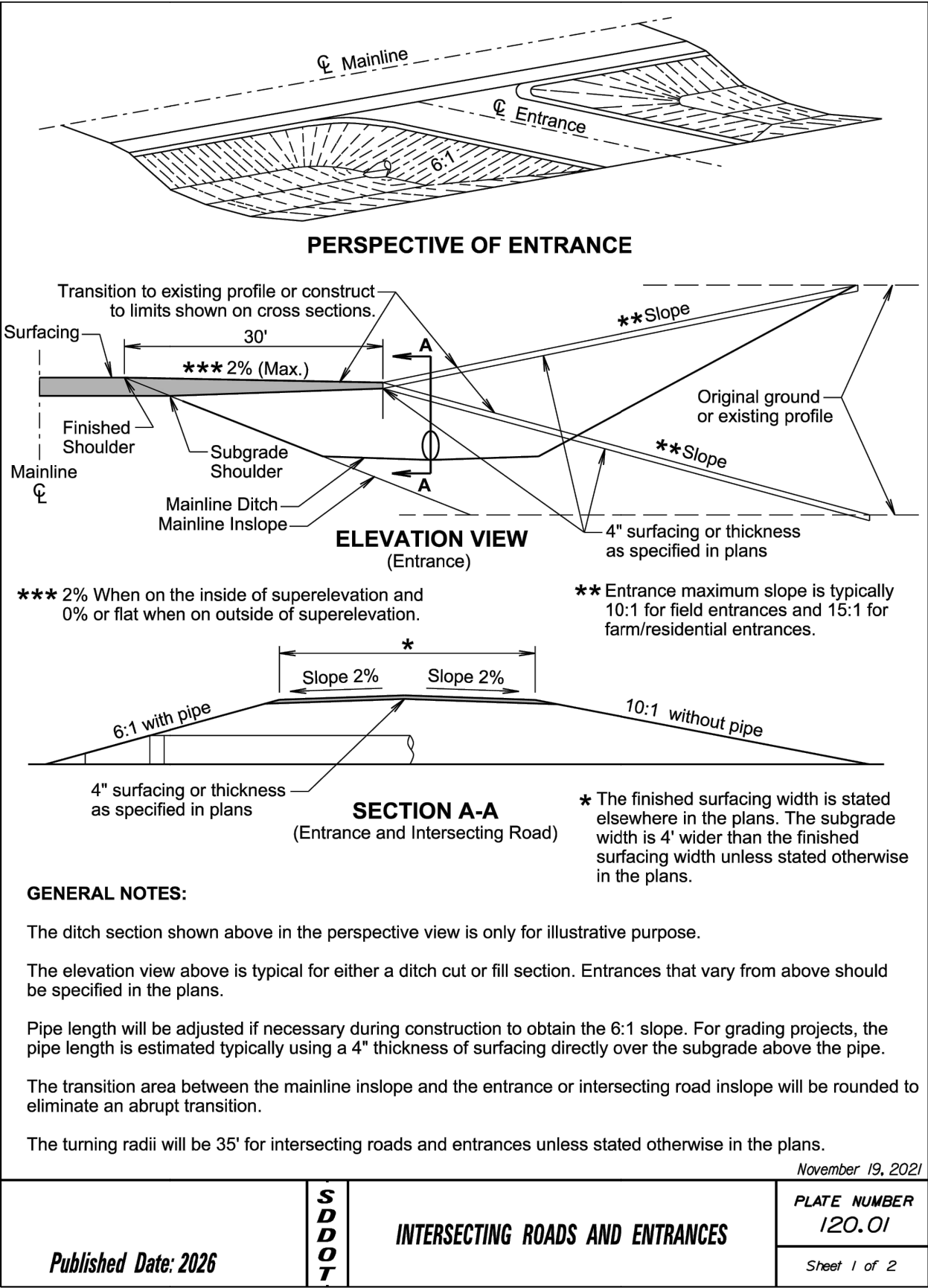


5005
CARTHAGE CITY (CAMPGROUND & BALL FIELD)
LOT 21 OF SW ¼ 7-108-57 CARTHAGE CITY OUTLOTS

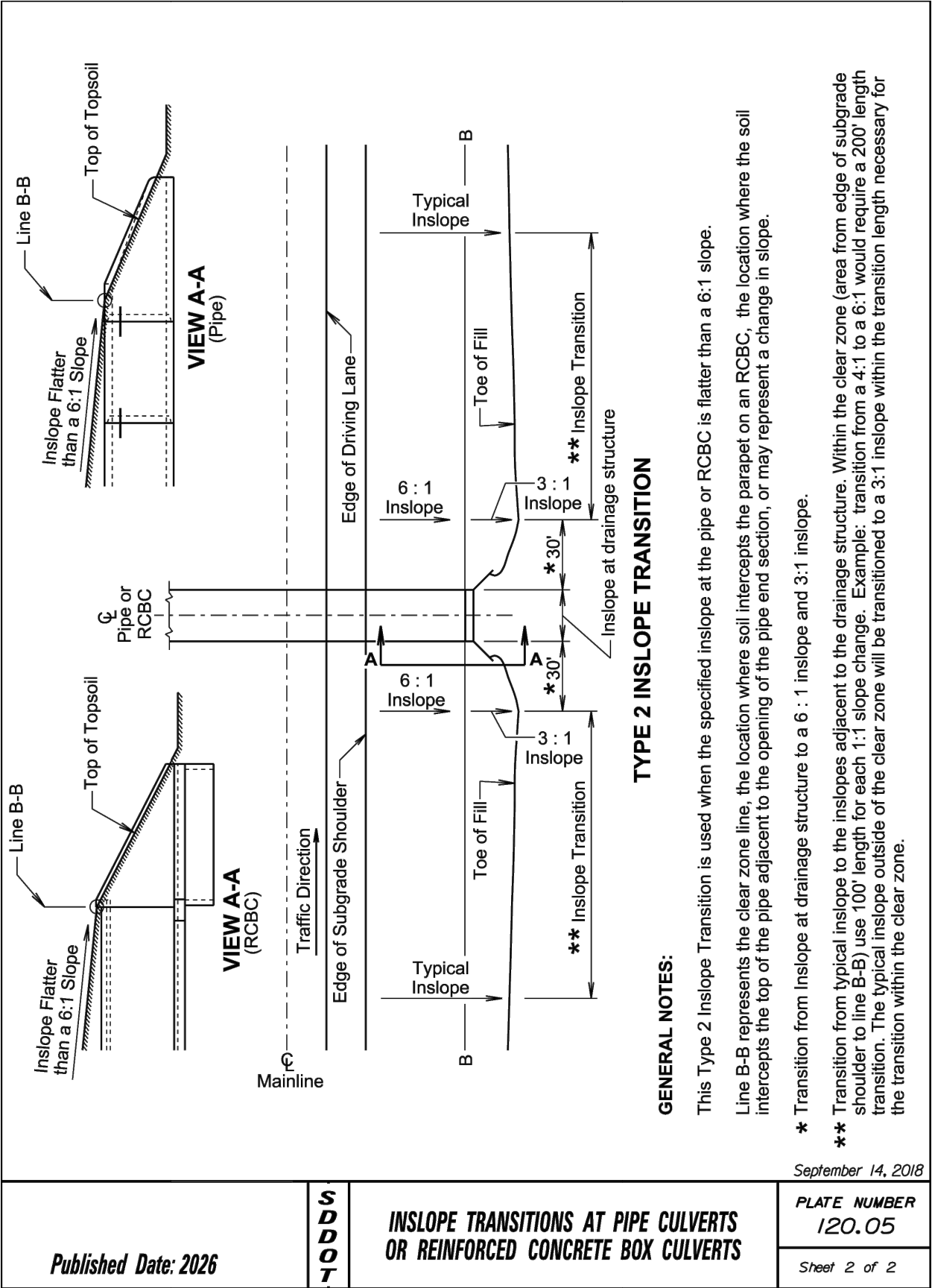
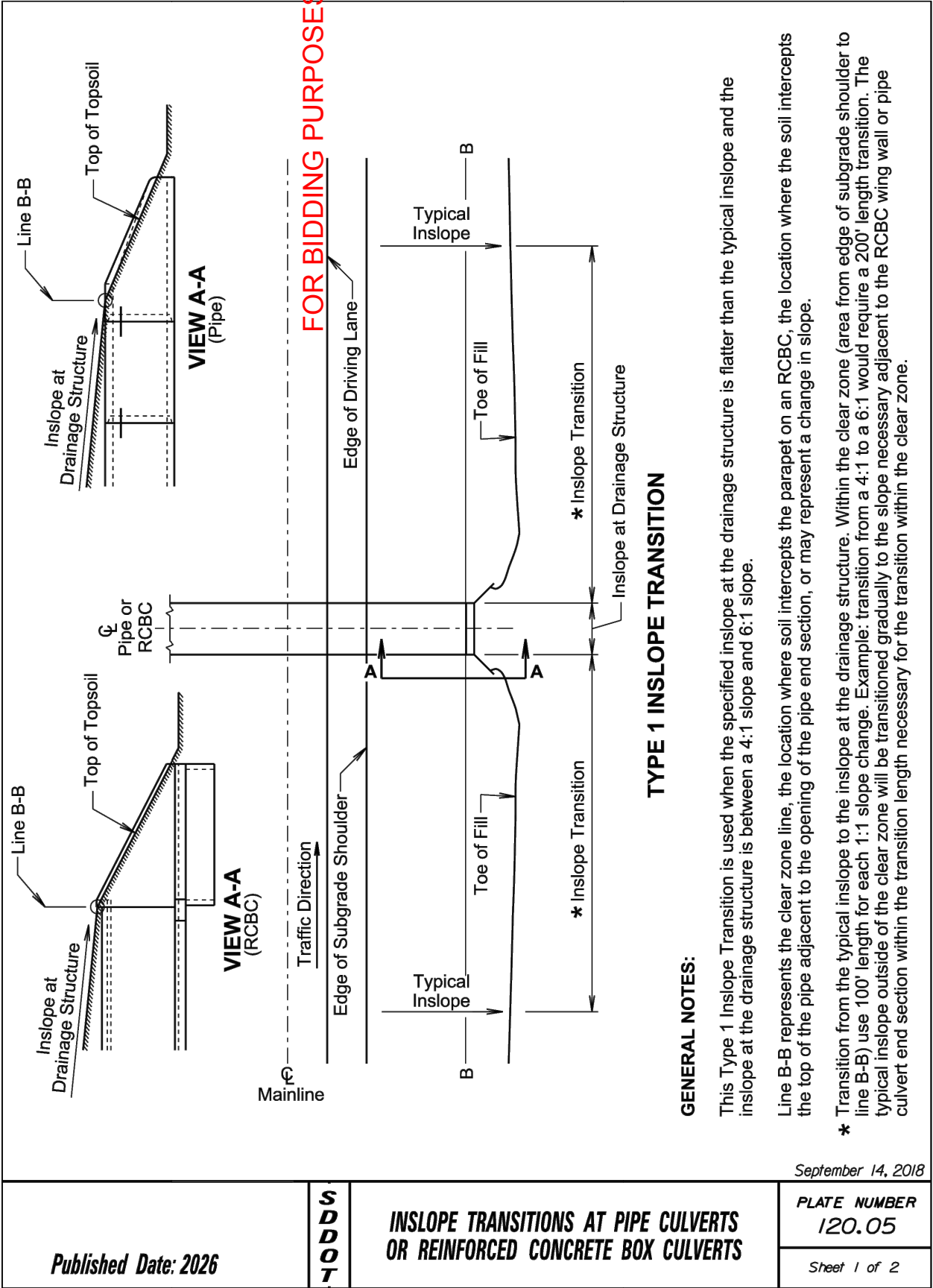
3427
RANDY L. LAGER ETUX
UNPLATTED PART OF SW ¼ 7-108-57
CARTHAGE CITY-OUTLOTS



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	26	45



STANDARD PLATES



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

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8049(25)	28	45

-X028- INDEX OF CULVERT SHEETS-

Sheet No. 1 - General Drawing and Quantities
Sheet No. 2 - Notes and Undercut Details (A)
Sheet No. 3 - Inlet Details (A)
Sheet No. 4 - Inlet Details (B)
Sheet No. 5 - Inlet Details (C)
Sheet No. 6 - Outlet Details (A)
Sheet No. 7 - Outlet Details (B)
Sheet No. 8 - F5 Barrel Section Details (49' - 0") (A)
Sheet No. 9 - F5 Barrel Section Details (49' - 0") (B)
Sheet No. 10 - Details of Standard Plate No's 460.02 and 620.16

HYDRAULIC DATA

Q_d	431 cfs
A_d	125 sq. ft.
V_d	3.44 fps
Q_F	1350 cfs
Q_{100}	5,360 cfs
Q_{OT}	299 cfs
V_{max}	5.51 fps

Q_d = Design discharge for the proposed culvert based on 10 year frequency. El. 1409.31.

