

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	1	45

Plotting Date: 08/10/2020

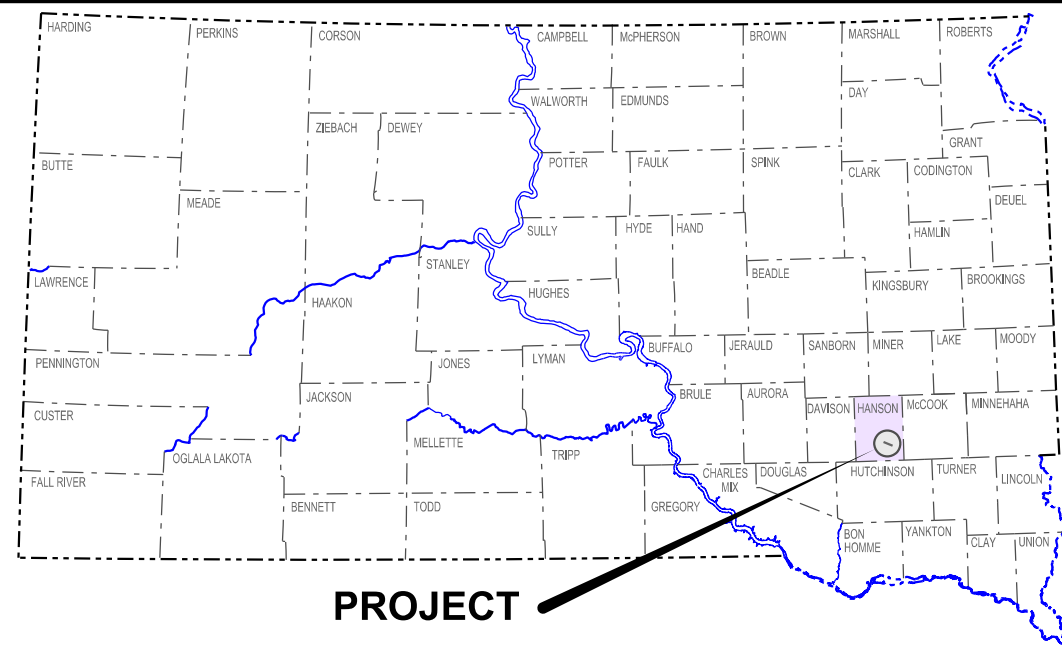
PLANS FOR PROPOSED
PROJECT ER-P 0262(09)360
SD HIGHWAY 262
HANSON COUNTY

ROW, GRADE RAISE, ASPHALT CONCRETE SURFACING,
RIPRAP, PAVEMENT MARKING & GUARDRAIL
PCN 083F

INDEX OF SHEETS

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PLOT SCALE - 1"=5600'

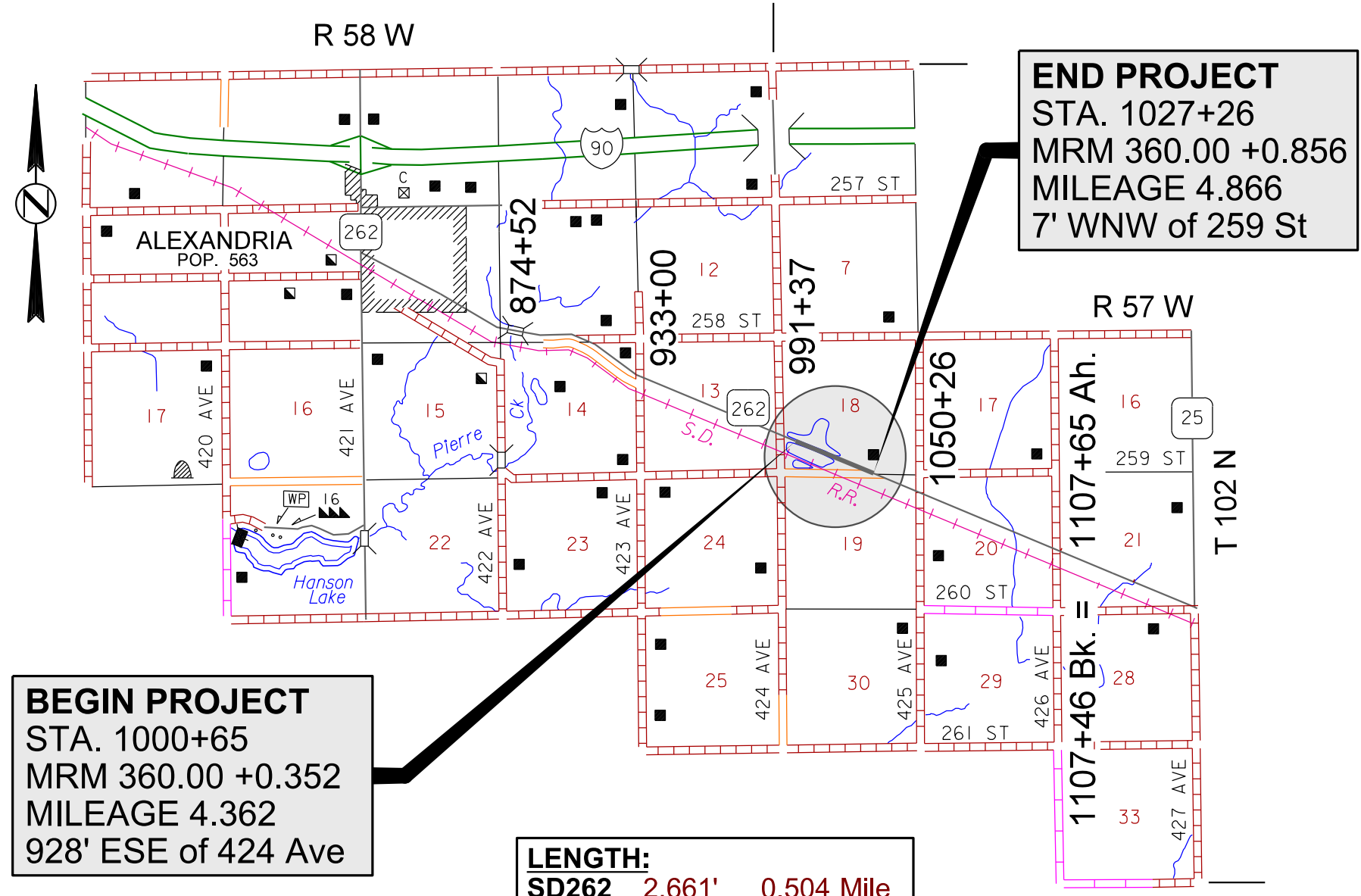


PROJECT

DESIGN DESIGNATION	
ADT(2019)	930
ADT(2039)	1,051
DHV	121
D	51%
T DHV	4.3%
T ADT	9.5%
V	65 MPH

STORM WATER PERMIT
Receiving Waters:
Water adjacent to roadway

Area Disturbed: 3.1 Acres
Total Project Area: 7.3 Acres
Latitude: 43.6333 (Google Maps)
Longitude: -97,7233 (Google Maps)



END PROJECT
STA. 1027+26
MRM 360.00 +0.856
MILEAGE 4.866
7' WNW of 259 St

BEGIN PROJECT
STA. 1000+65
MRM 360.00 +0.352
MILEAGE 4.362
928' ESE of 424 Ave

LENGTH:
SD262 2,661' 0.504 Mile

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ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	2	45

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 110E6006	Remove High Tension 4 Cable Guardrail for Reset	3,843	Ft
* 110E6016	Remove High Tension 4 Cable Guardrail Anchor Assembly for Reset	4	Each
110E7510	Remove Pipe End Section for Reset	1	Each
120E0010	Unclassified Excavation	2,854	CuYd
120E9000	Pit Run	68,939.0	Ton
* 230E0020	Contractor Furnished Topsoil	189	CuYd
* 230E0100	Remove and Replace Topsoil	Lump Sum	LS
260E1010	Base Course	8,549.0	Ton
* 320E0008	PG 64-34 Asphalt Binder	159.2	Ton
* 320E1050	Class E Asphalt Concrete	2,745.0	Ton
* 320E3000	Compaction Sample	4	Each
* 320E7008	Grind 8" Rumble Strip or Stripe in Asphalt Concrete	1.0	Mile
* 330E0010	MC-70 Asphalt for Prime	14.3	Ton
* 330E0100	SS-1h or CSS-1h Asphalt for Tack	6.4	Ton
* 330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	2.6	Ton
* 330E1000	Blotting Sand for Prime	35.0	Ton
* 330E2000	Sand for Flush Seal	45.0	Ton
450E3012	24" RCP Arch Class 2, Furnish	46	Ft
450E3020	24" RCP Arch, Install	46	Ft
450E9001	Reset Pipe End Section	1	Each
* 600E0200	Type II Field Laboratory	1	Each
* 629E0110	High Tension Cable Guardrail	3,843	Ft
* 629E0211	Reset High Tension 4 Cable Guardrail	3,843	Ft
* 629E0290	High Tension Cable Guardrail Anchor Assembly	4	Each
* 629E0295	Reset High Tension Cable Guardrail Anchor Assembly	4	Each
* 632E2220	Guardrail Delineator	78	Each
* 632E2510	Type 2 Object Marker Back to Back	4	Each
* 633E1200	High Build Waterborne Pavement Marking Paint, White	47	Gal
* 633E1205	High Build Waterborne Pavement Marking Paint, Yellow	22	Gal
* 634E0010	Flagging	300.0	Hour
* 634E0020	Pilot Car	150.0	Hour
* 634E0110	Traffic Control Signs	294.0	SqFt
* 634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
* 634E0630	Temporary Pavement Marking	1.6	Mile
700E0210	Class B Riprap	3,319.0	Ton
* 730E0202	Type B Permanent Seed Mixture	15	Lb
* 732E0100	Mulching	1.7	Ton
734E0151	9" Diameter Erosion Control Wattle	2,530	Ft

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
734E0602	Low Flow Silt Fence	200	Ft
734E0630	Floating Silt Curtain	3,500	Ft
831E0110	Type B Drainage Fabric	5,689	SqYd
831E0200	Woven Separator Fabric	10,819	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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	3	45

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. 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 Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

COMMITMENT A: WETLANDS

All efforts to avoid and minimize wetland impacts from the project have resulted in approximately 1.25 acres of wetlands (includes temporary and permanent) becoming impacted. Refer to the plans for location and boundaries of the impacted wetlands.

Table of Impacted Wetlands

Wetland No.	Station	Perm. Impact Left (Acres)	Perm. Impact Right (Acres)	Temp. Impact Left (Acres)	Temp. Impact Right (Acres)	Total Impact (Acres)
1	1004+00 to 1019+00	1.25	0.00	0.00	0.00	1.25

Action Taken/Required:

SDDOT will acquire 1.41 credits from the Jandl wetland mitigation bank site to mitigate permanent impacts. SDDOT will provide mitigation for the remaining 0.31 acres of wetland impact through the United States Fish and Wildlife Service wetland easement program.

Temporary impacts identified in the Table of Impacted Wetlands will not be mitigated as original contours and elevations will be re-established. Temporary work in wetlands will be in accordance with Section 7.21 D. of the Specifications.

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

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

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

Action Taken/Required:

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

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 waters within South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment to prevent and control the introduction and spread of invasive species into the project vicinity.

Action Taken/Required:

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

Additional information and mapping of Aquatic Invasive Species in South Dakota can be accessed at: <http://sdleastwanted.com/maps/default.aspx>.

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

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 water quality standards are not violated.

Action Taken/Required:

The Contractor is advised that the South Dakota Surface Water Quality Standards, administered by the South Dakota Department of Environment and Natural Resources (DENR), 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 DENR 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 3.0 of the permit. If any pollutants are suspected of being discharged, a sample must be taken for those parameters listed in section 2.2 of the permit.

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

Action Taken/Required:

If construction dewatering is required, the Contractor will obtain the General Permit for Temporary Discharge Activities from the DENR Surface Water Program, 605-773-3351.

<http://denr.sd.gov/des/sw/swqformsandpermits.aspx>

The Contractor will provide a copy of the approved permit to the Project Engineer prior to proceeding with any dewatering activities. The approved permit 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 DENR monthly. Additional information can be found at <http://denr.sd.gov/des/sw/WhatisaDMR.aspx>

ENVIRONMENTAL COMMITMENTS

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COMMITMENT E: STORM WATER

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

Action Taken/Required:

The DENR General Permit for Storm Water 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 DENR 15 days prior to project start in order to obtain coverage under the General Permit. Work can begin once the DENR 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 DENR 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 DENR.

The form can be found at:

<https://denr.sd.gov/des/sw/eforms/CGPAppendixCCA2018Fillable.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 Storm Water, Erosion, and Sediment Control Inspection Report Form DOT 298 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 of the site.

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

SDDOT:

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

DENR: <http://denr.sd.gov/des/sw/stormwater.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 Environment and Natural Resources.

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

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely 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 of time 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.

Cost 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: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical 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 of 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 will immediately cease, and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office 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.