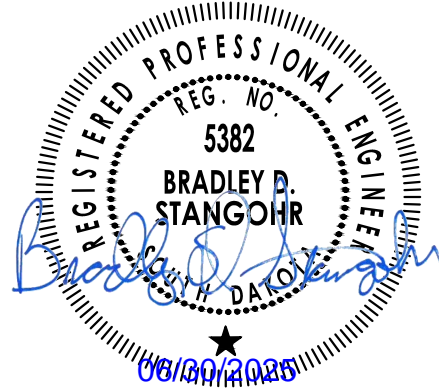
Q_{OT} = Overtopping discharge and frequency 3 year recurrence interval. El. 1406.50. Location 40± North of the proposed structure.

Q_F = Designated peak discharge for the basin approaching proposed project based on 10 year frequency.

Q_{100} = Computed discharge for the basin approaching proposed project based on 100 year frequency. El. 1413.54.

V_{max} = Maximum computed outlet velocity for the proposed culvert based on a 5 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 re-analysis of the hydraulics at this site to determine its effect on public safety.



◆ Topeka Shiner Stream

GENERAL DRAWING AND QUANTITIES

FOR

2 - 13' X 5' BOX CULVERT (C.I.P.)

◆ REDSTONE CREEK
STA. 20 + 96.73
STR. NO. 49-063-018
PCN 09AN

10° LHF SKEW
SEC. 7-T108N-R57W
BRO-B 8049(25)
HL-93

MINER COUNTY

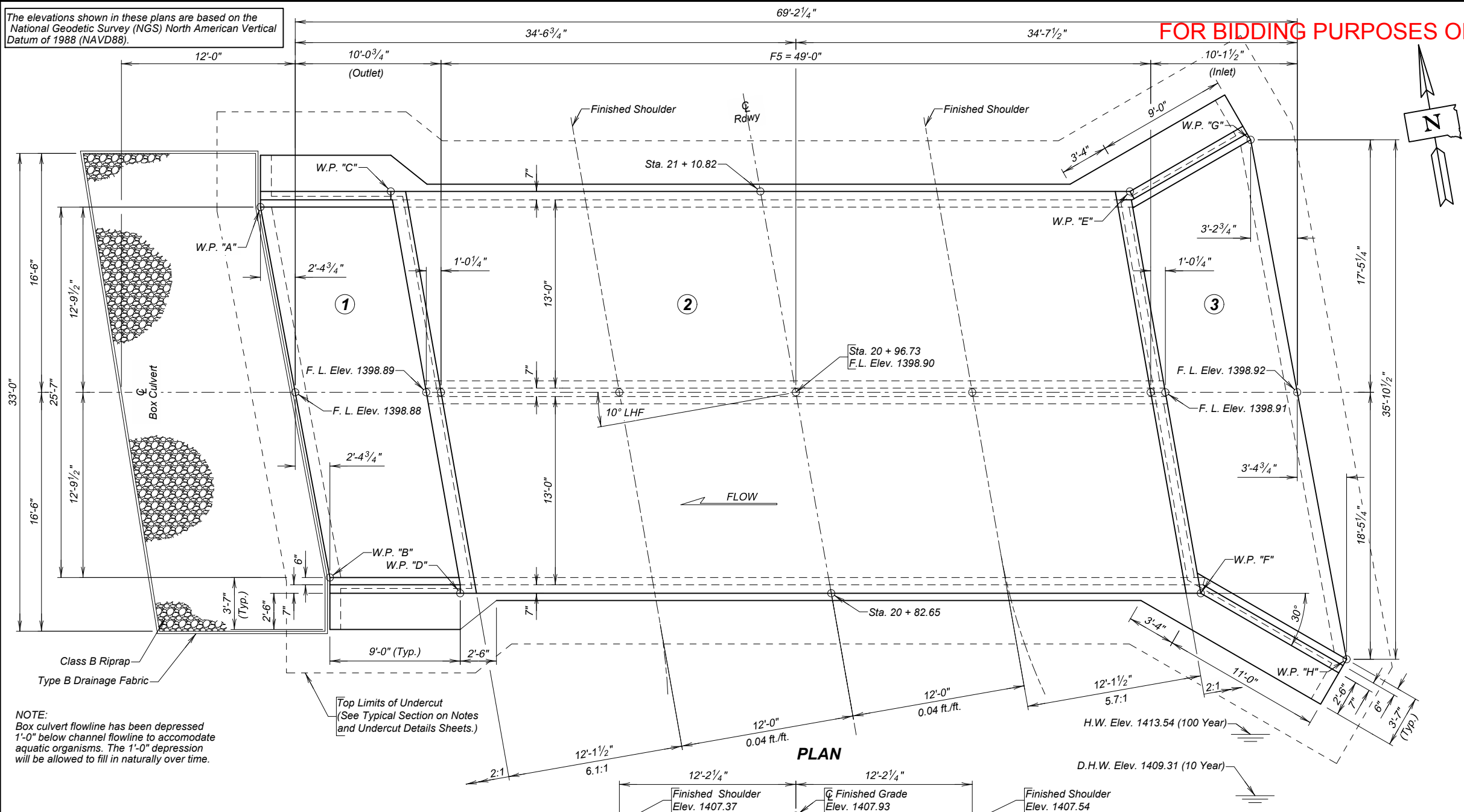
S. D. DEPT. OF TRANSPORTATION

APRIL 2024

1 OF 10

-X028-

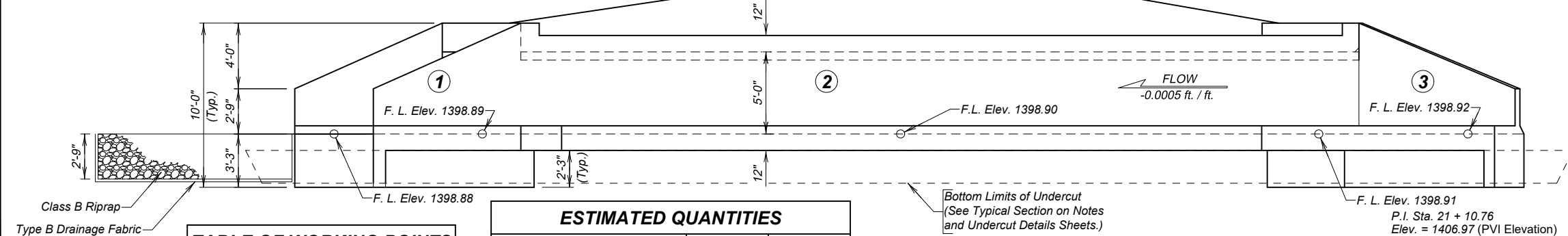
DESIGNED BY BDS	CK. DES. BY MTH	DRAFTED BY BDS	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------



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

Top Limits of Undercut
(See Typical Section on Notes and Undercut Details Sheets.)

PLAN

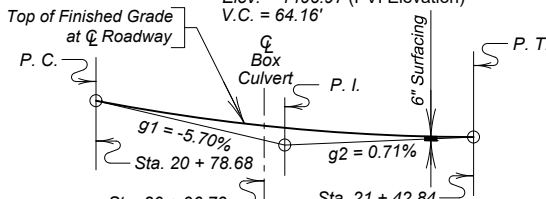


ELEVATION

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Incidental Work, Structure	LS	Lump Sum
Structure Excavation, Box Culvert	Cu. Yd.	80
Box Culvert Undercut	Cu. Yd.	200
Class A45 Concrete, Box Culvert	Cu. Yd.	160.2
Reinforcing Steel	Lb.	22660
Class B Riprap	Ton	56
Type B Drainage Fabric	Sq. Yd.	72

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



VERTICAL CURVE DATA

SPECIFICATIONS

1. Design Specifications: AASHTO LRFD Bridge Design Specification, 9th Edition.
2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2015 Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal

GENERAL NOTES

1. Design Live Load: HL-93. No construction loading in excess of legal load was considered.
2. The design of the barrel section is based on a minimum fill height of 0 feet and include all subsequent fill heights up to and including the maximum fill height of 5 feet (F5).
3. Design Material Strengths: Concrete $f_c = 4,500$ psi
Reinforcing Steel $f_y = 60,000$ psi
4. All concrete will be Class A45 Concrete, Box Culvert conforming to Section 460 of the Construction Specifications.
5. All reinforcing steel will conform to ASTM A615 Grade 60.
6. All lap splices shown are contact lap splices unless noted otherwise.
7. All exposed concrete corners and edges will be chamfered $\frac{3}{4}$ -inch unless noted otherwise in the plans.
8. Use 1-inch clear cover on all reinforcing steel EXCEPT as shown.
9. The Contractor will imprint on the structure the date of construction as specified and detailed on Standard Plate 460.02.
10. Care will be taken to establish Working Points (W.P.) as shown on the wings.
11. Circled numbers in PLAN and ELEVATION views on the General Drawing are section I.D. Numbers (see SDDOT Materials Manual).
12. Cost of Preformed Expansion Joint Filler used in apron construction will be incidental to the other contract items.
13. Soils below the bottom of the proposed RCBC consist of gray silt clay.
14. Groundwater is anticipated at an elevation of 1399 feet based on the subsurface investigation conducted in July 2023. Dewatering will be required to construct the box culvert. All cost incurred for dewatering will be incidental to other contract items.
15. Compaction of earth embankment and box culvert backfill material will be governed by the Ordinary Compaction Method.

INCIDENTAL WORK, STRUCTURE

In place is a 25'-0" long, one span steel stringer bridge with a timber deck, concrete abutments and concrete wingwalls.

Break down and remove the existing bridge in accordance with Section 110 of the Specifications. The abutments shall be removed to 1' below the channel flowline. The existing riprap and concrete for channel protection will remain in place.

The Contractor will salvage the steel stringers for the City of Carthage. All Items not salvaged for the City will become the property of the Contractor and will be properly disposed of by the Contractor.

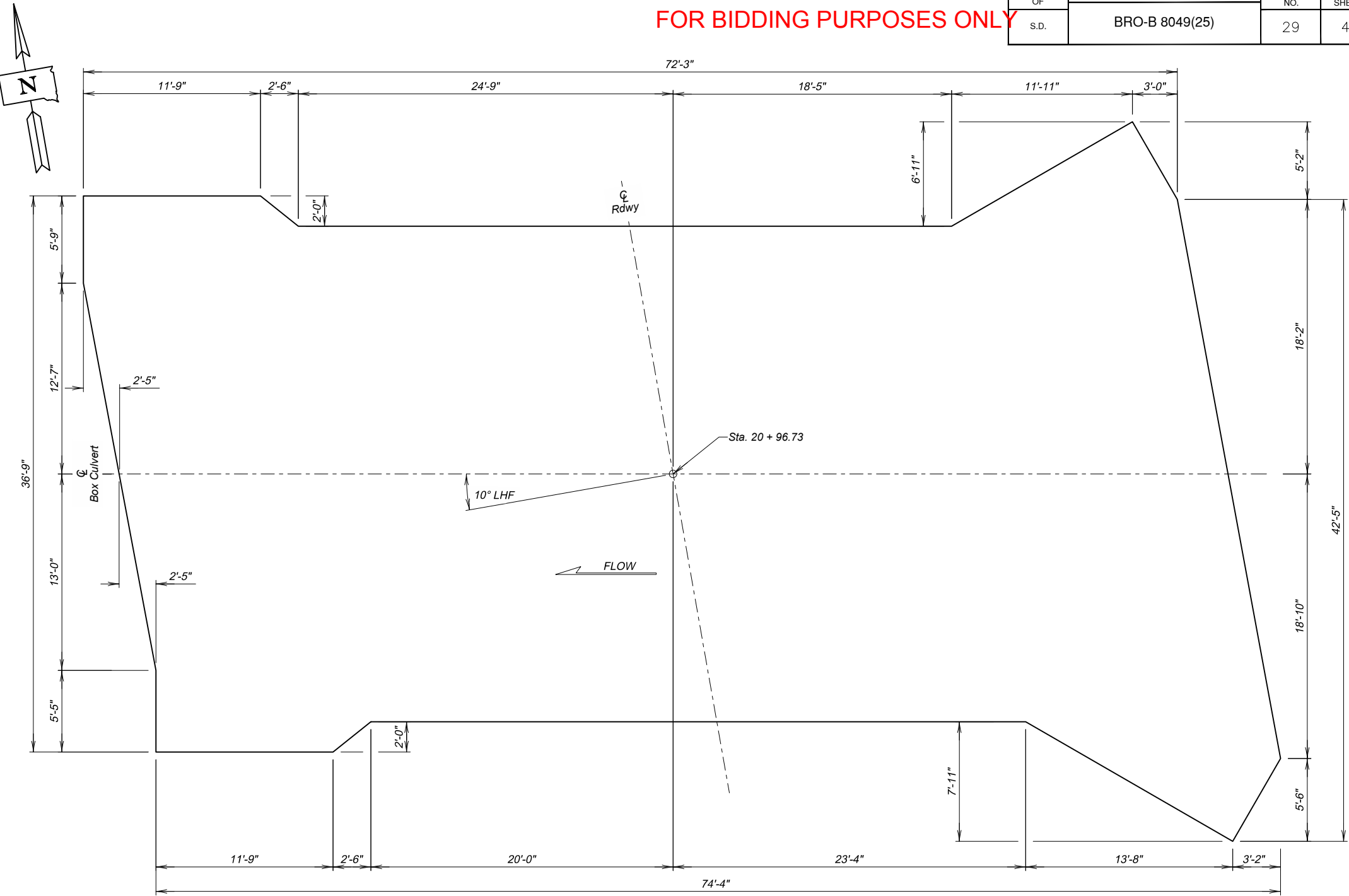
The foregoing is a general description of the in-place bridge and should not be construed to be complete in all details. Before preparing the bid it shall be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work and materials involved. All costs involved in this removal will be incidental to the contract lump sum price for "Incidental Work, Structure".