Plotting Date: 08/10/2020

TYPICAL GRADE SHIFT & REMOVAL SECTION

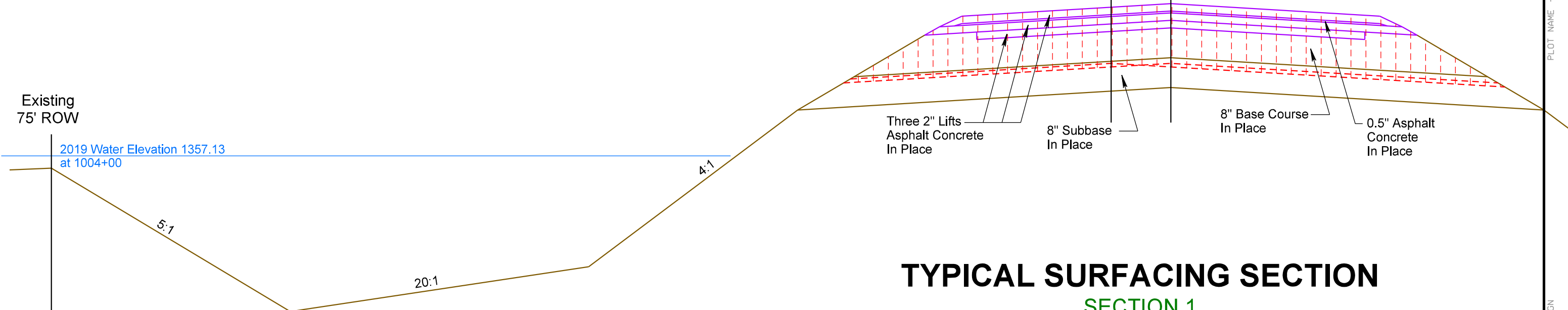
SECTION 1 ▲ 1000+65 to 1004+00

VERTICAL:
1000+65 to 1004+00 - Match Existing Profile

HORIZONTAL:
1000+65 to 1004+00
First 335' of 563.32' Curve Left R=14,100', 0.406°
0' to 4' Perpendicular Centerline Shift
(on the North Side of SD262)

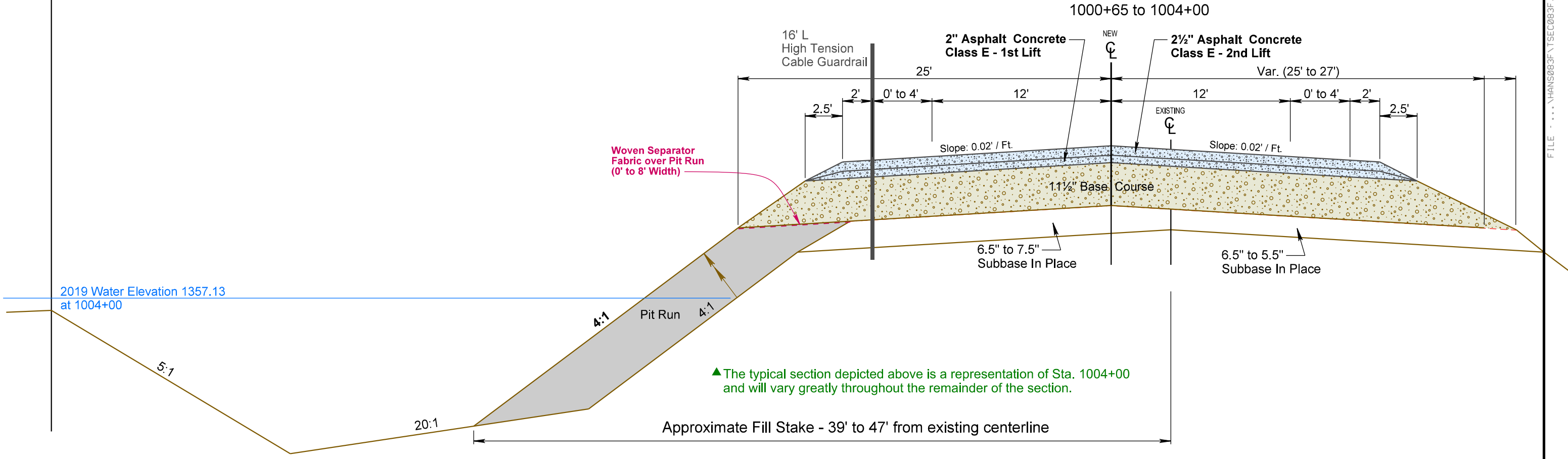
**Unclassified Excavation
Left of Existing Centerline
1000+65 to 1004+00:
Remove all 6.5"± Asphalt Concrete
Remove all 8"± Base Course
Remove Subbase as follows:
transition subbase removal
depth from 1.5" to 0.5"**

**Unclassified Excavation
Right of Existing Centerline
1000+65 to 1004+00:
Remove all 6.5"± Asphalt Concrete
Remove all 8"± Base Course
Remove Subbase as follows:
transition subbase removal
depth from 1.5" to 2.5"**



TYPICAL SURFACING SECTION

SECTION 1 1000+65 to 1004+00



▲ The typical section depicted above is a representation of Sta. 1004+00 and will vary greatly throughout the remainder of the section.

3.5' Average Ditch Depth (from Top of Subgrade to Toe)

PLOT SCALE - 1:6.5

PLOT NAME - 2

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TYPICAL GRADE SHIFT, RAISE & SURFACING SECTION

SECTION 2 ▲

1004+00 to 1008+66

VERTICAL:

1004+00 to 1008+66 - 0' to 3.78' Total Raise

HORIZONTAL:

1004+00 to 1006+28

Remaining 228.32' of 563.32' Curve Left R=14,100', 0.406°

4' to 11.25' Perpendicular Centerline Shift (on the North Side of SD262)

1006+28 to 1008+66

First 238.32' of 563.32' Curve Right R=14,100', 0.406°

11.25' to 18.75' Perpendicular Centerline Shift (on the North Side of SD262)

Existing 75' ROW

Extents of water over road in 2019: 1007+33 to 1019+86

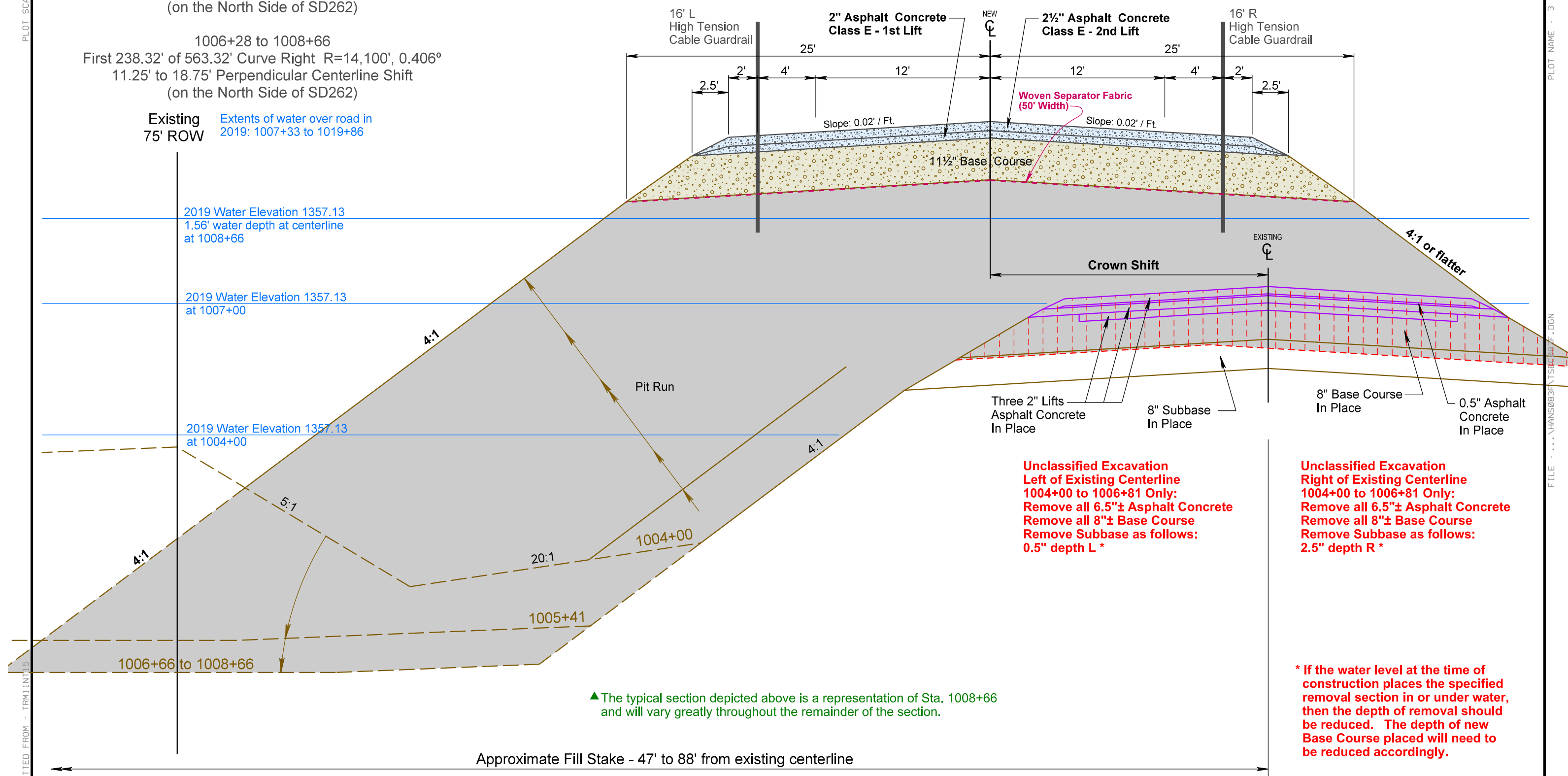
2019 Water Elevation 1357.13
1.56' water depth at centerline at 1008+66

2019 Water Elevation 1357.13
at 1007+00

2019 Water Elevation 1357.13
at 1004+00

PLOT SCALE - 1:6.5

PLOT NAME - 3



▲ The typical section depicted above is a representation of Sta. 1008+66 and will vary greatly throughout the remainder of the section.

Approximate Fill Stake - 47' to 88' from existing centerline

8' Average Ditch Depth (from Top of Subgrade to Toe)

* If the water level at the time of construction places the specified removal section in or under water, then the depth of removal should be reduced. The depth of new Base Course placed will need to be reduced accordingly.

TYPICAL GRADE SHIFT, RAISE & SURFACING SECTION

SECTION 3 ▲

1008+66 to 1016+00

VERTICAL:
 1008+66 to 1010+66 - 3.78' to 5' Total Raise
 1010+66 to 1016+00 - 5' Total Raise

HORIZONTAL:
 1008+66 to 1011+91
 Remaining 325' of 563.32' Curve Right R=14,100', 0.406°
 18.75' to 22.5' Perpendicular Centerline Shift
 (on the North Side of SD262)

1011+91 to 1016+00
 22.5' Perpendicular Centerline Shift
 (on the North Side of SD262)

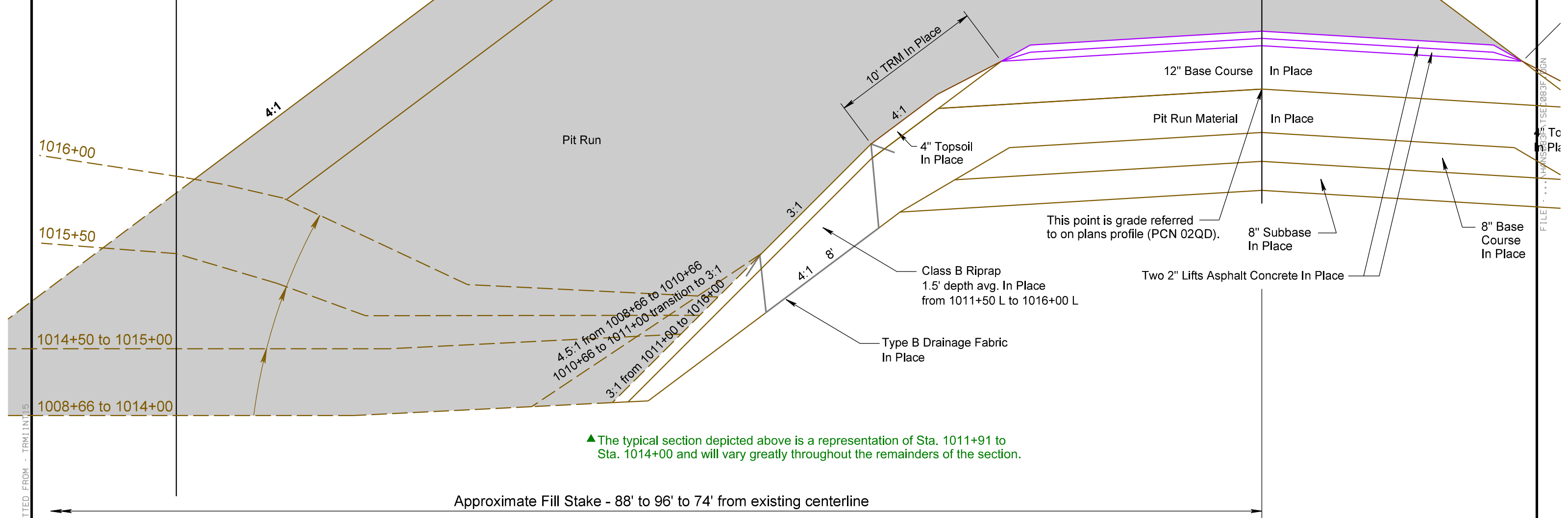
Existing 75' ROW
 Extents of water over road in 2019: 1007+33 to 1019+86

2019 Water Elevation 1357.13
 2.78' water depth at centerline from 1010+67 to 1016+00

2019 Water Elevation 1357.13
 1.56' water depth at centerline at 1008+66

PLOT SCALE - 1:6.5

PLOT NAME - 4



▲ The typical section depicted above is a representation of Sta. 1011+91 to Sta. 1014+00 and will vary greatly throughout the remainders of the section.