NOTICE - LEAD BASED PAINT

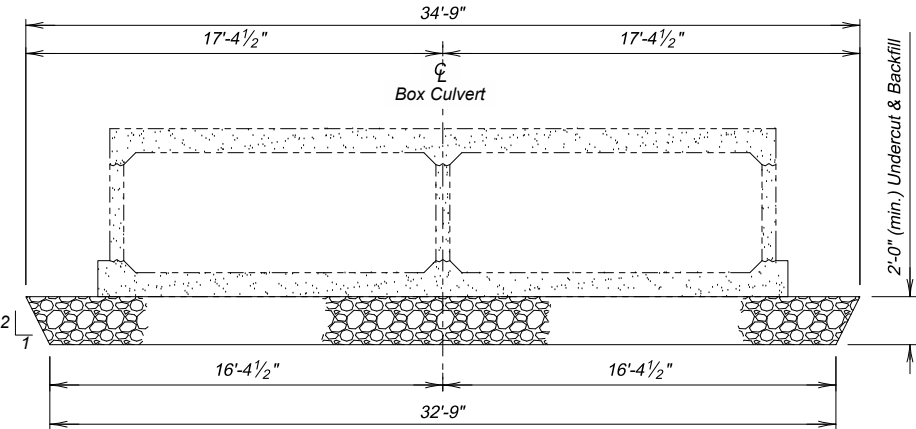
Be advised that the paint on the steel surfaces of the existing structure contains lead. The Contractor will plan operations accordingly and inform employees of the hazards of lead exposure.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8049(25)	29	45



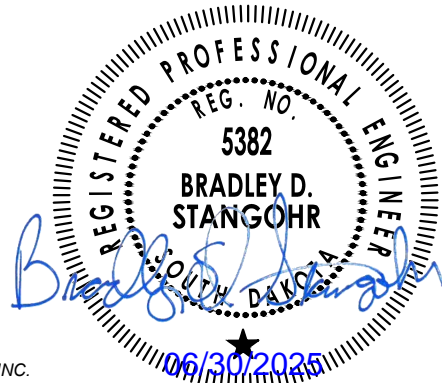
UNDERCUT LAYOUT
(Bottom Dimensions)



TYPICAL SECTION
(For Limits of Undercut)

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Box Culvert Undercut	Cu. Yd.	200

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



NOTES AND UNDERCUT DETAILS
FOR

2 - 13' X 5' BOX CULVERT (C.I.P.)
REDSTONE CREEK
STA. 20 + 96.73
STR. NO. 49-063-018
PCN 09AN
10° LHF SKEW
SEC. 7-T108N-R57W
BRO-B 8049(25)
HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION

APRIL 2024

2 OF 10

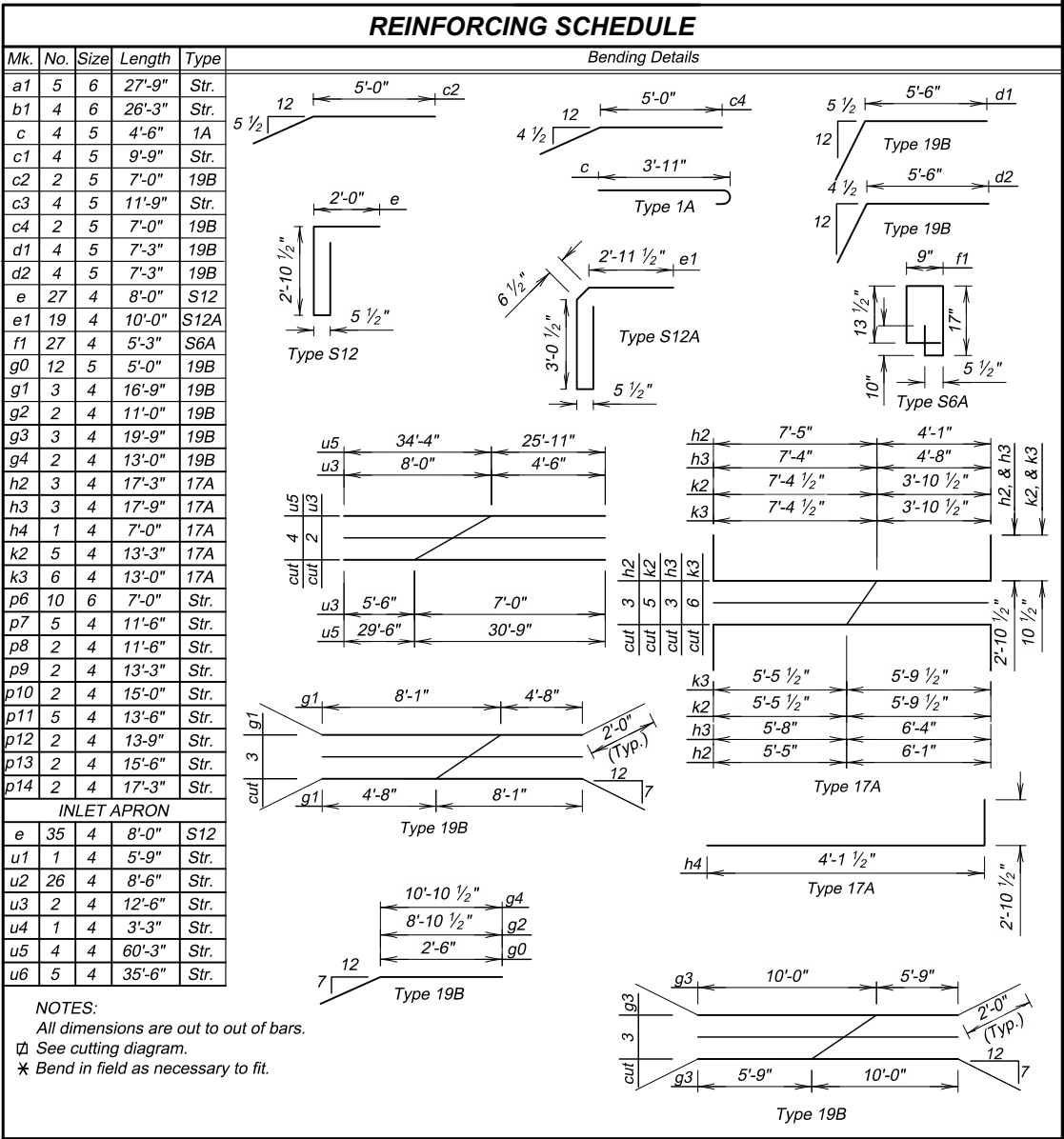
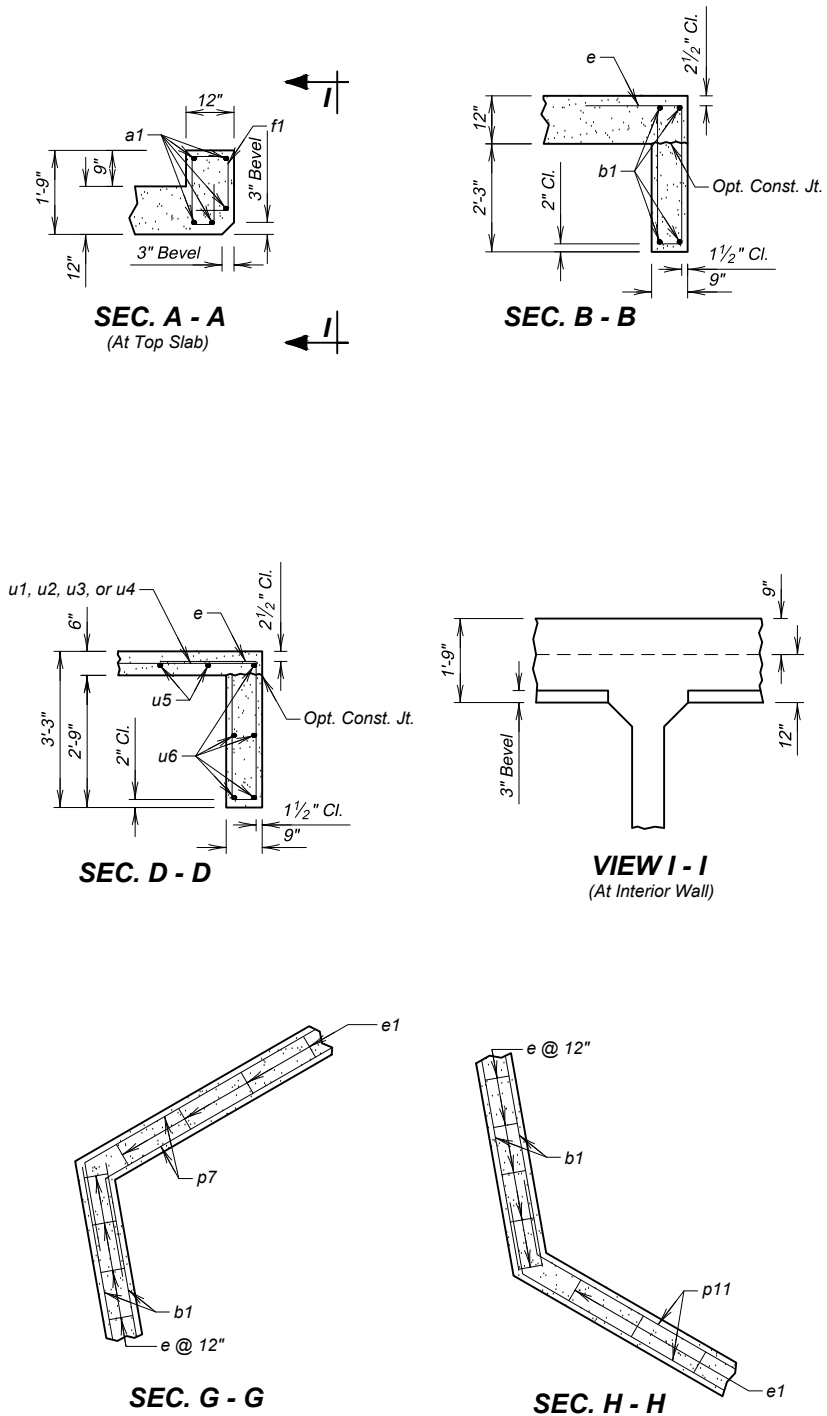
DESIGNED BY	CK. DES. BY	DRAFTED BY	
BDS	MTH	BDS	

BRIDGE ENGINEER

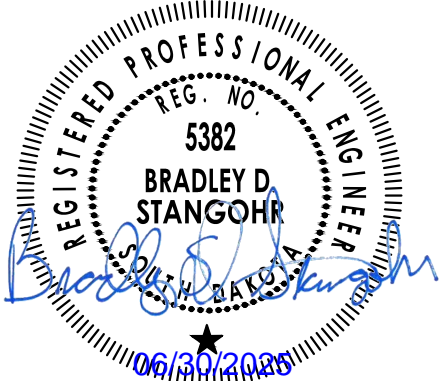
PLANS BY: ULTEIG ENGINEERS, INC.