Approximate Fill Stake - 88' to 96' to 74' from existing centerline

5.7' Average Ditch Depth (from Top of Subgrade to Toe)

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TYPICAL GRADE SHIFT, RAISE & SURFACING SECTION

SECTION 4 ▲

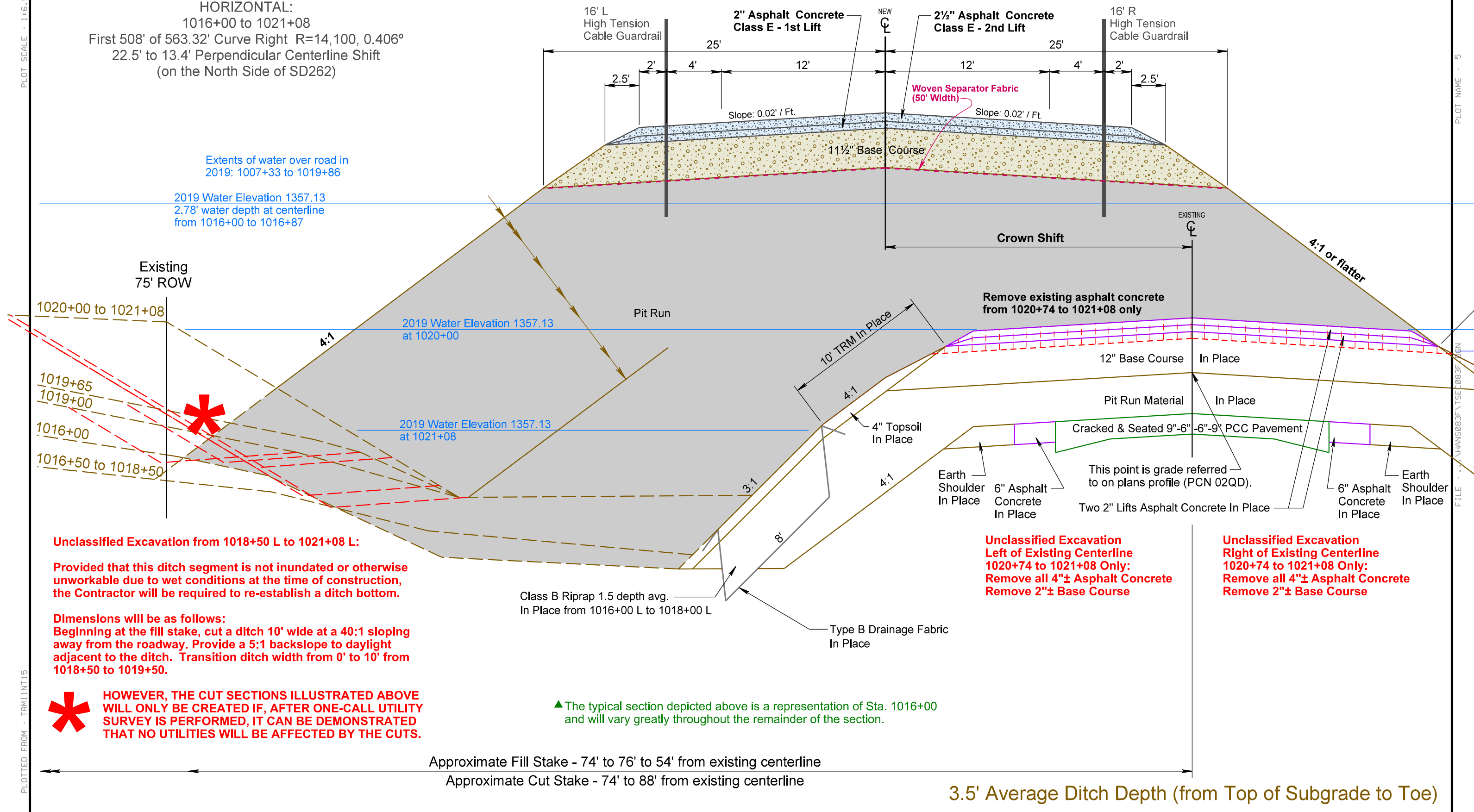
1016+00 to 1021+08

VERTICAL:
 1016+00 to 1016+87 - 5' Total Raise
 1016+87 to 1021+08 - 5' to 1.1' Total Raise

HORIZONTAL:
 1016+00 to 1021+08
 First 508' of 563.32' Curve Right R=14,100, 0.406°
 22.5' to 13.4' Perpendicular Centerline Shift
 (on the North Side of SD262)

PLOT SCALE - 1:6.5

PLOT NAME - 5



Extents of water over road in 2019: 1007+33 to 1019+86
 2019 Water Elevation 1357.13
 2.78' water depth at centerline from 1016+00 to 1016+87

2019 Water Elevation 1357.13 at 1020+00
 2019 Water Elevation 1357.13 at 1021+08

Unclassified Excavation from 1018+50 L to 1021+08 L:
 Provided that this ditch segment is not inundated or otherwise unworkable due to wet conditions at the time of construction, the Contractor will be required to re-establish a ditch bottom.
 Dimensions will be as follows:
 Beginning at the fill stake, cut a ditch 10' wide at a 40:1 sloping away from the roadway. Provide a 5:1 backslope to daylight adjacent to the ditch. Transition ditch width from 0' to 10' from 1018+50 to 1019+50.

Unclassified Excavation Left of Existing Centerline 1020+74 to 1021+08 Only:
 Remove all 4"± Asphalt Concrete
 Remove 2"± Base Course

Unclassified Excavation Right of Existing Centerline 1020+74 to 1021+08 Only:
 Remove all 4"± Asphalt Concrete
 Remove 2"± Base Course

▲ The typical section depicted above is a representation of Sta. 1016+00 and will vary greatly throughout the remainder of the section.

Approximate Fill Stake - 74' to 76' to 54' from existing centerline
 Approximate Cut Stake - 74' to 88' from existing centerline

3.5' Average Ditch Depth (from Top of Subgrade to Toe)

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Plotting Date: 08/10/2020

TYPICAL GRADE SHIFT, RAISE & REMOVAL SECTION

SECTION 5 ▲

1021+08 to 1027+26

**Unclassified Excavation
Right of Existing Centerline**

**1021+08 to 1027+26:
Remove all 4.5"± ML Asphalt Concrete
Remove all 6"± Earth Shoulder & AC
Remove all 9"-6"-6"-9" PCC Pavement
Remove 7.4" Subgrade ****

**** 1022+60 to 1027+26 Only:
transition subgrade removal
depth from 7.4" to 5.5"**

**Unclassified Excavation
Left of Existing Centerline**

**1021+08 to 1027+26:
Remove all 4.5"± ML Asphalt Concrete
Remove all 6"± Earth Shoulder & AC
Remove all 9"-6"-6"-9" PCC Pavement
Remove 3.7" Subgrade ***

*** 1022+60 to 1027+26 Only:
transition subgrade removal
depth from 3.7" to 5.5"**

VERTICAL:
1021+08 to 1022+60 - 1.1' to 0' Total Raise
1022+60 to 1027+26 - Match Existing Profile

HORIZONTAL:
1021+08 to 1021+63
Remaining 55.32' of 563.32' Curve Right R=14,100', 0.406°

1021+69 13.4' to 11.25' Perpendicular Centerline Shift
1021+50 (on the North Side of SD262)

1021+08 1021+63 to 1027+26
563.32' Curve Left R=14,100', 0.406°
11.25' to 0' Perpendicular Centerline Shift
1022+60 (on the North Side of SD262)

1023+75 to 1027+26

2019 Water Elevation 1357.13
at 1021+08

Existing 75' ROW
1021+08 to 1021+69

**Unclassified Excavation
from 1021+08 L to 1024+00 L:**
**Ditch dimensions will be as follows:
Beginning at the fill stake, cut a
ditch 10' wide at a 40:1 sloping
away from the roadway. Provide
a 5:1 backslope to daylight
adjacent to the ditch. Transition
ditch width from 10' to existing
width from 1023+00 to 1024+00.**

Existing 50' ROW
(1021+69 to 1027+26)

*** HOWEVER, THE CUT SECTIONS
ILLUSTRATED BELOW WILL ONLY
BE CREATED IF, AFTER ONE-CALL
UTILITY SURVEY IS PERFORMED,
IT CAN BE DEMONSTRATED THAT
NO UTILITIES WILL BE AFFECTED
BY THE CUTS.**

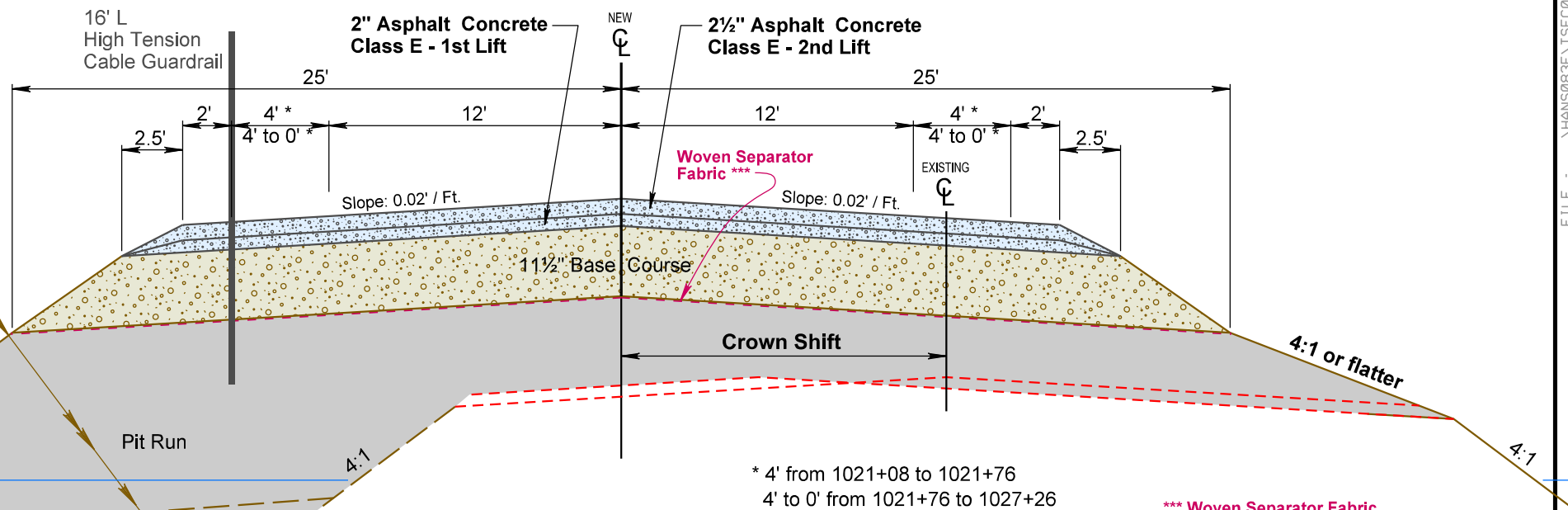
1021+69
1021+50
1021+08
1022+60
1023+75 to 1027+26

2019 Water Elevation 1357.13
at 1021+08

TYPICAL SURFACING SECTION

SECTION 5

1021+08 to 1027+26



* 4' from 1021+08 to 1021+76
4' to 0' from 1021+76 to 1027+26

*** Woven Separator Fabric
1021+08 to 1022+60 - 50' width
1022+60 to 1027+26 - 13' to 0' width

▲ The typical section depicted above is a representation of Sta. 1021+08 and will vary greatly throughout the remainder of the section.

Approximate Fill Stake - 55' to 25' from existing centerline
Approximate Cut Stake - 88' to 47' from existing centerline

3' Average Ditch Depth (from Top of Subgrade to Toe)

PLOT SCALE - 1:6.5

PLOTTED FROM - TRMLINT15

PLOT NAME - 6

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TYPICAL RIPRAP PLACEMENT SECTION

1004+00 L to 1020+00 L

High surface water elevation recorded in September 2019 is 2.22' lower than Top of new AC at centerline from 1006+00 to 1018+00

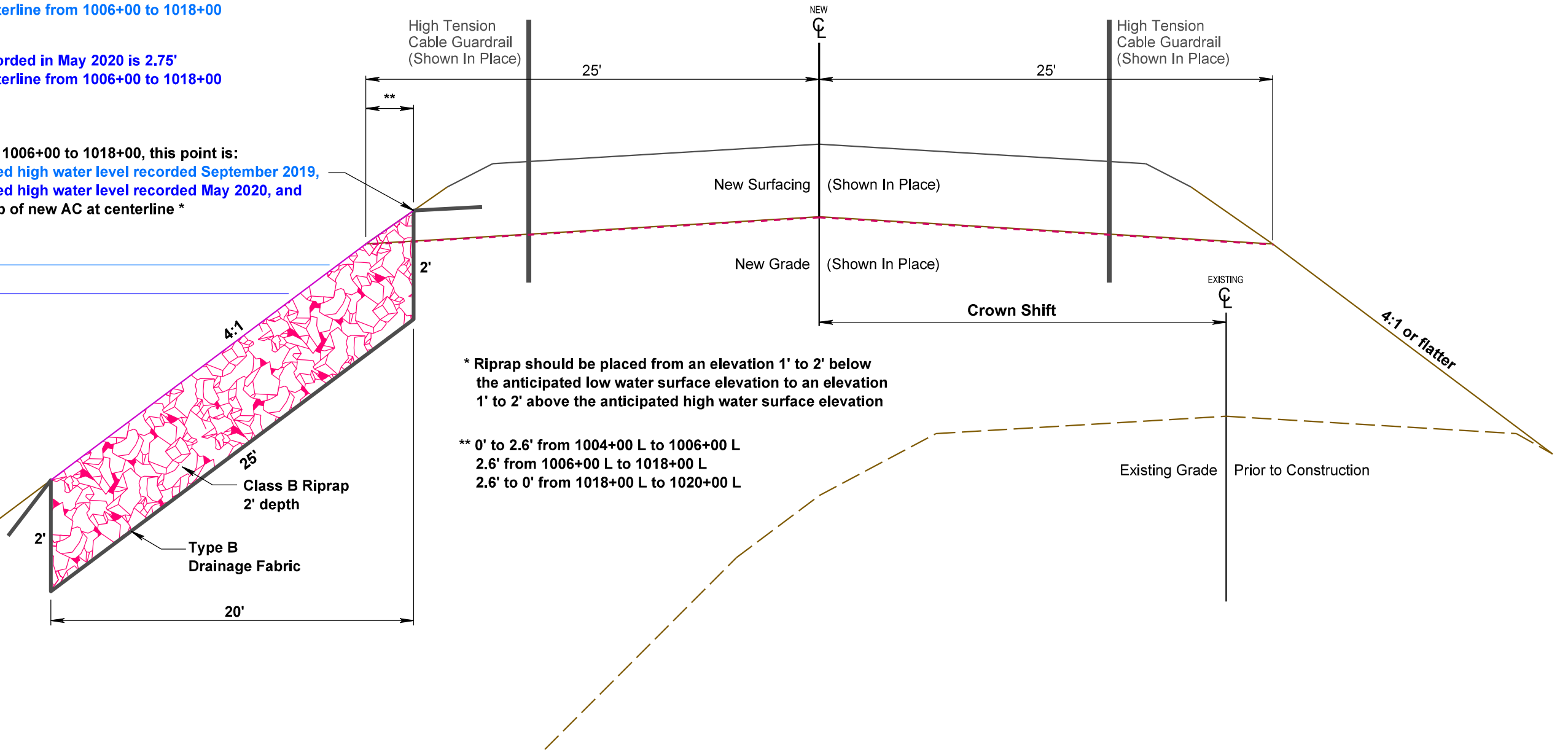
High surface water elevation recorded in May 2020 is 2.75' lower than Top of new AC at centerline from 1006+00 to 1018+00

As depicted here, from 1006+00 to 1018+00, this point is:
 1.00' above the observed high water level recorded September 2019,
 1.53' above the observed high water level recorded May 2020, and
 1.22' lower than the Top of new AC at centerline *

2019 Water Elevation 1357.13

2020 Water Elevation 1356.60

2010 Water Elevation 1349.73



* Riprap should be placed from an elevation 1' to 2' below the anticipated low water surface elevation to an elevation 1' to 2' above the anticipated high water surface elevation

** 0' to 2.6' from 1004+00 L to 1006+00 L
 2.6' from 1006+00 L to 1018+00 L
 2.6' to 0' from 1018+00 L to 1020+00 L

RATES OF MATERIALS

Section 1
1000+65.00 to 1004+00.00

Asphaltic Quantities for Section 1 are included in the Table of Materials Quantities

Section 2 1004+00.00 to 1008+66.00
Section 3 1008+66.00 to 1010+66.00
Section 3 1010+66.00 to 1016+00.00
Section 4 1016+00.00 to 1016+87.00
Section 4 1016+87.00 to 1021+08.00
Section 5 1021+08.00 to 1022+60.00

The Estimate of quantities is based on the following quantities of materials per station.

BASE COURSE

Crushed Aggregate 322.99 Tons
 Water for Granular Material 3.1 MGals

2" CLASS E ASPHALT CONCRETE 1ST LIFT

Crushed Aggregate 44.73 Tons
 PG 64-34 Asphalt Binder 2.75 Tons

TOTAL: 47.48 Tons

The exact proportions of these materials will be determined on construction.

MC-70 Asphalt for Prime at the rate of 0.55 ton applied 42 feet wide (Rate = 0.3 gallon per square yard).

Blotting Sand for Prime at the rate of 1.33 tons applied 24 feet wide (Rate = 10 pounds per square yard).

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.12 ton applied 42 feet wide (Rate = 0.06 gallon per square yard).

2.5" CLASS E ASPHALT CONCRETE 2ND LIFT

Crushed Aggregate 55.91 Tons
 PG 64-34 Asphalt Binder 3.44 Tons

TOTAL: 59.35 Tons

The exact proportions of these materials will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.12 ton applied 42 feet wide (Rate = 0.06 gallon per square yard).

FLUSH SEAL

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.1 ton applied 41 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 1.82 tons applied 41 feet wide (Rate = 8 pounds per square yard).

Section 5
1022+60.00 to 1027+26.00

Asphaltic Quantities for Section 5 from 1022+00 to 1027+26 are included in the Table of Materials Quantities

TABLE OF PROJECT STATIONING

SECTION	STATION TO	STATION	DESCRIPTION	LENGTH	SECTION LENGTHS
1	1000+65.00 to	1004+00.00	Grade Shift	335.00'	335.00'
2	1004+00.00 to	1008+66.00	Grade Shift & Raise	466.00'	466.00'
3	1008+66.00 to	1010+66.00	Grade Shift & Raise	200.00'	734.00'
	1010+66.00 to	1016+00.00	Grade Shift & Raise	534.00'	
4	1016+00.00 to	1016+87.00	Grade Shift & Raise	87.00'	508.00'
	1016+87.00 to	1021+08.00	Grade Shift & Raise	421.00'	
5	1021+08.00 to	1022+60.00	Grade Shift & Raise	152.00'	618.00'
	1022+60.00 to	1027+26.00	Grade Shift	466.00'	
TOTAL:					2661.00'

TABLE OF MATERIALS QUANTITIES

	UNCL. EXC.	PIT RUN	BASE COURSE	CLASS E ASPHALT CONCRETE 1ST LIFT	PG 64-34 ASPHALT BINDER 1ST LIFT	CLASS E ASPHALT CONCRETE 2ND LIFT	PG 64-34 ASPHALT BINDER 2ND LIFT	MC-70 ASPH. FOR PRIME	BLOTTING SAND FOR PRIME	SS-1h/ CSS-1h ASPH. FOR TACK	SS-1h/ CSS-1h ASPH. FOR FLUSH SEAL	SAND FOR FLUSH SEAL
1	1141	482	1034	143	8.3	178	10.3	1.7	4	0.8	0.3	5
2	-	8441	1505	221	12.8	277	16.1	2.6	6	1.2	0.5	8
3	-	43542	2371	349	20.2	436	25.3	4.0	10	1.8	0.7	13
4	238	15484	1641	241	14.0	301	17.5	2.8	7	1.2	0.5	9
5	1475	990	1918	266	15.4	333	19.3	3.2	8	1.4	0.6	10
Totals:	2854	68939	8469	1220	70.7	1525	88.5	14.3	35	6.4	2.6	45
Addit. Quantities:	-	-	80	-	-	-	-	-	-	-	-	-
Grand Totals:	2854	68939	8549	1220	70.7	1525	88.5	14.3	35	6.4	2.6	45

SUMMARY OF ASPHALT CONCRETE

	CLASS E ASPHALT CONCRETE 1ST LIFT COMPACTION WITH SPECIFIED DENSITY TONS	CLASS E ASPHALT CONCRETE 1ST LIFT COMPACTION WITHOUT SPECIFIED DENSITY TONS	CLASS E ASPHALT CONCRETE 2ND LIFT COMPACTION WITH SPECIFIED DENSITY TONS	CLASS E ASPHALT CONCRETE 2ND LIFT COMPACTION WITHOUT SPECIFIED DENSITY TONS
Section 1				
24' Finished Roadway Surface	99	-	124	-
Shoulders	-	44	-	54
Section 2				
24' Finished Roadway Surface	138	-	172	-
Shoulders	-	83	-	105
Section 3				
24' Finished Roadway Surface	217	-	272	-
Shoulders	-	132	-	164
Section 4				
24' Finished Roadway Surface	150	-	188	-
Shoulders	-	91	-	113
Section 5				
24' Finished Roadway Surface	183	-	229	-
Shoulders	-	83	-	104
Totals:	787	433	985	540

1772 TONS ASPHALT CONCRETE COMPACTION WITH SPECIFIED DENSITY
973 TONS ASPHALT CONCRETE COMPACTION WITHOUT SPECIFIED DENSITY
2745 TONS TOTAL

TABLE OF GUARDRAIL

LOCATION	LANE-SHOULDER	REMOVE HIGH TENSION CABLE GUARDRAIL FOR RESET	REMOVE HIGH TENSION CABLE GUARDRAIL ANCHOR ASSEMBLY FOR RESET	HIGH TENSION CABLE GUARDRAIL	RESET HIGH TENSION CABLE GUARDRAIL	HIGH TENSION CABLE GUARDRAIL ANCHOR ASSEMBLY	RESET HIGH TENSION CABLE GUARDRAIL ANCHOR ASSEMBLY
		Ft	Each	Ft	Ft	Each	Each
STA. 1000+65 L to	1022+00 L	2135	2	2135	2135	2	2
WBL Shoulder							
STA. 1004+00 R to	1021+08 R	1708	2	1708	1708	2	2
EBL Shoulder							
TOTALS:		3843	4	3843	3843	4	4

TABLE OF GUARDRAIL DELINEATORS & OBJECT MARKERS

LOCATION	BRIDGE CORNER	LANE-SHOULDER	TYPE 2 OBJECT MARKER BACK TO BACK	TYPE 2 OBJECT MARKER	GUARDRAIL DELINEATOR			
			M #	M #	BEAM		CABLE	
					B #	C #	Yellow	White
STA. 1000+65 L to	1022+00 L		2					43
STA. 1004+00 R to	1021+08 R		2					35
TOTALS			4	-	-	-	-	78

- For KEY, Refer to Standard Plate 632.40 - Sheet 1 of 4.