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8049(25)	32	45



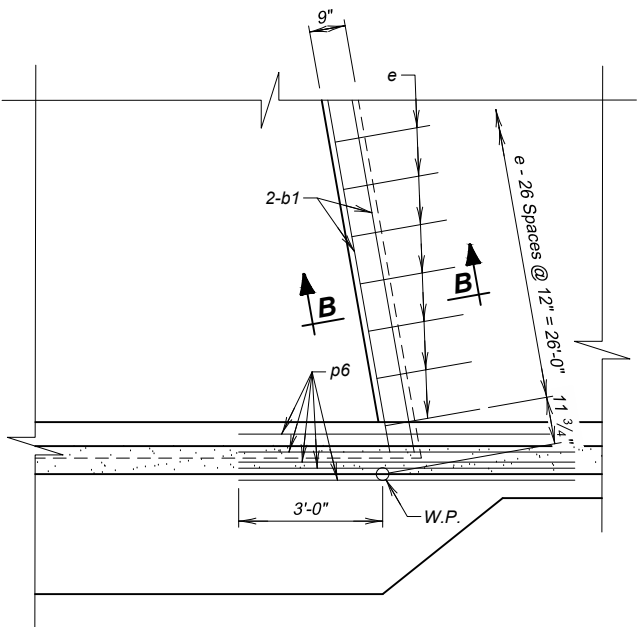
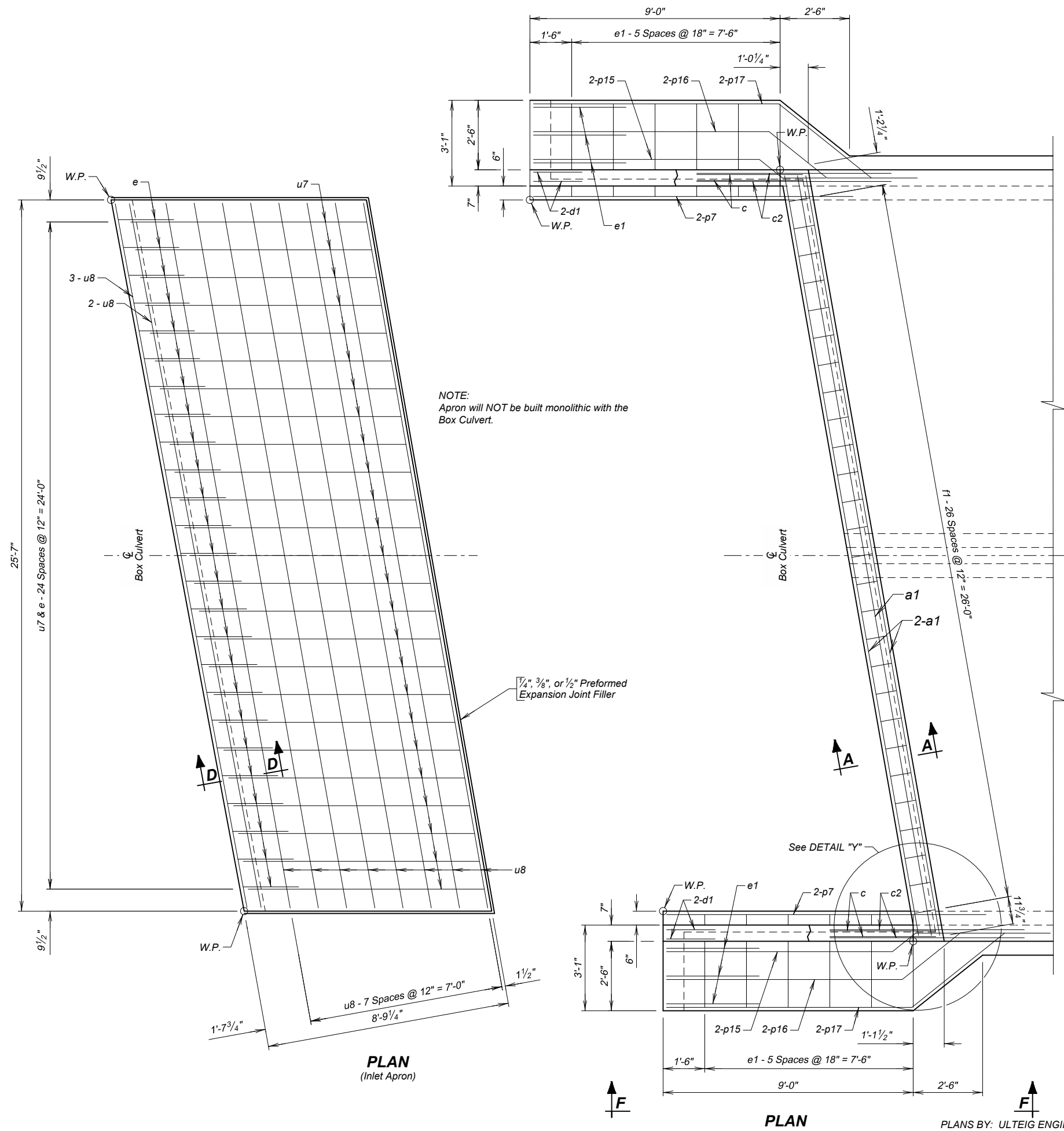
ESTIMATED QUANTITIES			
ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
Inlet	10.2	1389	6.2
Inlet Apron	7.9	637	7.9



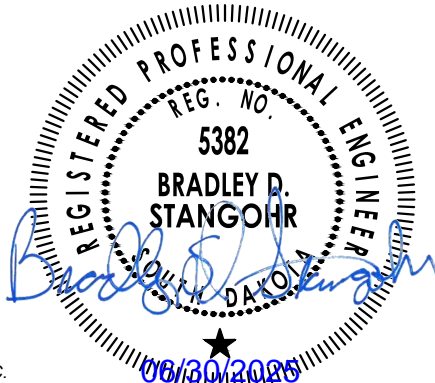
INLET DETAILS (C)
FOR
2 - 13' X 5' BOX CULVERT (C.I.P.)
REDSTONE CREEK
STA. 20 + 96.73
STR. NO. 49-063-018
PCN 09AN
10° LHF SKEW
SEC. 7-T108N-R57W
BRO-B 8049(25)
HL-93
MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2024
DESIGNED BY: BDS
CK. DES. BY: MTH
DRAFTED BY: BDS
BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8049(25)	33	45

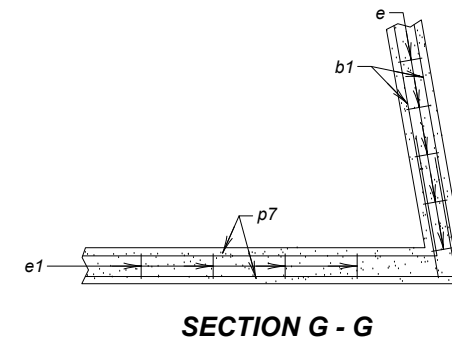


OUTLET DETAILS (A)
FOR
2 - 13' X 5' BOX CULVERT (C.I.P.)
REDSTONE CREEK
STA. 20 + 96.73
STR. NO. 49-063-018
PCN 09AN
10° LHF SKEW
SEC. 7-T108N-R57W
BRO-B 8049(25)
HL-93



MINER COUNTY
S. D. DEPT. OF TRANSPORTATION
APRIL 2024

DESIGNED BY BDS	CK. DES. BY MTH	DRAFTED BY BDS	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------

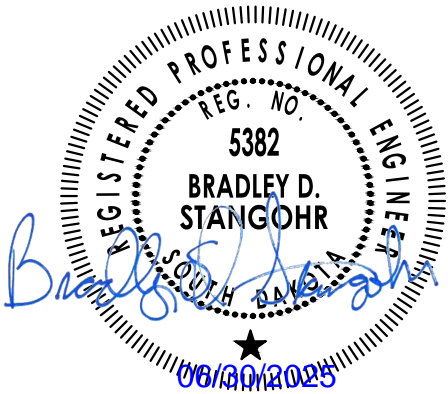
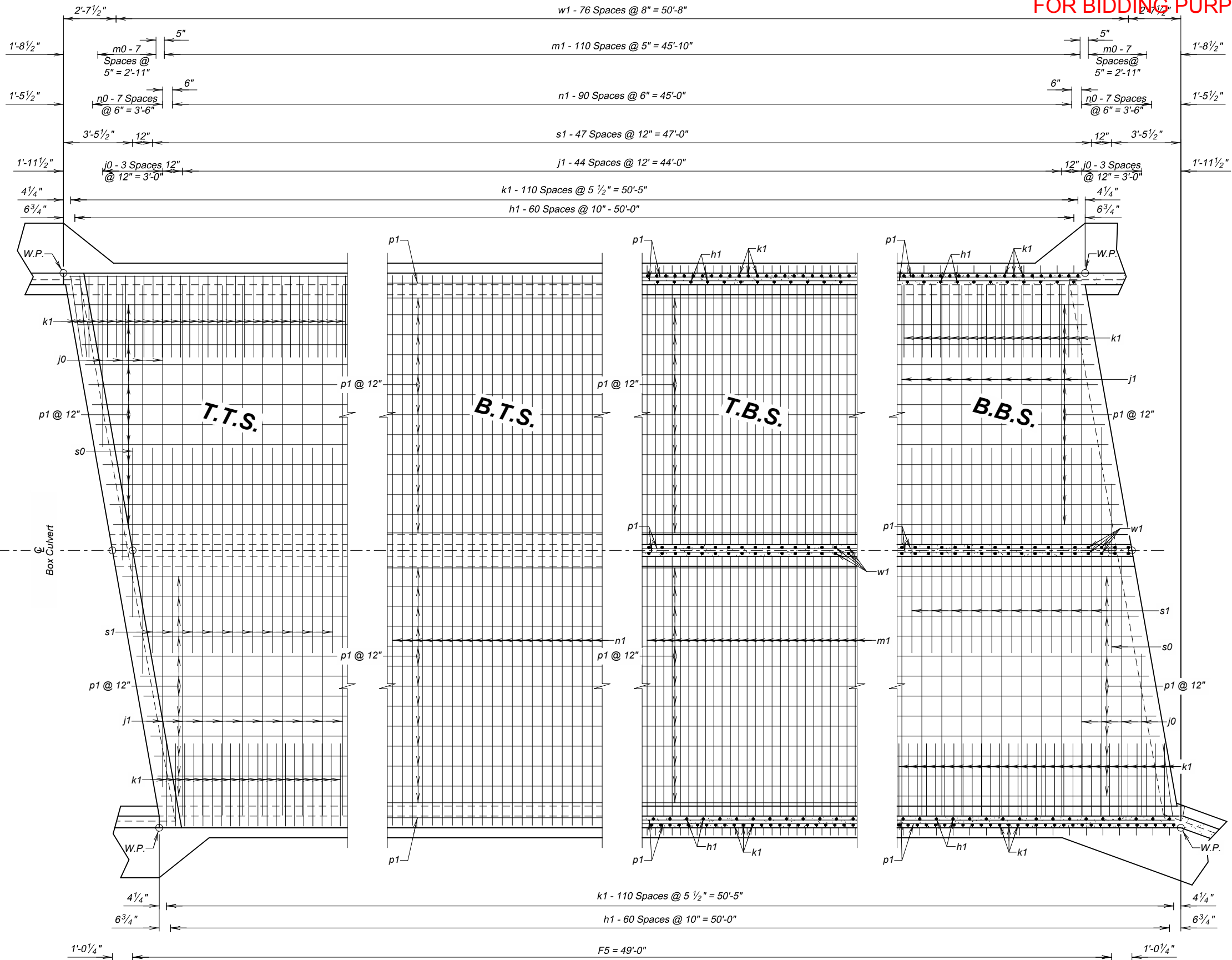


O.F.W.W. - Outside Face of Wing Wall
I.F.W.W. - Inside Face of Wing Wall

DESIGNED BY BDS	CK. DES. BY MTH	DRAFTED BY BDS	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8049(25)	35	45

FOR BIDDING PURPOSES ONLY



F5 BARREL SECTION DETAILS (49' - 0") (A)
FOR
2 - 13' X 5' BOX CULVERT (C.I.P.)
REDSTONE CREEK 10° LHF SKEW
STA. 20 + 96.73 SEC. 7-T108N-R57W
STR. NO. 49-063-018 BRO-B 8049(25)
PCN 09AN HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION

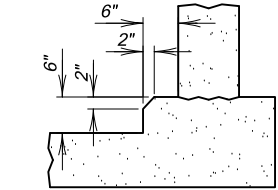
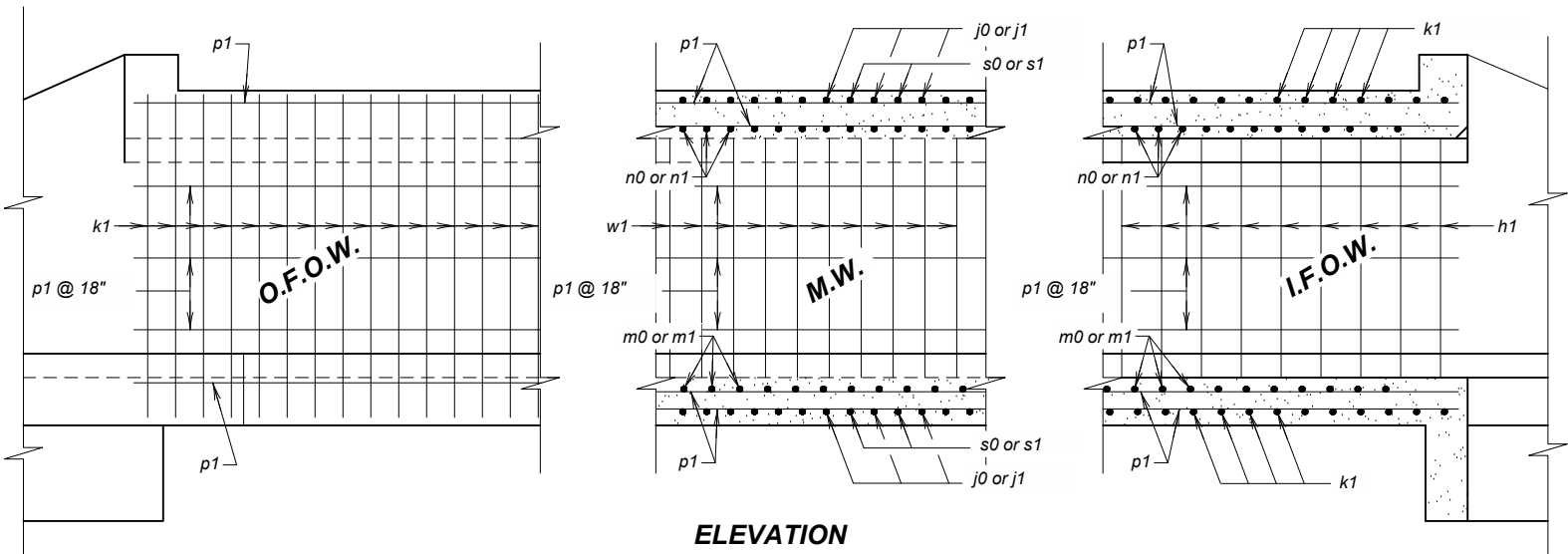
APRIL 2024

8 OF 10

DESIGNED BY BDS	CK. DES. BY MTH	DRAFTED BY BDS	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------

PLANS BY: ULTEIG ENGINEERS, INC.