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ROW LAYOUT

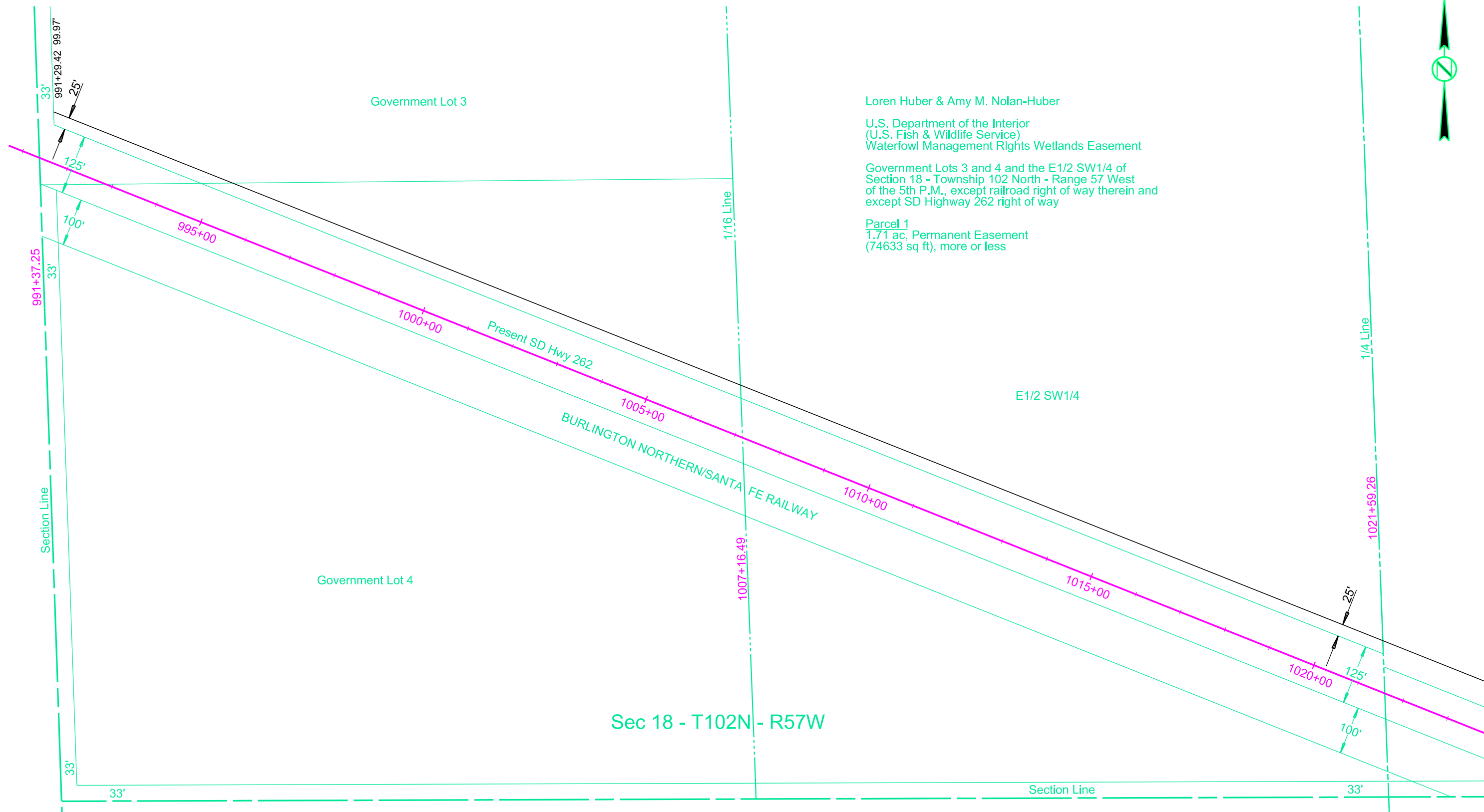
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	13	45

Plotting Date: 07/23/2020



Plot Scale - 1:200

Plotted From - tpr13315



Loren Huber & Amy M. Nolan-Huber
 U.S. Department of the Interior
 (U.S. Fish & Wildlife Service)
 Waterfowl Management Rights Wetlands Easement
 Government Lots 3 and 4 and the E1/2 SW1/4 of
 Section 18 - Township 102 North - Range 57 West
 of the 5th P.M., except railroad right of way therein and
 except SD Highway 262 right of way
 Parcel 1
 1.71 ac, Permanent Easement
 (74633 sq ft), more or less

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ROW LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	14	45

Plotting Date: 07/23/2020



Sec 18 - T102N - R57W

Loren E. Huber & Amy M. Nolan-Huber
U.S. Department of the Interior
(U.S. Fish & Wildlife Service)
Waterfowl Management Rights Wetlands Easement

The SE1/4 of Section 18 - Township 102
North -Range 57 West of the 5th P.M.,
except SD Highway 262 right of way

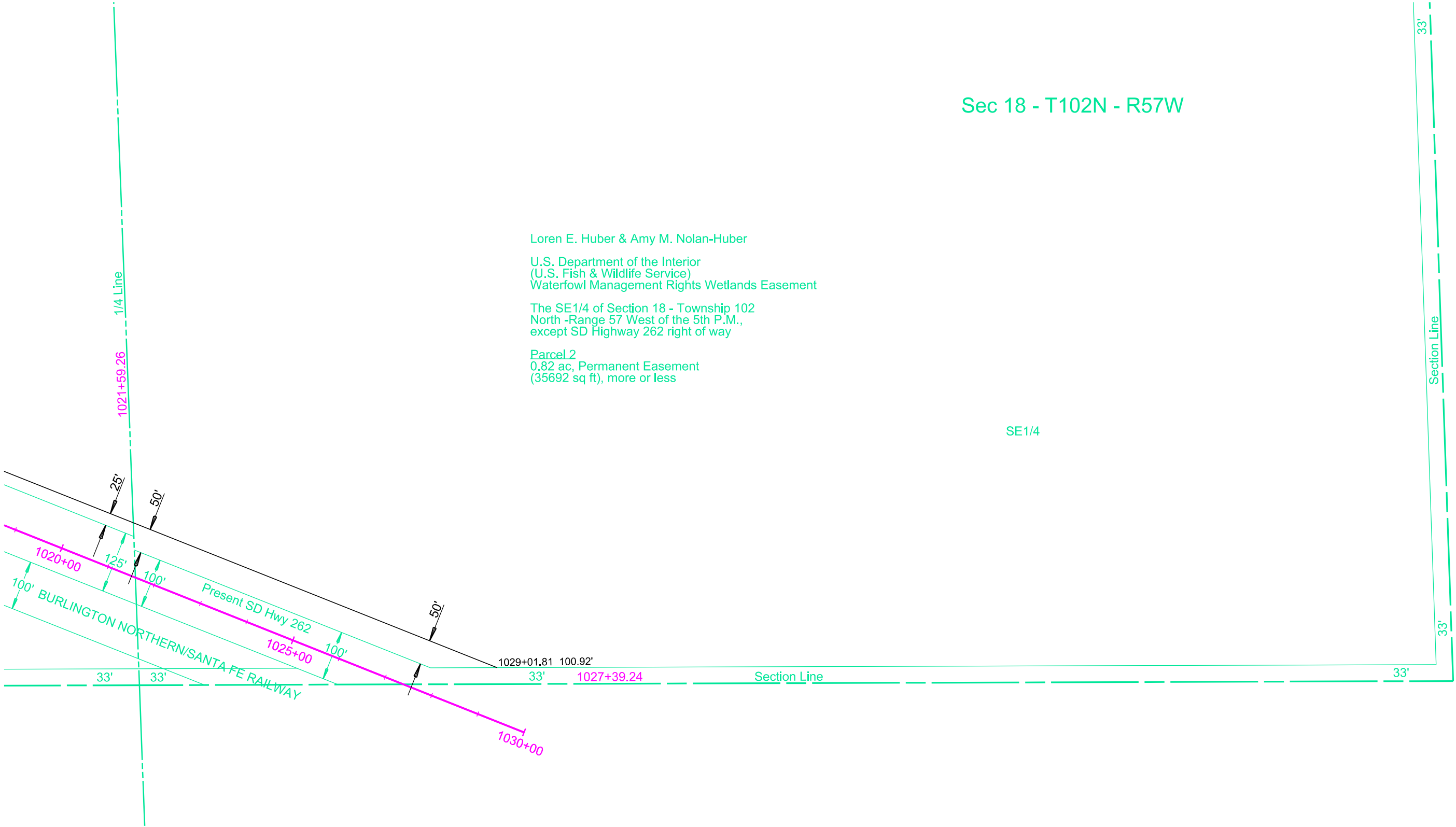
Parcel 2
0.82 ac, Permanent Easement
(35692 sq ft), more or less

SE1/4

Plot Scale - 1:200

Plotted From - tpr13315

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EROSION CONTROL

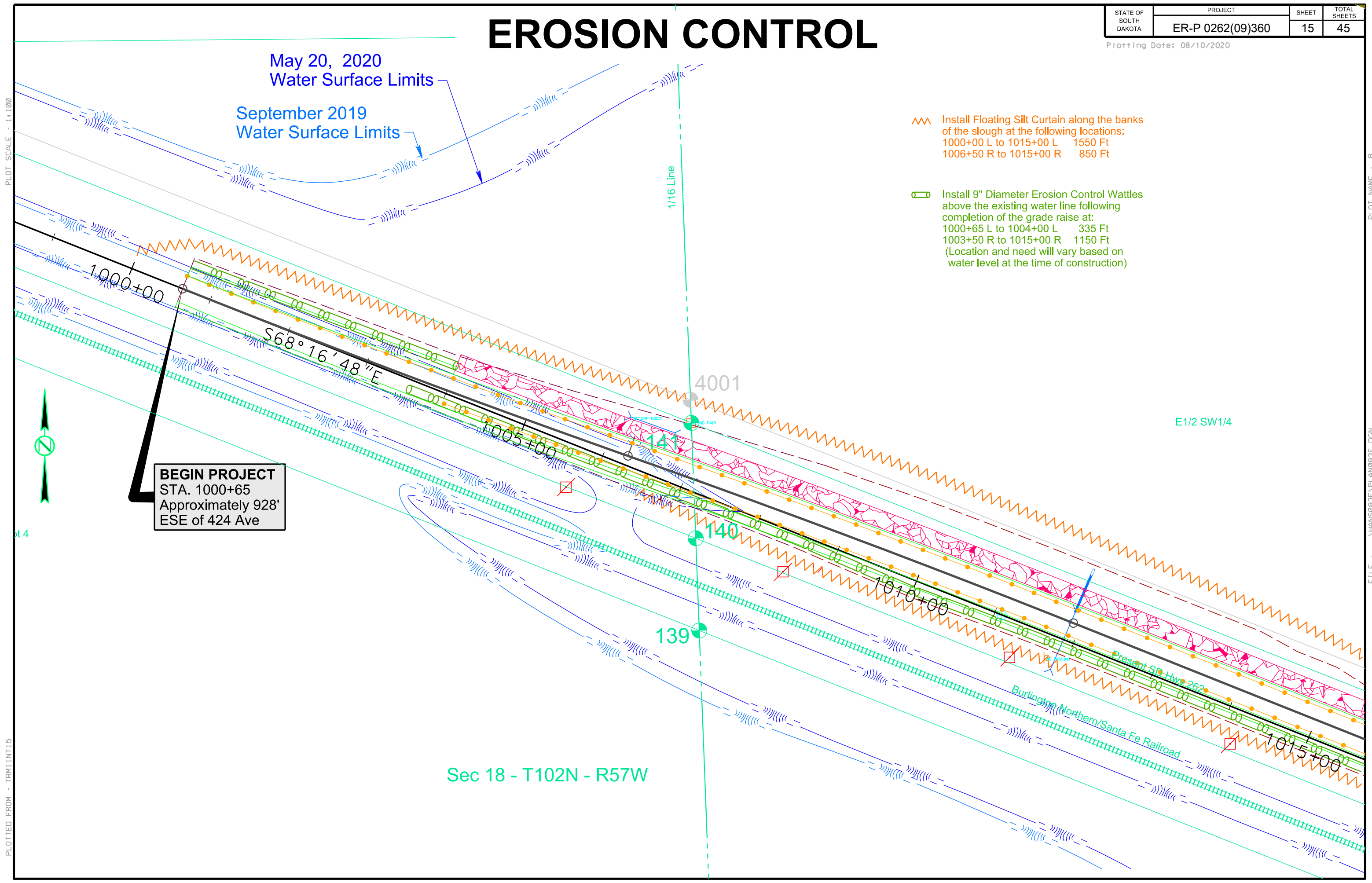
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	15	45

Plotting Date: 08/10/2020

PLOT SCALE - 1:100


PLOT NAME - 8


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May 20, 2020
Water Surface Limits

September 2019
Water Surface Limits

- 
 Install Floating Silt Curtain along the banks of the slough at the following locations:
 1000+00 L to 1015+00 L 1550 Ft
 1006+50 R to 1015+00 R 850 Ft

- 
 Install 9" Diameter Erosion Control Wattles above the existing water line following completion of the grade raise at:
 1000+65 L to 1004+00 L 335 Ft
 1003+50 R to 1015+00 R 1150 Ft
 (Location and need will vary based on water level at the time of construction)

BEGIN PROJECT
 STA. 1000+65
 Approximately 928'
 ESE of 424 Ave



Sheet 4

PLOTTED FROM - TRMLINT15

EROSION CONTROL

STATE OF SOUTH DAKOTA	PROJECT ER-P 0262(09)360	SHEET 16	TOTAL SHEETS 45
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Plotting Date: 08/10/2020

September 2019
Water Surface Limits

May 20, 2020
Water Surface Limits

Sec 18 - T102N - R57W

Install Floating Silt Curtain along the banks of the slough at the following locations:
 1015+00 L to 1020+50 L 550 Ft
 1015+00 R to 1020+50 R 550 Ft

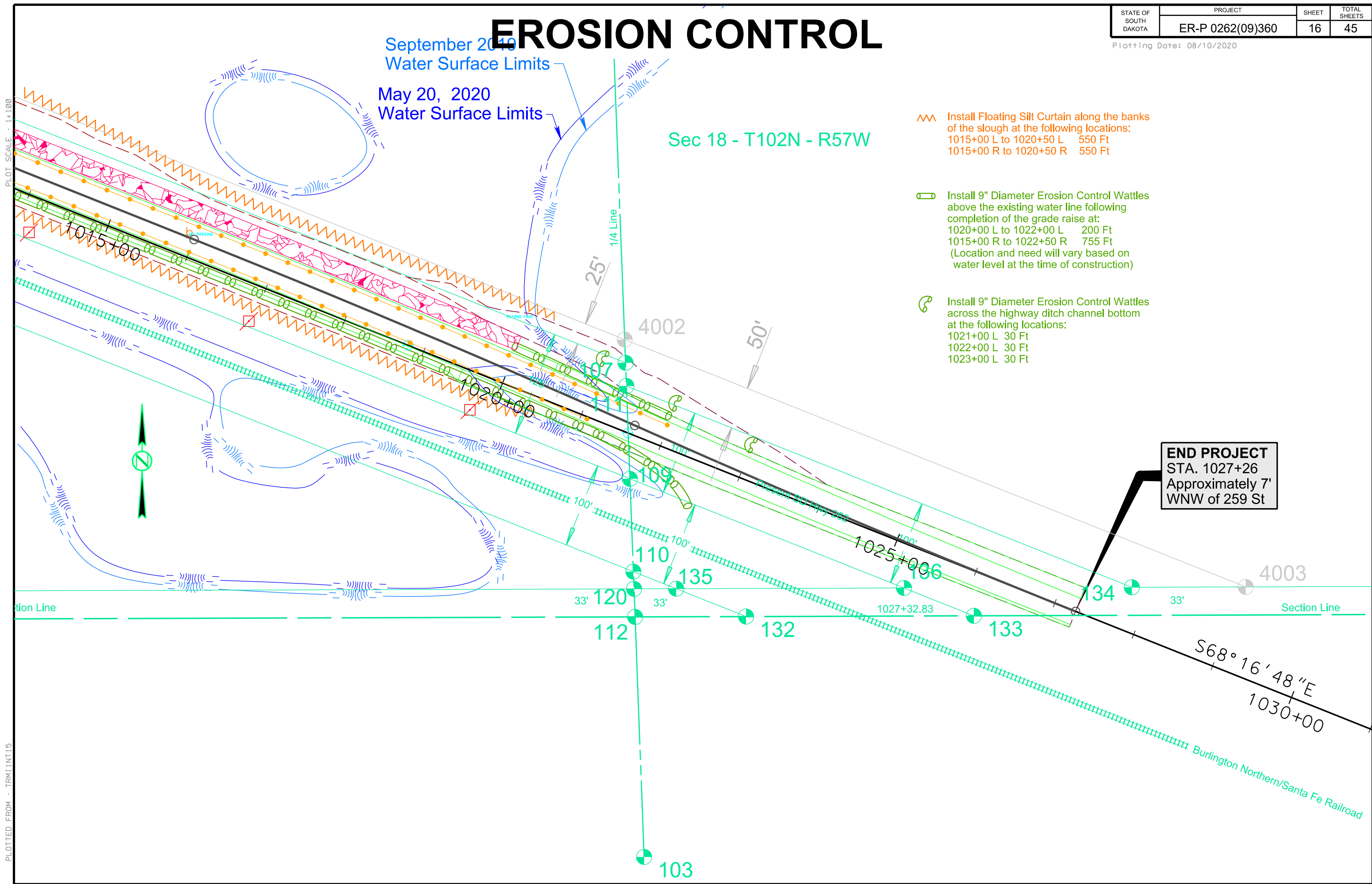
Install 9" Diameter Erosion Control Wattles above the existing water line following completion of the grade raise at:
 1020+00 L to 1022+00 L 200 Ft
 1015+00 R to 1022+50 R 755 Ft
 (Location and need will vary based on water level at the time of construction)

Install 9" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
 1021+00 L 30 Ft
 1022+00 L 30 Ft
 1023+00 L 30 Ft

PLOT SCALE - 1:100

PLOT NAME - 9

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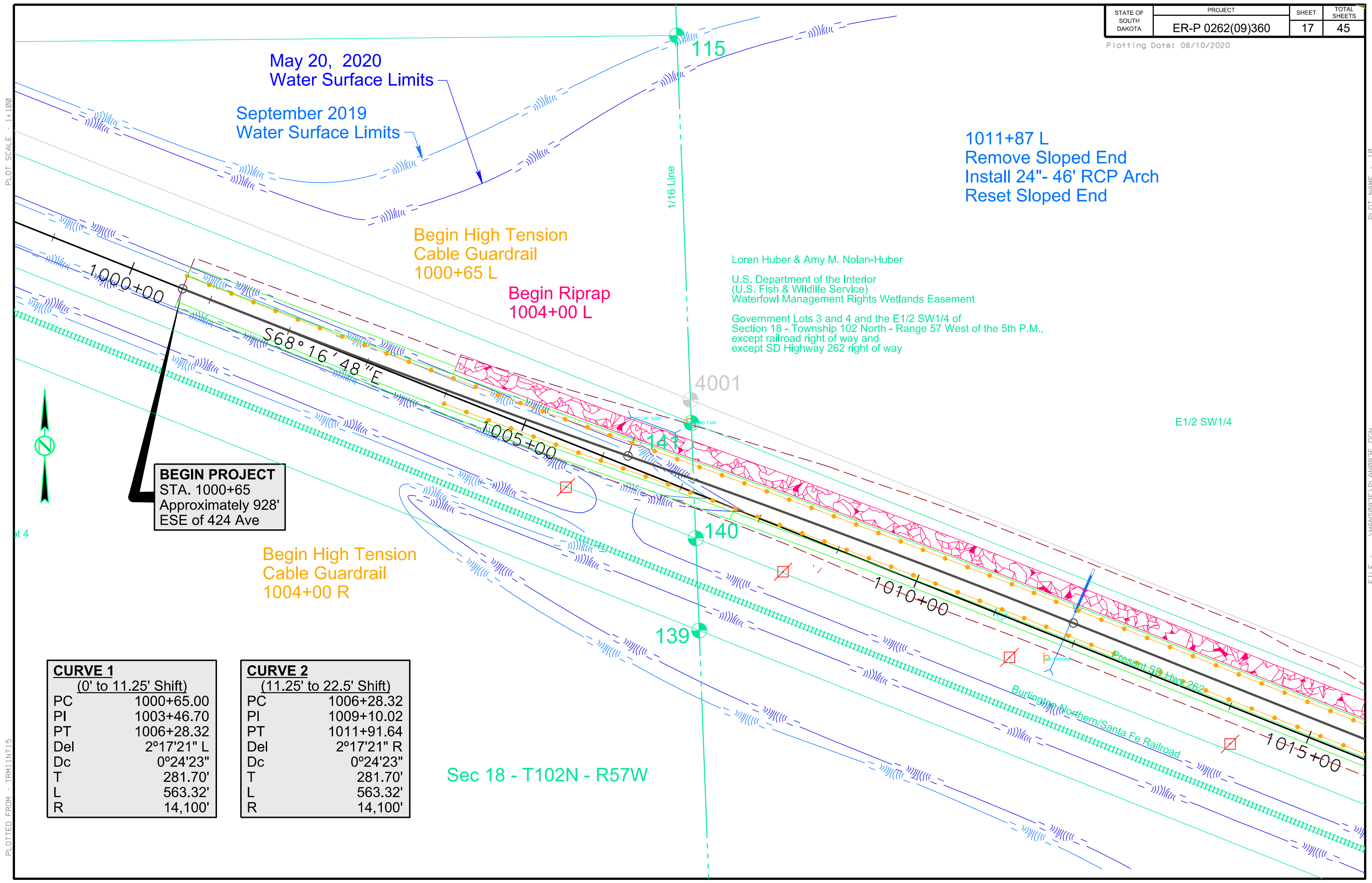
END PROJECT
 STA. 1027+26
 Approximately 7'
 WNW of 259 St

PLOTTED FROM - TRMLINT15

PLOT SCALE - 1:100

PLOT NAME - 10

FILE - ... \HANS083F\PLAN083F.DGN



CURVE 1 (0' to 11.25' Shift)	
PC	1000+65.00
PI	1003+46.70
PT	1006+28.32
Del	2°17'21" L
Dc	0°24'23"
T	281.70'
L	563.32'
R	14,100'

CURVE 2 (11.25' to 22.5' Shift)	
PC	1006+28.32
PI	1009+10.02
PT	1011+91.64
Del	2°17'21" R
Dc	0°24'23"
T	281.70'
L	563.32'
R	14,100'

PLOTTED FROM - IRMLINT15

Plotting Date: 08/10/2020

September 2019
Water Surface Limits

May 20, 2020
Water Surface Limits

Sec 18 - T102N - R57W

CURVE 3 (22.5' to 11.25' Shift)	
PC	1016+00.00
PI	1018+81.70
PT	1021+63.32
Del	2°17'21" R
Dc	0°24'23"
T	281.70'
L	563.32'
R	14,100'

CURVE 4 (11.25' to 0' Shift)	
PC	1021+63.32
PI	1024+45.02
PT	1027+26.64
Del	2°17'21" L
Dc	0°24'23"
T	281.70'
L	563.32'
R	14,100'

End Riprap
1020+00 L

End High Tension
Cable Guardrail
1022+00 L

Loren E. Huber & Amy M. Nolan-Huber

U.S. Department of the Interior
(U.S. Fish & Wildlife Service)
Waterfowl Management Rights Wetlands Easement

The SE1/4 of Section 18 - Township 102 North - Range 57 West of the 5th P.M.,
except SD Highway 262 right of way

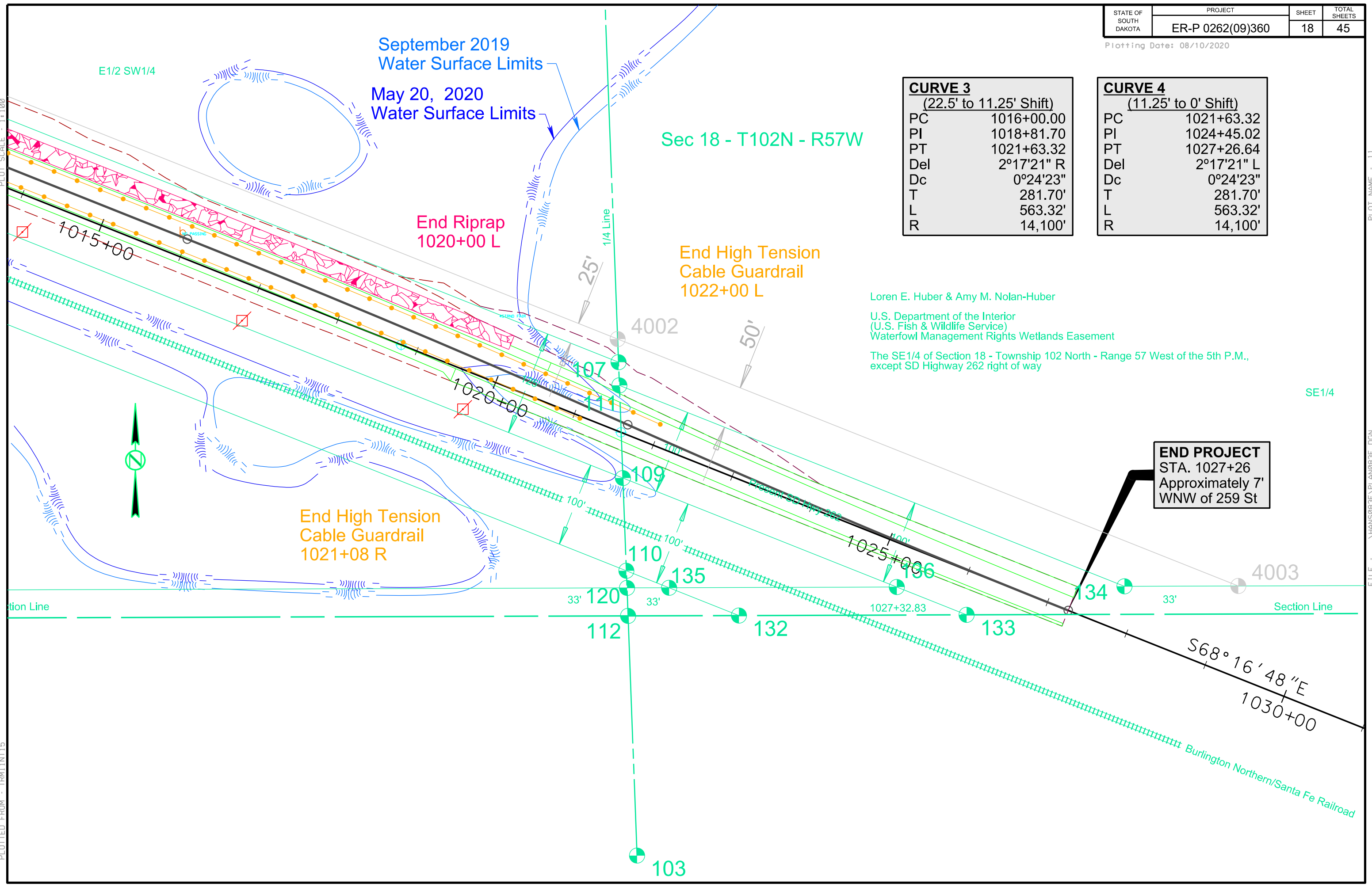
END PROJECT
STA. 1027+26
Approximately 7'
WNW of 259 St