FOR BIDDING PURPOSES ONLY



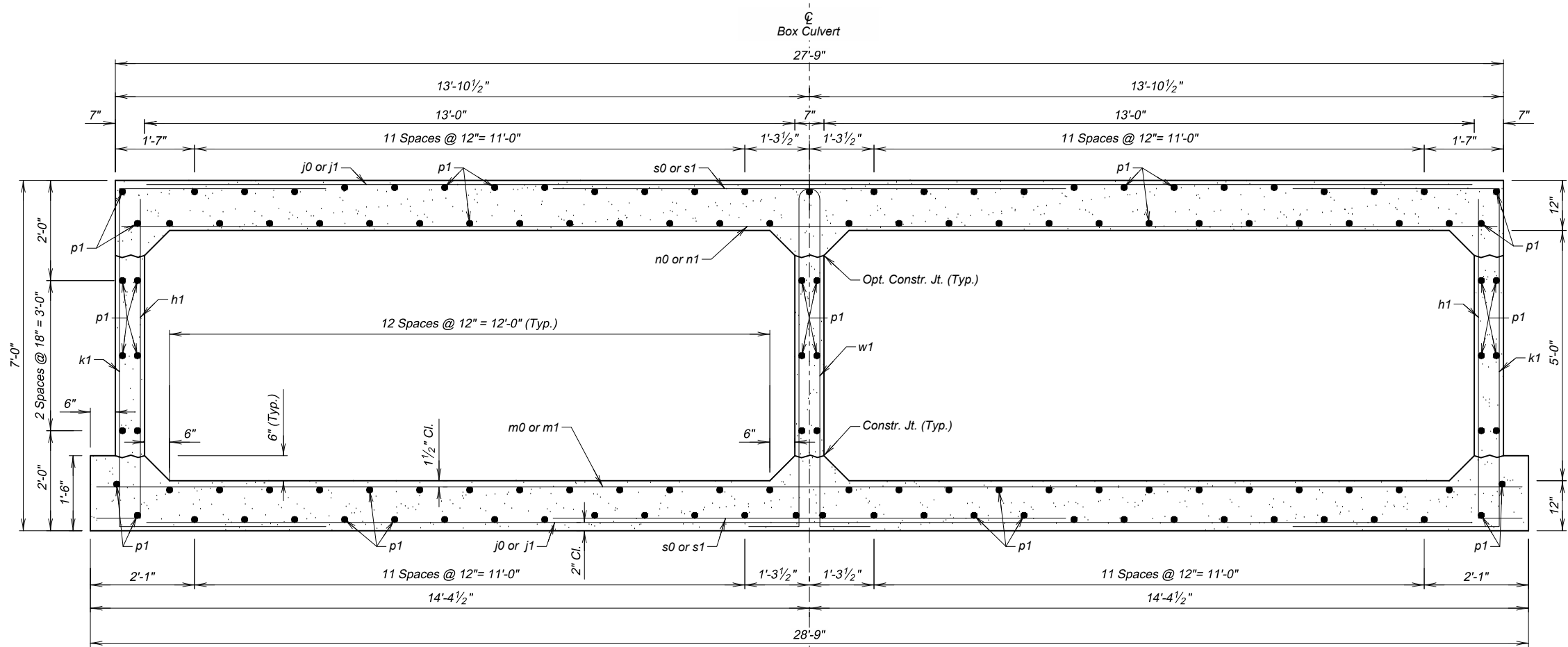
OPTIONAL FILLET DETAIL
(At Bottom Slab)

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

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
h1	122	4	7'-3"	17A
j0	8	6	33'-3"	Str.
j1	90	6	26'-6"	Str.
k1	222	4	15'-0"	17
m0	8	4	31'-0"	Str.
m1	111	4	28'-6"	Str.
n0	8	5	29'-6"	Str.
n1	91	5	27'-6"	Str.
p1	129	4	50'-6"	Str.
s0	4	6	8'-6"	Str.
s1	96	6	10'-3"	Str.
w1	77	4	15'-9"	S11A

Bending Details



F5 BARREL SECTION
(5'-0" Maximum Fill)

F5 BARREL SECTION DETAILS (49' - 0") (B)
FOR

2 - 13' X 5' BOX CULVERT (C.I.P.)

REDSTONE CREEK 10° LHF SKEW
STA. 20 + 96.73 SEC. 7-T108N-R57W
STR. NO. 49-063-018 BRO-B 8049(25)
PCN 09AN HL-93

MINER COUNTY
S. D. DEPT. OF TRANSPORTATION

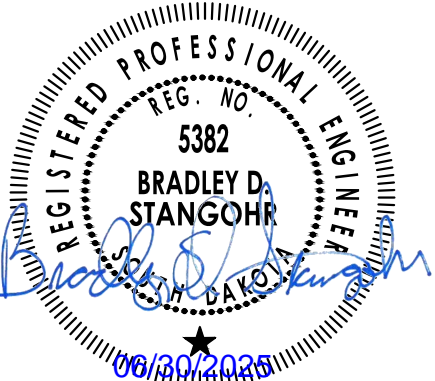
APRIL 2024

9 OF 10

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

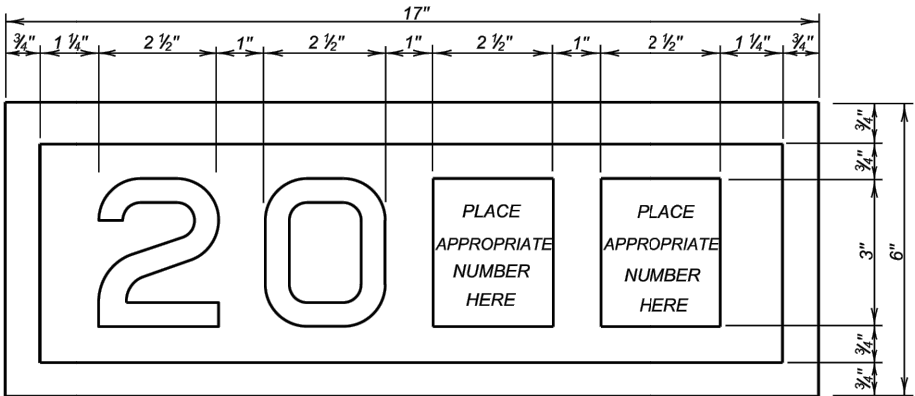
ESTIMATED QUANTITIES			
ITEM	Class A45 Concrete, Box Culvert	Reinforcing Steel	Structure Excavation, Box Culvert
UNIT	Cu. Yd.	Lb.	Cu. Yd.
1 - F5 Barrel Section @ 49'-0"	126.3	18623	54.3

PLANS BY: ULTEIG ENGINEERS, INC.



DESIGNED BY BDS	CK. DES. BY MTH	DRAFTED BY BDS	BRIDGE ENGINEER
--------------------	--------------------	-------------------	-----------------

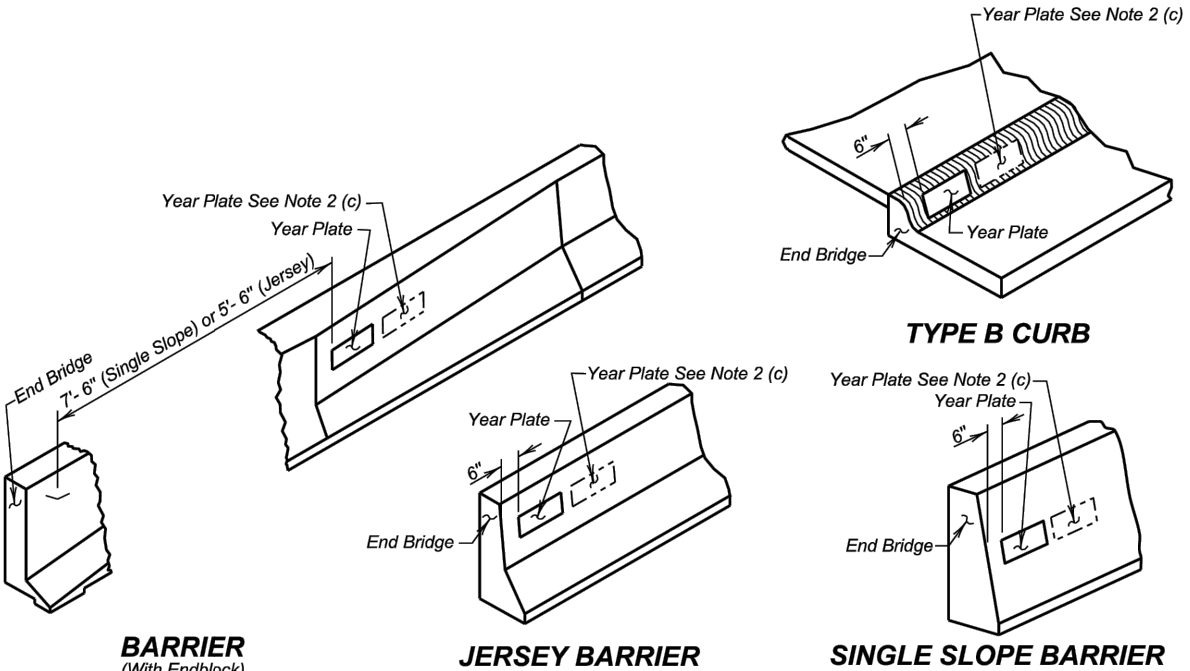
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8049(25)	37	45



YEAR PLATE DETAILS

GENERAL NOTES:

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



TYPE B CURB

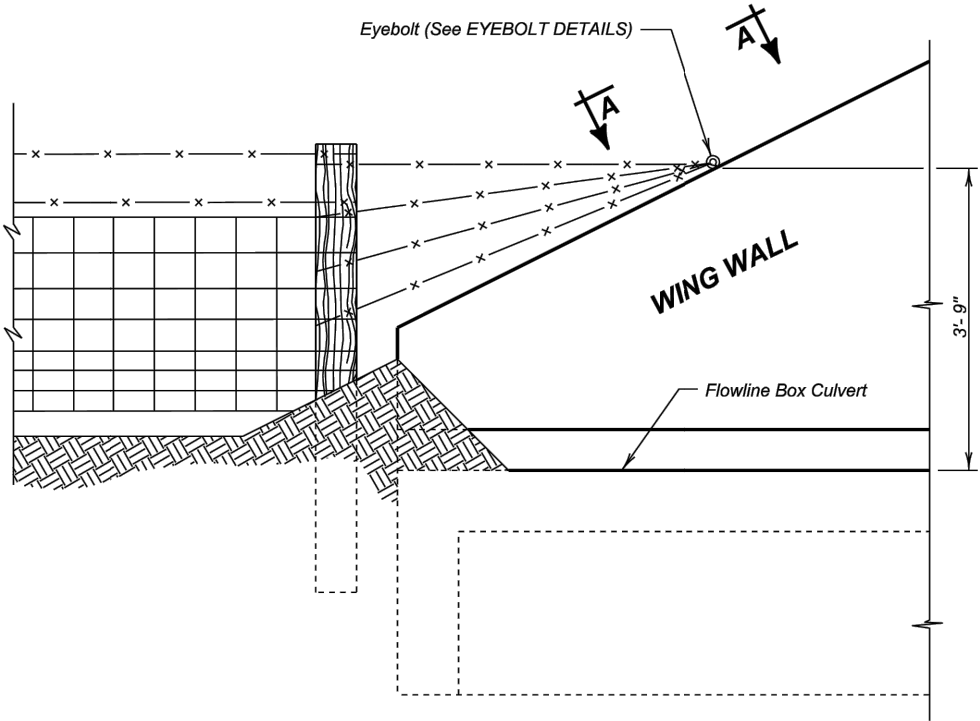
BARRIER
(With Endblock)

JERSEY BARRIER

SINGLE SLOPE BARRIER

January 22, 2021

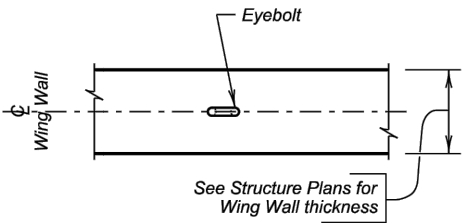
Published Date: 2026	S D D O T	YEAR PLATE DETAILS	PLATE NUMBER 460.02
			Sheet 1 Of 1



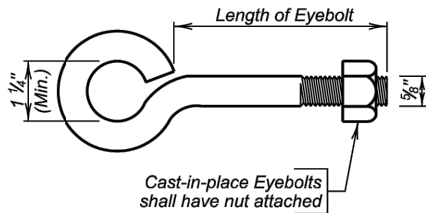
DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