PLOT SCALE - 1:100

PLOT NAME - 11

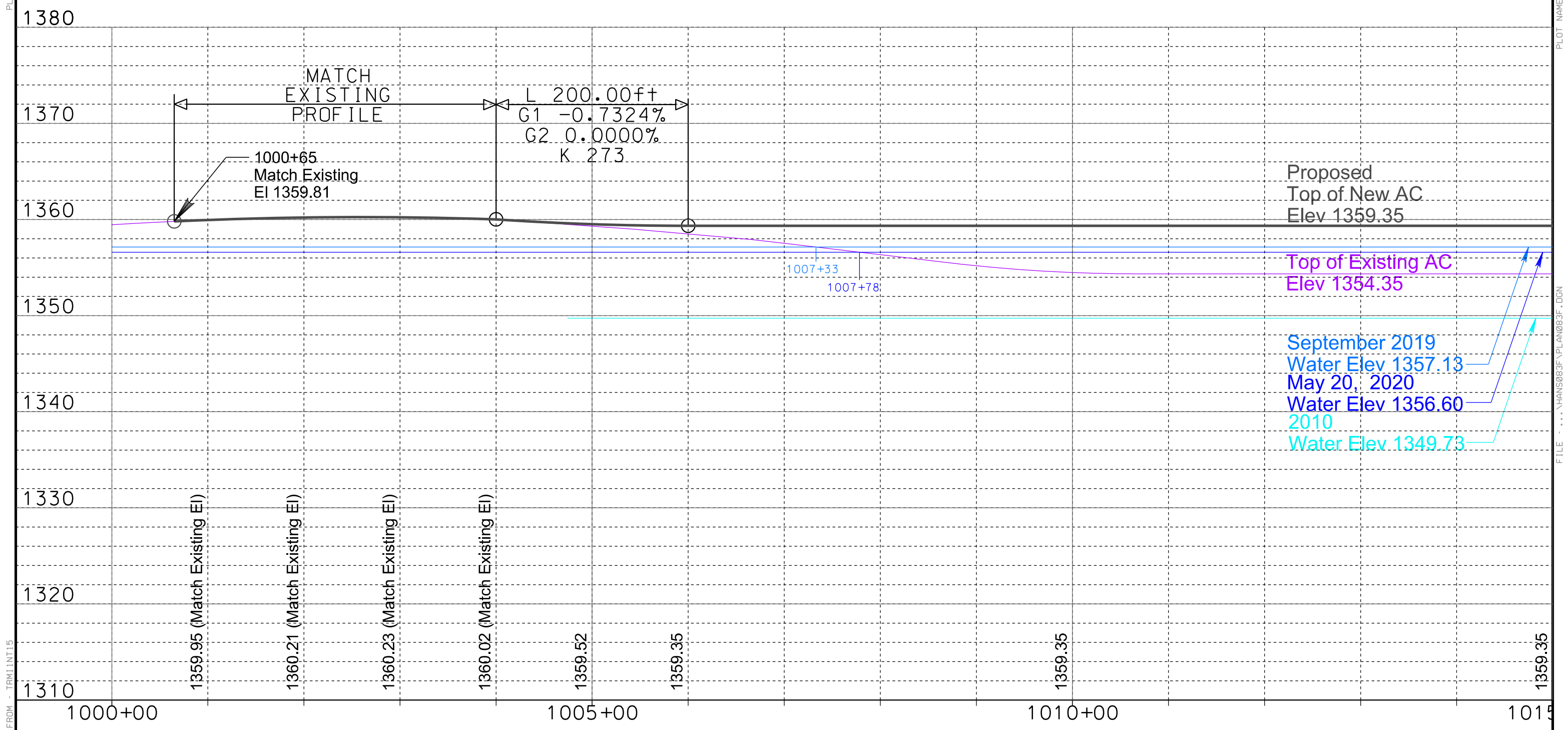
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PLOTTED FROM - TRMLINT15



PLOT SCALE - 1:100

PLOT NAME - 12



PLOTTED FROM - TRMLINT15

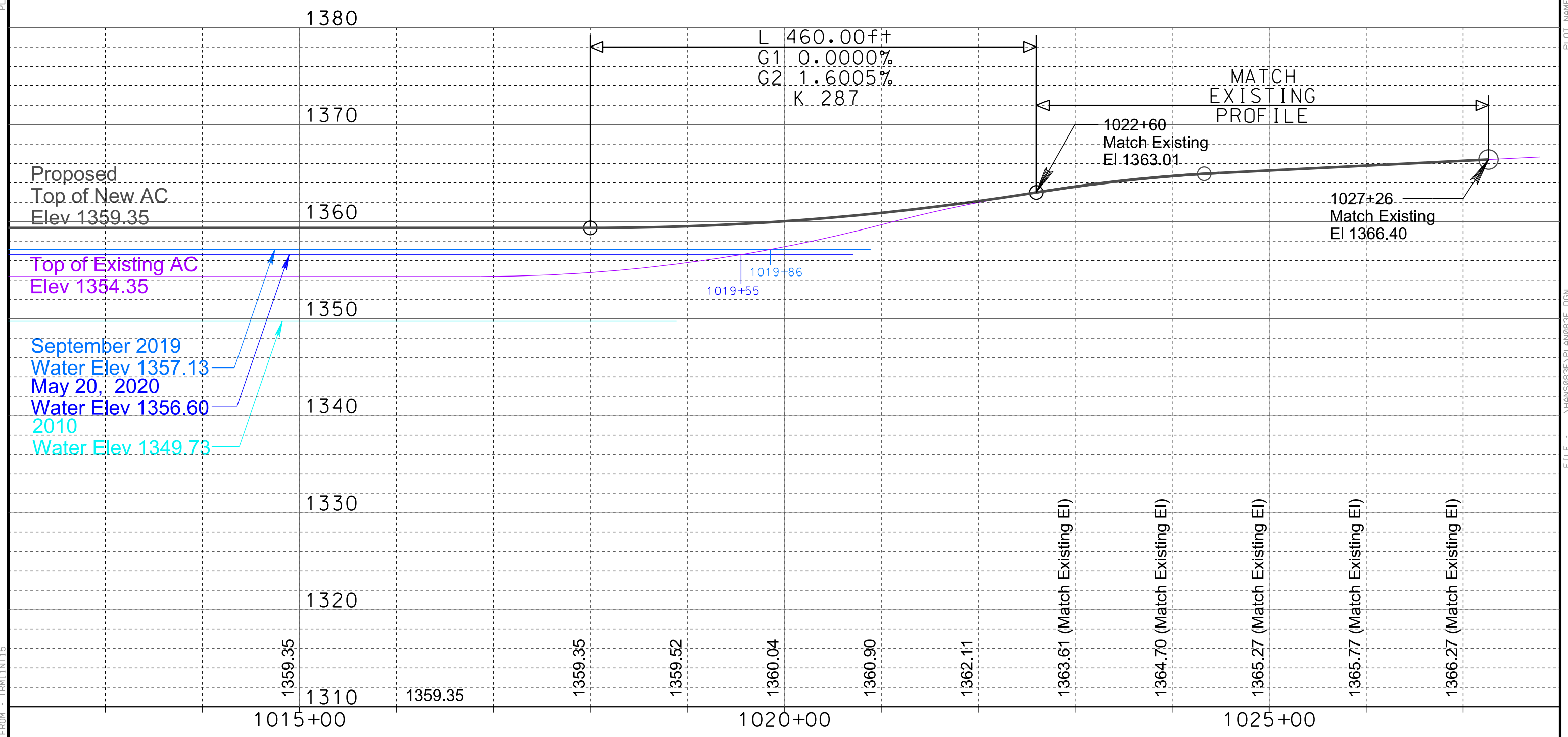
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PLOT SCALE - 1:100

PLOT NAME - 13

PLOTTED FROM - TRMLINT15

FILE - ... \HANS083F\PLAN083F.DGN



UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25; the Contractor will contact the Project Engineer to determine if project changes are necessary to avoid utility impacts.

WOVEN SEPARATOR FABRIC

Separator fabric will be unrolled longitudinally to centerline. Rolls of separator fabric will be overlapped 2 feet laterally and longitudinally upon adjacent or continuing rolls.

SLOUGH WATER LEVEL

At the time of plans creation, a length of SD262 from approximately 1008+00 to 1019+50 specified for Grade Raise on this project was inundated. The mainline pipe to be extended is also in the inundated area.

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

MAINLINE ASPHALT PAVING BEYOND SEASONAL LIMITATIONS

1. If the Contractor anticipates paving beyond the seasonal limitation in order to complete asphalt paving in 2020, the Contractor shall submit a request to pave past the seasonal limitation to the Project Engineer. The request shall include an Updated Paving Schedule and a Late Season Paving Plan as identified below:

a. An Updated Paving Schedule that includes:

- 1) A 14-day weather forecast from a nationally recognized source.
- 2) The expected paving completion date.
- 3) An estimate of the number of suitable weather paving days from the seasonal limitation to paving completion.

b. A Late Season Paving Plan that includes:

- 1) Acknowledgement that all other requirements of Section 320 and applicable contract special provisions will apply.
- 2) A list of actions to be taken after the seasonal limit to facilitate compaction such as, but not limited to:
 - a) Tarping if weather conditions or haul distance warrant or if the asphalt concrete will not be incorporated into the work within 30 minutes of batching.
 - b) Proposed sequence of operations with contingencies if weather conditions do not allow paving to continue as planned.
 - c) Consideration of compaction enhancement admixtures and use guidelines (mix design approval by the Department's Bituminous Engineer will be required).

Submittal of a request to pave past the seasonal limitation does not imply that the request will be granted.

TYPE II FIELD LABORATORY

The lab will be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection will be provided with a multi-port wireless router. The internet connection will be a minimum speed of 5 Mbps unless limited by job location and approved by the DOT. Prior to installing the wireless router, the Contractor will submit the wireless router's technical data to the Area Office to check for compatibility with the State's computer equipment. The internet connection is intended for State personnel usage only. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer.

The Contractor will submit a copy of each monthly bill for calls charged to this phone at the end of each month. The Project Engineer will then audit the bills to ensure calls are legitimate and then initiate a Construction Change Order (CCO) to reimburse the Contractor for the actual phone calls made, including local and long-distance calls.

Reimbursement will not be made for fees associated with the purchase, installation, maintenance, disconnection, monthly line charges, and incidentals involved in the installation, maintenance, and disconnection of the phone (including attachments). These items will be incidental to the contract unit price per each for Type II Field Laboratory.

RUMBLE STRIPES

INSTALLATION:

Rumble stripes will be constructed according to the details of Standard Plate 320.20 along the entire length of the grade raised section.

Gaps for rumble stripe installation as detailed on the standard plate are included with the measurement and payment.

Cost for asphalt concrete rumble stripes will be included in the contract unit price per mile for Grind 8" Rumble Strip or Stripe in Asphalt Concrete.

ROADWAY CLEANING:

The Contractor will be required to remove loose material from the driving surface and/or asphalt shoulders of the roadway. It will be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas or waterways.

Cost for this work will be incidental to the contract unit price per mile for Grind 8" Rumble Strip or Stripe in Asphalt Concrete.

UNCLASSIFIED EXCAVATION

Material from Unclassified Excavation shall be removed and disposed by the Contractor.

TEMPORARY BASE COURSE RAMPS

Temporary Base Course Ramps will be placed at Begin and End Project to provide a smooth transition from existing asphalt concrete to the new granular surfaced grade until the final asphalt concrete surfacing is placed. Included as an Additional Quantity in the Table of Materials Quantities are 80 Tons of Base Course to accomplish this work.

Cost for removing and disposing of the temporary ramps will be incidental to the contract unit price for Base Course.

WATER FOR COMPACTION

Cost for water for compaction of the Base Course will be incidental to the contract unit prices for the various contract items. The moisture required at the time of compaction will be 6%± unless otherwise directed by the Engineer.

CLASS E ASPHALT CONCRETE

Mineral Aggregate for Class E Asphalt Concrete will conform to the requirements for Class E, Type 1.

Mineral aggregate for the Class E may be obtained from a hot plant producing asphalt concrete for the SDDOT in accordance with Class Q2, Class Q3 or Class Q4 hot mixed asphalt concrete specifications. Mineral Aggregate will conform to the requirements of the Special Provision for Quality Control / Quality Assurance Specifications for Asphalt Concrete Pavement. Mineral Aggregate for Class Q2, Class Q3 or Class Q4 Hot Mixed Asphalt Concrete. Testing requirements for the mineral aggregate will be in accordance with Class E specifications.