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



VIEW A - A



EYEBOLT DETAILS

December 23, 2012

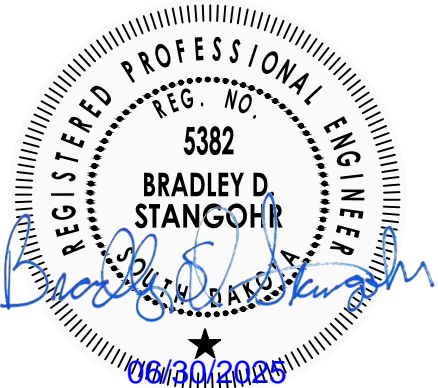
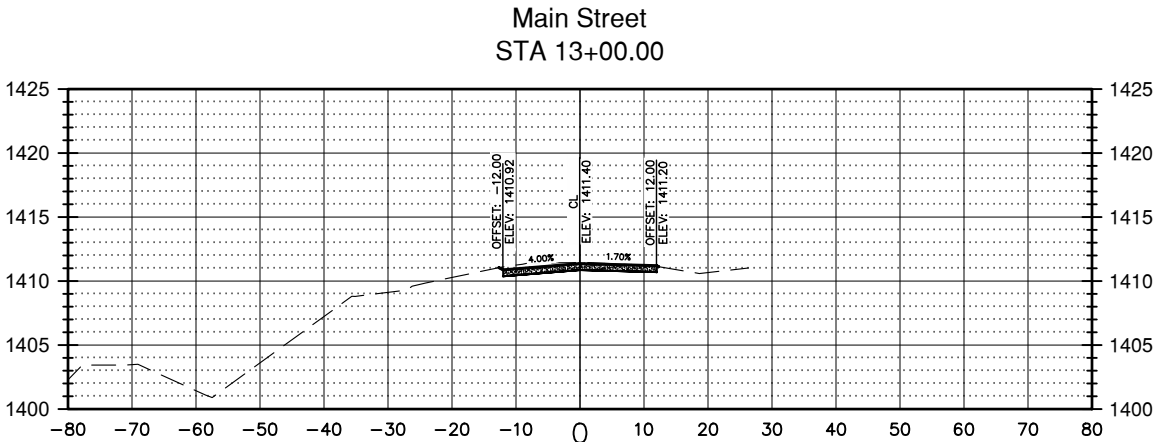
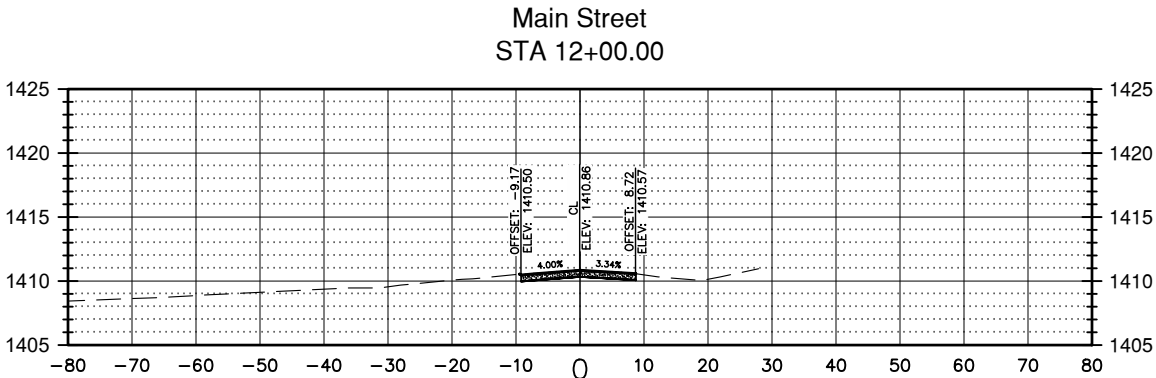
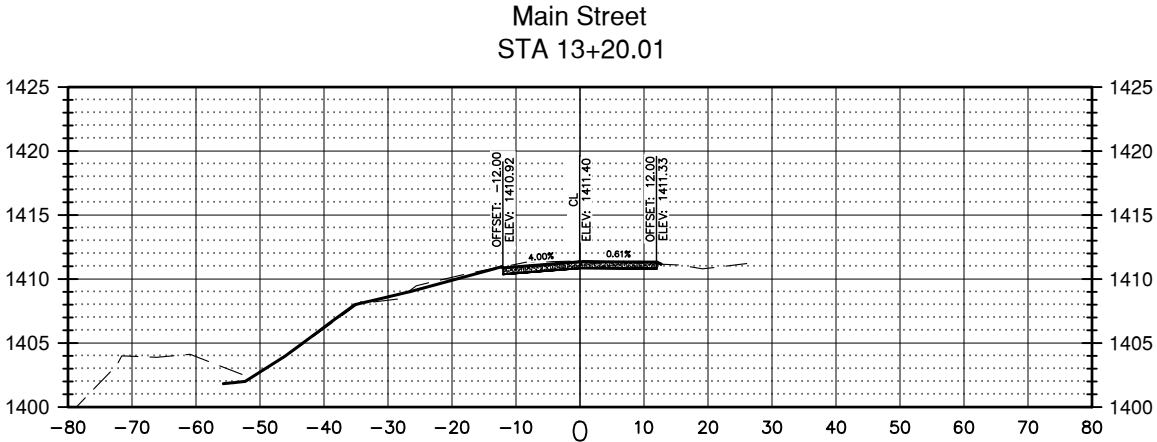
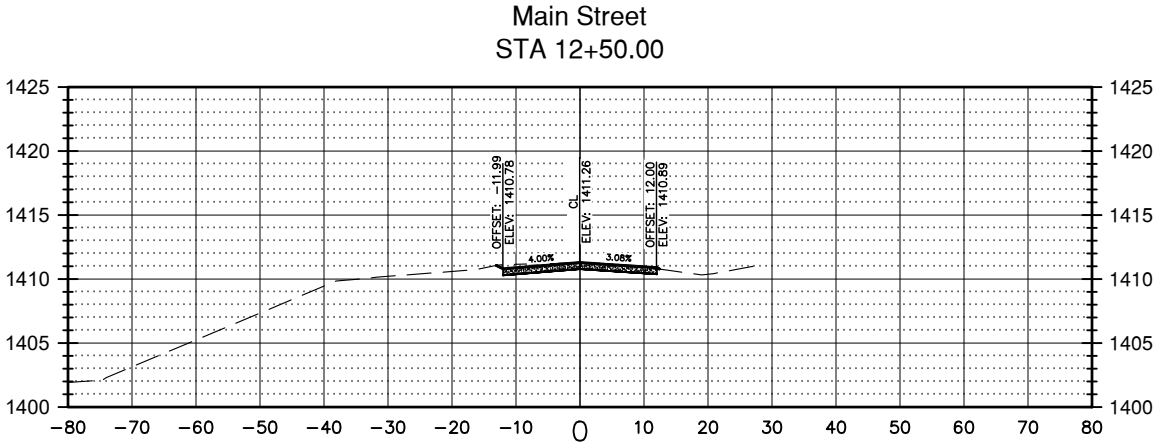
Published Date: 2026	S D D O T	FENCE ANCHORS FOR BOX CULVERT WING WALLS	PLATE NUMBER 620.16
			Sheet 1 of 1

2 - 13' X 5' BOX CULVERT
STR. NO. 49-063-018
APRIL 2024

CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

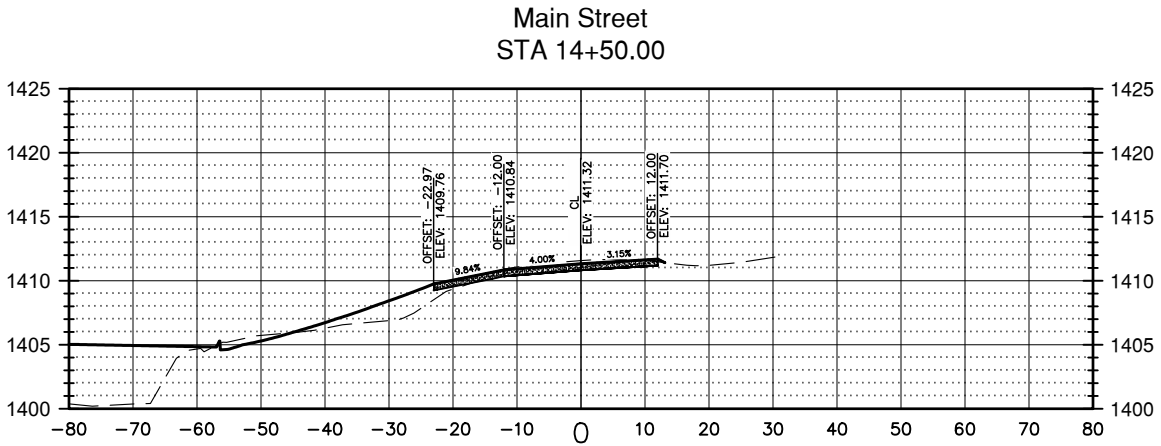
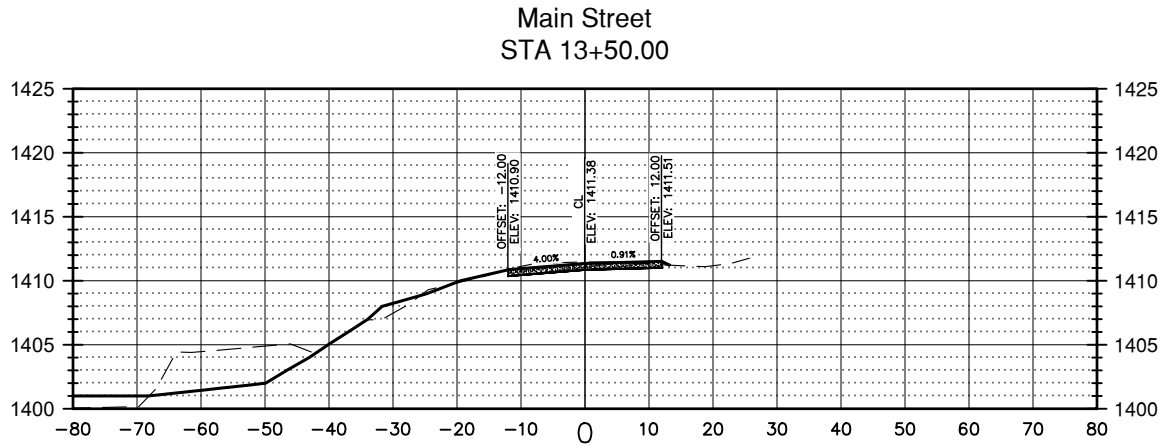
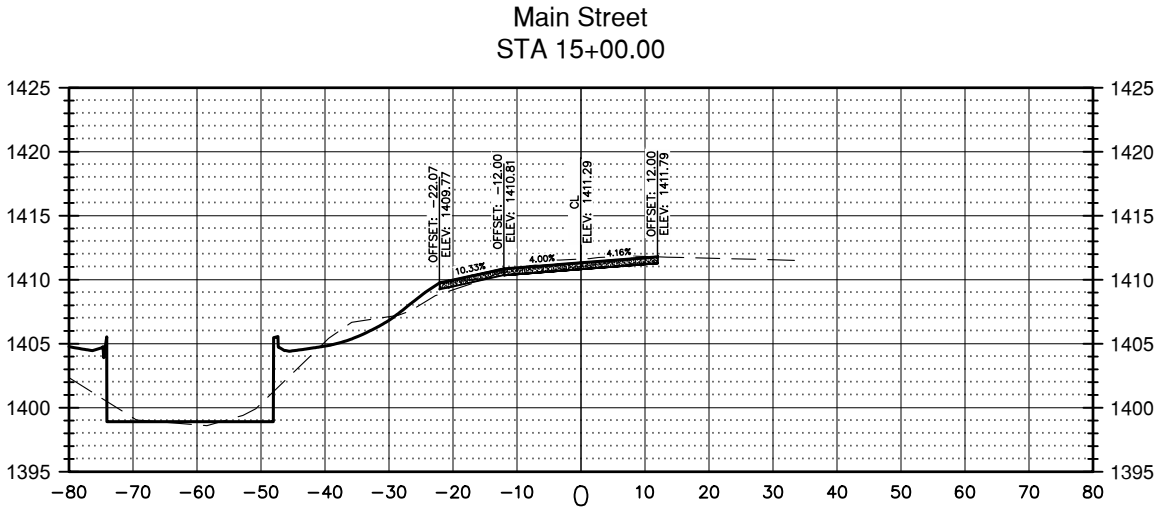
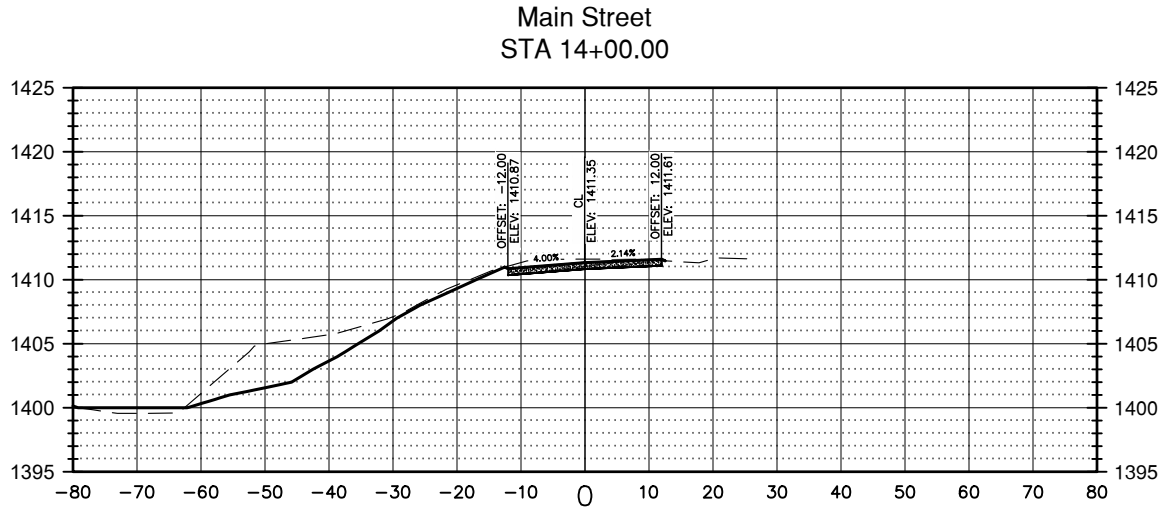
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	38	45



CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

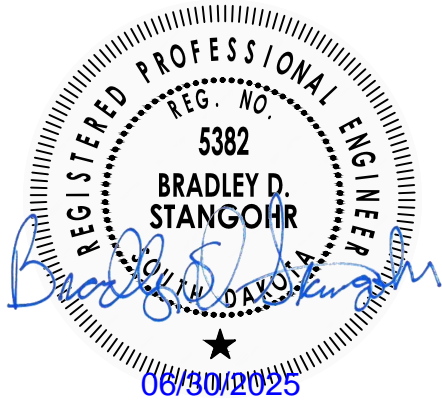
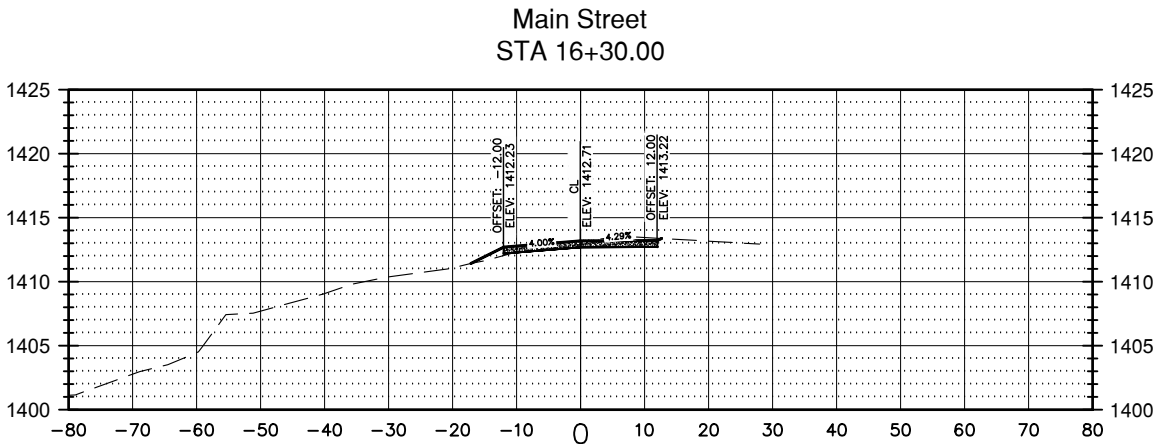
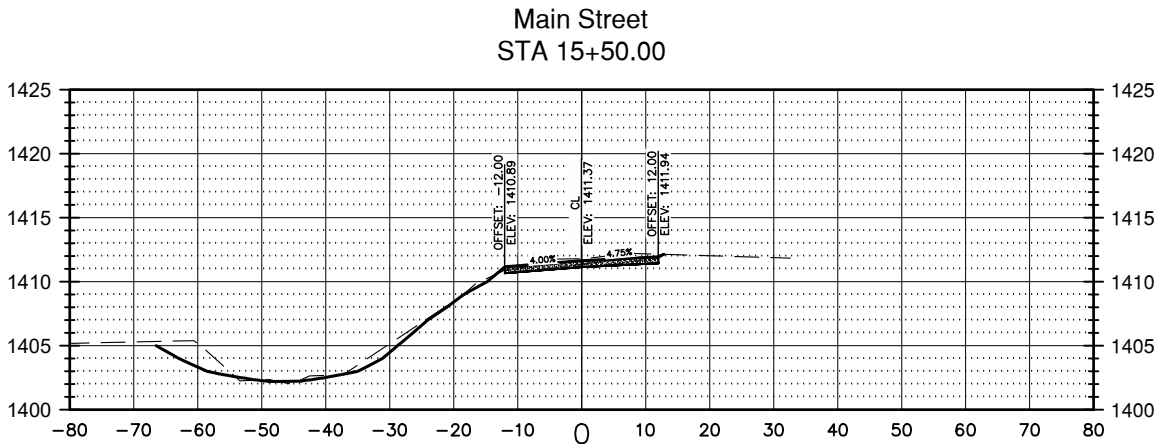
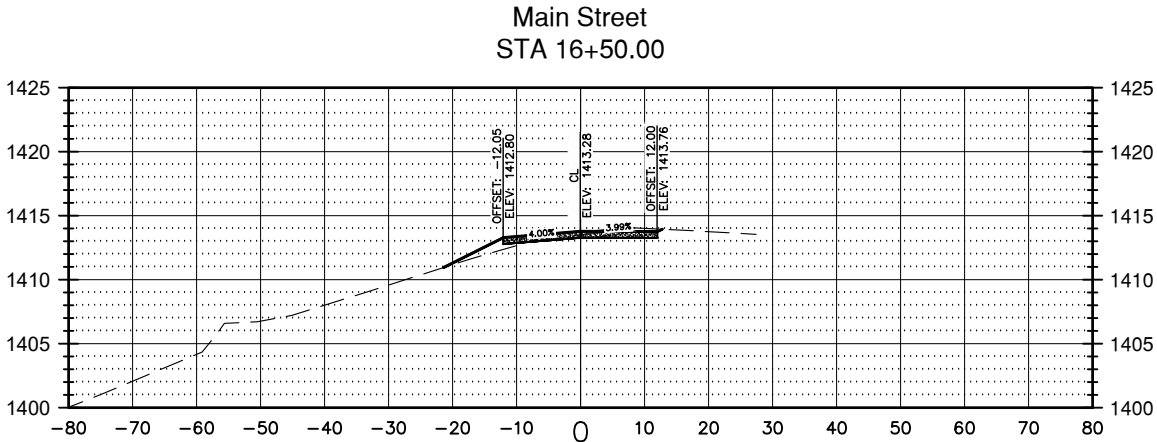
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	39	45



CROSS SECTIONS

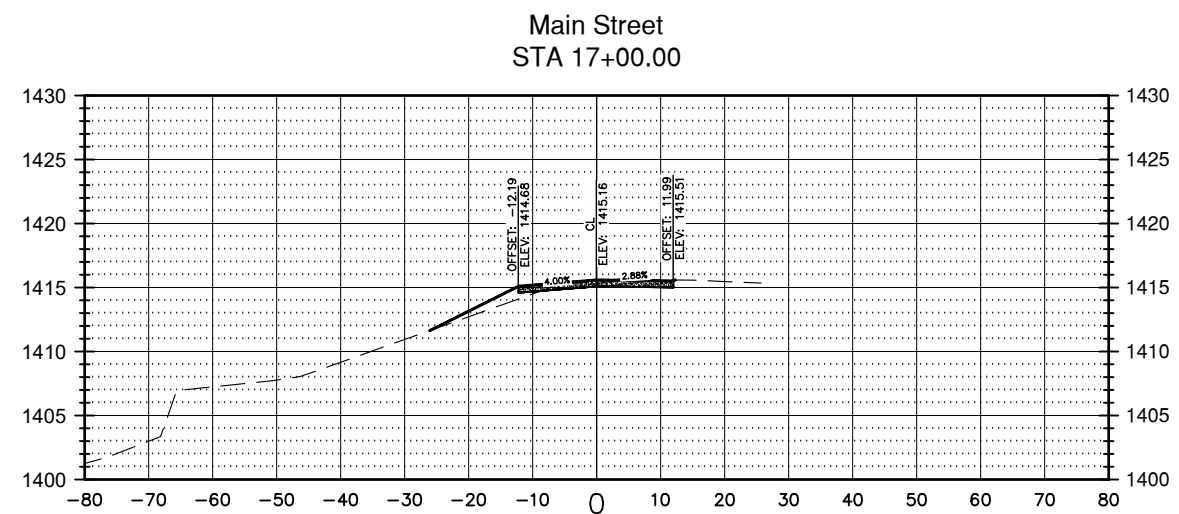
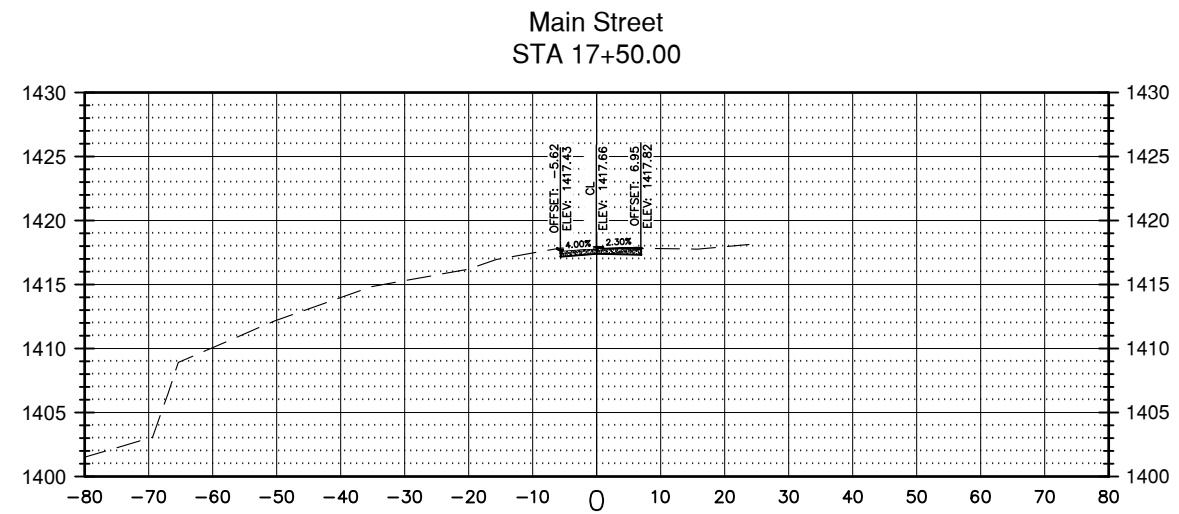
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	40	45



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	41	45



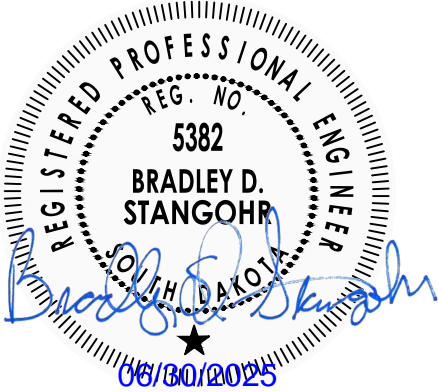
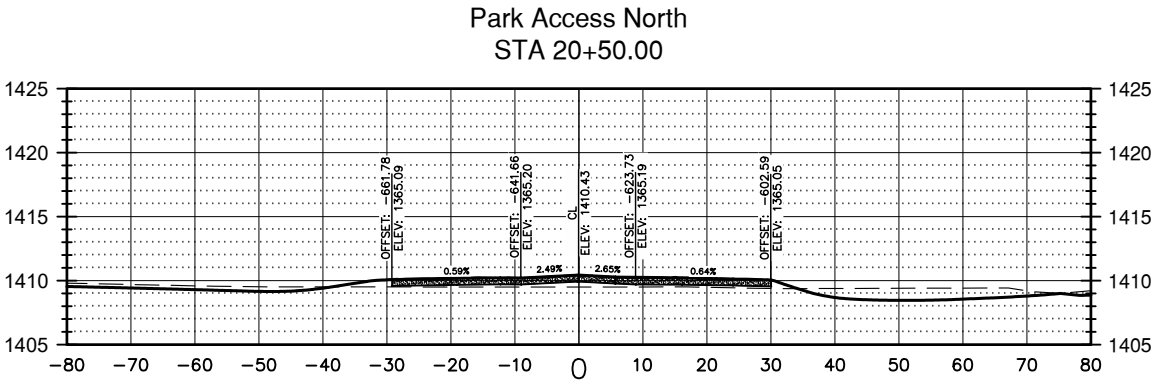
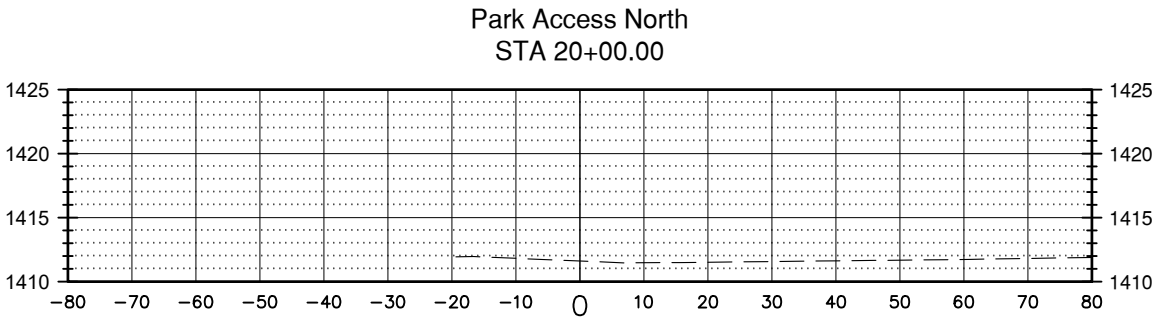
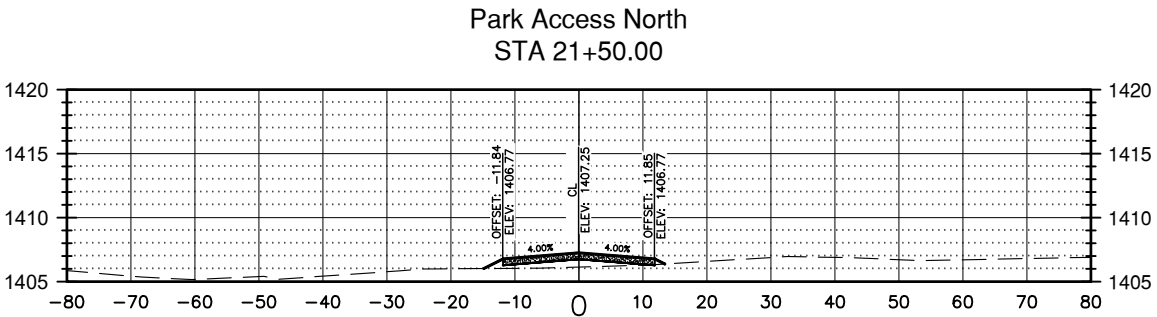
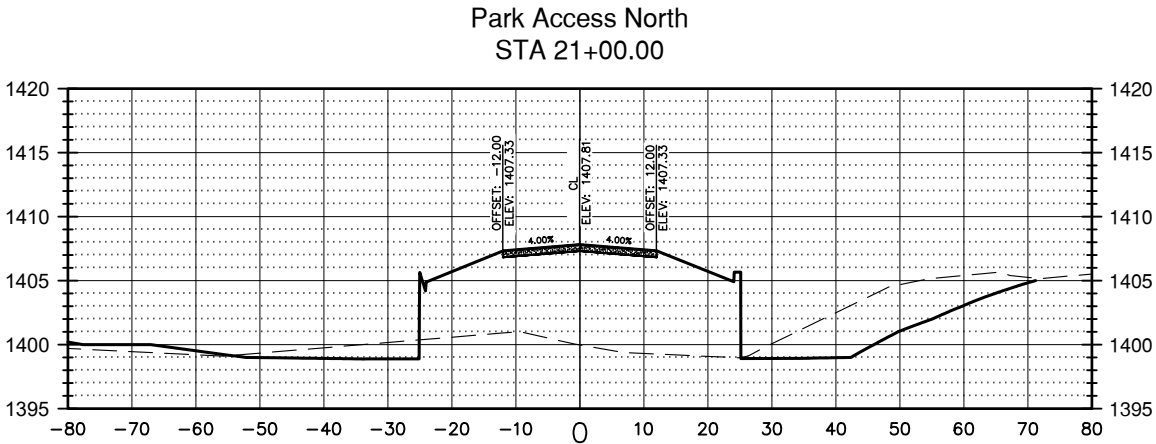
Ulteig

We listen. We solve.®

CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

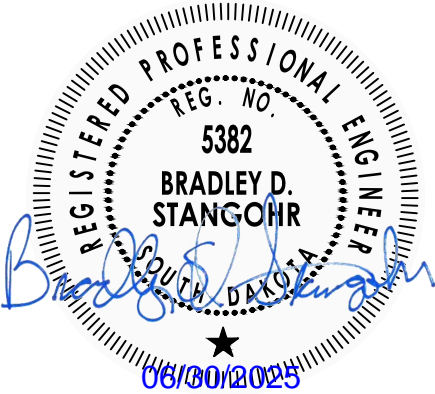
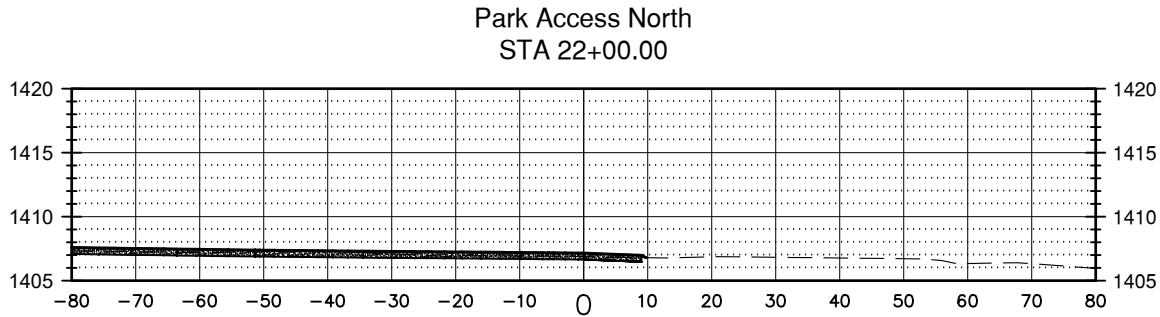
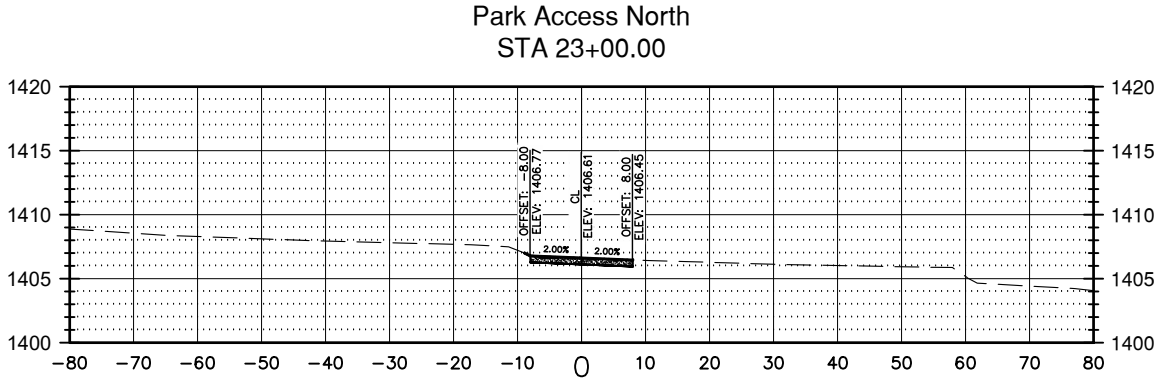
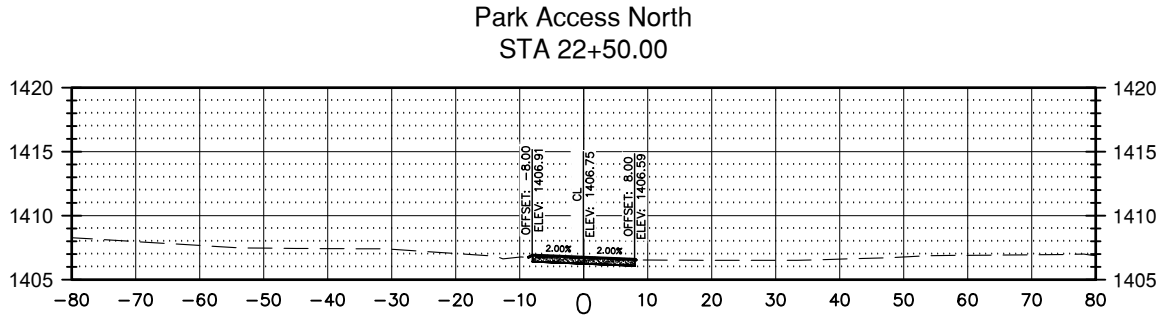
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	42	45



CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

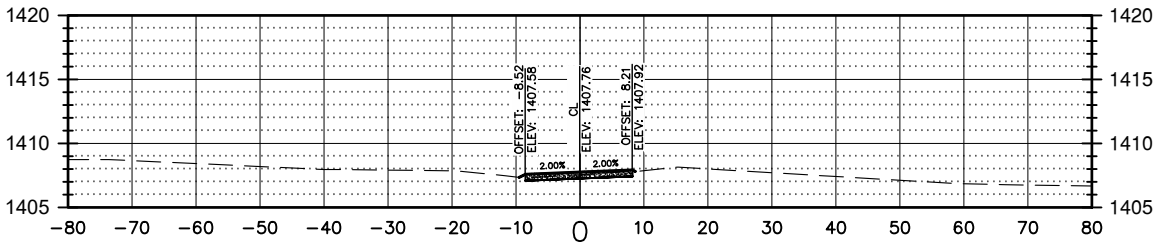
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	43	45



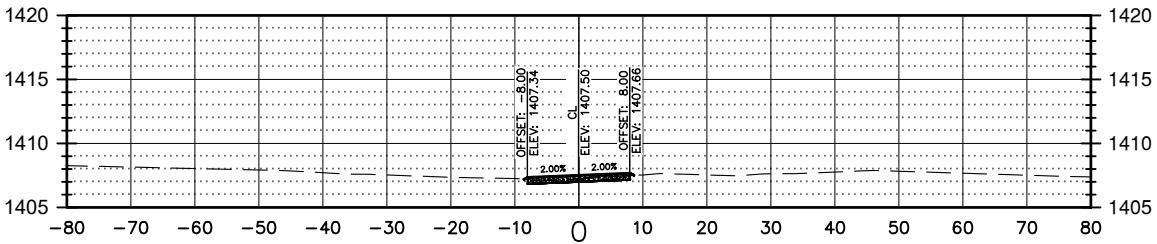
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	44	45

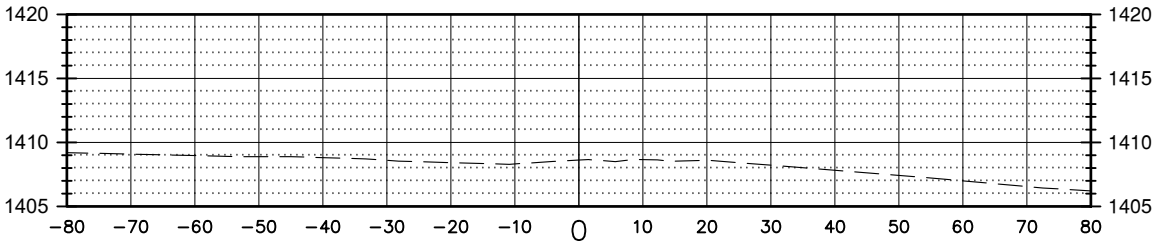
Park Access East
STA 31+00.00



Park Access East
STA 31+50.00



Park Access East
STA 30+50.00

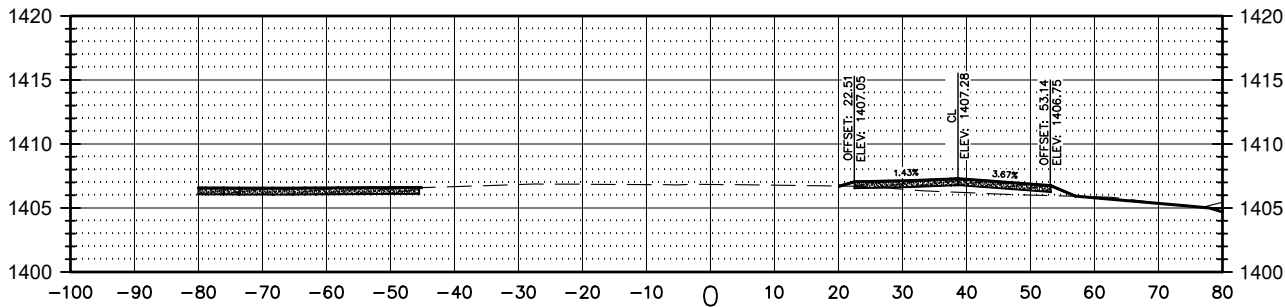


CROSS SECTIONS

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRO-B 8049(25)	45	45

Park Access East
STA 32+39.00



Park Access East
STA 32+00.00