If the asphalt mixture used on the project is a Class Q2, Class Q3 or Class Q4 Asphalt concrete from another project the job-mix formula for the mix will apply, but the testing will be in accordance with the SDDOT requirements for a Class E Specification.

All other requirements for Class E Asphalt Concrete will apply.

Asphalt concrete placed on the shoulders will not be compacted to a specified density.

FLUSH SEAL

Application of the flush seal will be completed within 10 working days following completion of the asphalt concrete surfacing.

COMPACTION SAMPLE

Two random locations on each lift of asphalt concrete will be selected by the Engineer for density determination. The cutting of the cores and trimming to the appropriate lift thickness will be performed by the Contractor as per SD315. Density determination of the cores will be performed by the Engineer as per SD315. The density of each lift will be the average of the two cores.

TIE BOLTS FOR RCP/RCP ARCH CULVERTS

Tie Bolts will be installed at the inlet on all sections of new culvert.

Cost for furnishing and installing tie bolts will be incidental to the contract unit prices for 24" RC Arch, Install.

HIGH TENSION CABLE GUARDRAIL

High Tension Cable Guardrail must be completed prior to opening the roadway to unimpeded traffic.

The Contractor will furnish and install a high tension guardrail system that meets the Test Level 3 crash testing requirements of National Cooperative Highway Research Program (NCHRP) 350 or current Manual for Assessing Safety Hardware (MASH). The maximum dynamic deflection of the system will be less than 8 feet and the maximum post spacing will be 16 feet unless specified otherwise in the plans.

The high tension cable guardrail system will be in compliance with Specifications Section 6.9 Buy America.

The Contractor will install the system according to the manufacturer's installation recommendations except where stated otherwise in the plans. A copy of the detail drawings and installation instructions for the high tension cable guardrail and anchor assemblies will be given to the Engineer a minimum of 4 weeks prior to installation of the high tension cable guardrail system.

All posts will be galvanized and inserted into driven galvanized steel sleeves with soil plates.

Delineation of the high tension cable guardrail will be in conformance with standard plate 632.40.

The cables provided will be pre-stretched in the factory.

The Contractor will check and adjust the tension of the cables a minimum of 3 weeks after installation and not longer than 6 weeks after installation. Cost for this work will be incidental to the contract unit price per foot for High Tension Cable Guardrail.

The Contractor will provide a signed letter of compliance to the Engineer upon completion of the high tension cable guardrail installation(s) stating that the high tension cable barrier system has been installed in conformance to the installation instructions, specifications, and at a minimum meets the Test Level 3 crash test requirements of NCHRP 350 or MASH.

The high tension cable guardrail will be measured along the centerline of the cable guardrail from center of anchor assembly to center of anchor assembly to the nearest foot. Example: If the system utilizes 4 anchor footings in the anchor assembly, then the center of the anchor assembly would be centered between the 2nd and 3rd footing.

Cost for furnishing and installing the high tension cable guardrail system including labor, material and equipment will be incidental to the contract unit price per foot for High Tension Cable Guardrail.

HIGH TENSION CABLE GUARDRAIL ANCHOR ASSEMBLY

The beginning and end of each run of high tension cable guardrail will terminate with an anchor assembly that meets the Test Level 3 crash testing requirements of NCHRP 350 or MASH.

The footing(s) for the anchor assembly will be designed to allow for 1 inch maximum of lateral deflection. The allowable design soil pressure will be 1000 psf. The top 2 feet of soil pressure will be neglected in the design of the footing(s). The footing(s) will be a minimum of 5' deep. The footing(s) design will be submitted through proper channels to the Office of Bridge Design for a one-time approval. Any changes to the anchor assembly that could affect footing size including configuration changes such as different number of cables and different number of footings will be resubmitted for approval. The approval will be obtained a minimum of 4 weeks prior to construction of the anchor footing(s).

Delineation of the high tension cable guardrail anchor assembly will be in conformance with standard plate 632.40.

Cost for furnishing and installing the High Tension Cable Guardrail Anchor Assembly including labor, equipment and material which include the anchor footing(s), hardware, and attachments to the anchor footing(s), will be incidental to the contract unit price per each for High Tension Cable Guardrail Anchor Assembly.

REMOVE AND RESET HIGH TENSION CABLE GUARDRAIL & REMOVE AND RESET HIGH TENSION CABLE GUARDRAIL ANCHOR ASSEMBLY

If the asphalt concrete surfacing is performed during this construction season, guardrail resetting will not be necessary. If the asphalt concrete surfacing is performed in the next construction season, the Contractor will be required to remove the guardrail to allow for placement of the asphalt concrete surfacing and flush sealing and reset the guardrail thereafter.

Cost for removing and resetting the High Tension Cable Guardrail including labor, equipment and material to accomplish the work (if necessary) will be included in the contract unit prices per foot for Remove High Tension Cable Guardrail for Reset and Reset High Tension Cable Guardrail.

Cost for removing and resetting the High Tension Cable Guardrail Anchor Assemblies including labor, equipment and material to accomplish the work (if necessary) will be included in the contract unit prices per each for Remove High Tension Cable Guardrail Anchor Assembly for Reset and Reset High Tension Cable Guardrail Anchor Assembly.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Material will be applied as per manufacturer's recommendations.

This material will consist of a durable high build, low VOC, fast drying, waterborne traffic paint with a 100% acrylic polymer (Arkema DT-400, Dow HD-21A, or equivalent). The Contractor will provide certification that the material is one of the following products or an equivalent as approved by the Operations Traffic Engineer:

- Diamond Vogel's Waterborne High Build Polymer Marking Paint
- Ennis-Flint's High Build Polymer Marking Paint

No further testing of this material will be required. Reflective media will consist of glass beads.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAINT FOR CENTERLINE MARKING

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

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAINT FOR EDGELINE MARKING

Solid 8" line = 45 Gals/Mile
Glass Beads = 8 Lbs/Gal.

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 2 days and within 30 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m²/lux for white and 170 mc/m²/lux for yellow.

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 the following fungal species:

25% *Glomus intraradices* 25% *Glomus mosseae*
 25% *Glomus aggregatum or deserticola* 25% *Glomus etunicatum*

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

The mycorrhizal inoculum will be as shown below or an approved equal:

<u>Product</u>	<u>Manufacturer</u>
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com

TOPSOIL

On the portions of the project where existing topsoil is not inundated, the Contractor will be required to remove and replace topsoil (approximately 4" depth, 267 CuYds). Cost for this work will be included in the contract lump sum price for Remove and Replace Topsoil.

After completion of the grade raise on the remaining portions of the project, the Contractor will be required to place Contractor Furnished Topsoil (approximately 4" depth, 189 CuYds) on the inslopes from the asphalt concrete pavement edge, down to within 1' measured horizontally from the water surface level at the time of placement. Cost for this work will be included in the contract unit price per cubic yard for Contractor Furnished Topsoil.

PERMANENT SEEDING

Type B Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Canada Wildrye	Mandan	2
Total:		18

MULCHING (GRASS HAY OR STRAW)

Grass Hay or Straw Mulch is included in 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.

EROSION CONTROL ACREAGE)

Quantities for topsoil, seeding and mulching are based on an area of 0.85 Acre.

LOW FLOW SILT FENCE

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

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

Need and location for low flow silt fence will be determined by the Engineer during construction. A quantity is included in the Estimate of Quantities, should it be needed on construction. Refer to Standard Plate 734.04 for details.

EROSION CONTROL WATTLE

Upon completion of the grade raise, erosion control wattles for restraining the flow of runoff and sediment will be installed as detailed in these plans as determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

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

Erosion control wattles will remain on the project to decompose.

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

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

FLOATING SILT CURTAIN

Floating silt curtain will be installed as detailed in these plans and as determined by the Engineer during construction.

The Contractor will determine the water depth and other waterway characteristics such as stream flow velocity and seek technical advice from the manufacturer before ordering the floating silt curtain so that the floating silt curtain installed is the correct type for the individual sites.

The Contractor will install the floating silt curtain in accordance with the manufacturer's installation instructions or as directed by the Engineer.

The Contractor will maintain the floating silt curtain for the duration of operations involving material placement in water to ensure continuous protection of the waterway.

A list of known manufacturers of floating silt curtain is shown below for informational purpose. Contractors may also use Engineer approved floating silt curtain from manufacturers that are not included in the list.

ABASCO, LLC
Houston, TX
Phone: 1-800-242-7745
www.abasco.net

Aer-Flo, Inc.
Bradenton, FL
Phone: 1-800-823-7356
www.aerflo.com

American Boom and Barrier Corp.
Cape Canaveral, FL
Phone: 1-800-843-2110
www.abbcboom.com

ENVIRO-USA, LLC
Cocoa, FL
Phone: 1-321-222-9551
www.enviro-usa.com

Elastec/American Marine, Inc.
Carmi, IL
Phone: 1-618-382-2525
www.turbiditycurtains.com

Geo-Synthetics, LLC (GSI)
Waukesha, WI
Phone: 1-800-444-5523
www.geosynthetics.com

Parker Systems, Inc.
Chesapeake, VA
Phone: 1-866-472-7537
www.parkersystemsinc.com

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** 7.3 Acres
- **5.3 (3b): Total Area to be Disturbed** 3.1 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 3.1 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** In water
- **5.3 (3d): Description of Vegetative Cover**

- **5.3 (3e): Soil Properties: AASHTO Soil or USDA-NRCS Soil Series Classification**
- **5.3 (3f): Name of Receiving Water Body/Bodies** N/A
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

- **Special sequencing requirements.**

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Extend Culvert (in water)	
Grading with Pit Run (in water)	
Riprap (partially in water)	
Base Course & Asphalt Concrete Resurfacing	
Guardrail	
Rumble Stripes & Pavement Marking	

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"/> Natural Buffers (within 50 ft of Waters of State)	
<input checked="" type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Berm / Windrow	
<input checked="" type="checkbox"/> Floating Silt Curtain	
<input type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

Structural Erosion and Sediment Controls

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

Dust Controls

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

Dewatering BMPs

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

Stabilization Practices (See Detail Plan Sheets)

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

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

Wetland Avoidance

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

5.3 (6): PROCEDURES FOR INSPECTIONS

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

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

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

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

➤ Material Management

▪ Housekeeping

- Only needed products will be stored on-site by the Contractor.
- Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off-site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.

▪ Hazardous Materials

- Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
- Original labels and material safety data sheets will be retained in a safe place to relay important product information.
- If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.

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

➤ Spill Control Practices

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

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

➤ Spill Response

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

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

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

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➤ Waste Disposal

- All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

➤ Hazardous Waste

- All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

➤ Sanitary Waste

- Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

5.3 (9): CONSTRUCTION SITE POLLUTANTS

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

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

Product Specific Practices

▪ **Petroleum Products**

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

▪ **Fertilizers**

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

▪ **Paints**

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

▪ **Concrete Trucks**

Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

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

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

5.3 (11): INFEASIBILITY DOCUMENTATION

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

7.0: SPILL NOTIFICATION

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

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDENR 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 SDDENR 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 SDDENR 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 shall be sent to SDDENR within 14 days of the discharge.

5.4: SWPPP CERTIFICATIONS

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

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

➤ **South Dakota Department of Transportation**

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

Joanne M. Hight

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

➤ **Prime Contractor**

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

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

Authorized Signature

CONTACT INFORMATION

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

➤ **Contractor Information:**

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

➤ **Erosion Control Supervisor**

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

➤ **SDDOT Project Engineer**

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

➤ **SDDENR Contact Spill Reporting**

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

➤ **SDDENR Contact for Hazardous Materials.**

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

➤ **SDDENR Stormwater Contact Information**

- SDDENR 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, SDDENR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

➤ **5.5 (2): Deadlines for SWPPP Modification**

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

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

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

➤ **5.5 (4): Certification Requirements**

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

➤ **5.5 (5): Required Notice to Other Operators**

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

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

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting.

MAINTENANCE OF TRAFFIC

SD262 is currently closed to traffic and will remain closed until the Contractor is ready to open the roadway to unimpeded traffic at the end of this construction season. The closure will continue to be maintained by the Department of Transportation (DOT) during this time period (until the roadway is open to traffic).

If work remains to be done in the next construction season, the Contractor will be required to provide maintenance of traffic for that work. These plans are setup to include maintenance of traffic for the following items in the next construction season: asphalt concrete resurfacing, flush sealing, removing and resetting guardrail, rumble stripes, pavement marking and final cleanup.

Once the guardrail is removed in the spring of 2021, the contractor will place cones on the shoulder every 50 feet and then have 3 weeks to place asphalt and reset the rail guardrail.

GENERAL TRAFFIC CONTROL

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

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

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

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

Payment will be for those signs actually ordered by the Engineer and used.

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

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

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

A mobile work operation will be allowed provided the rumble strip or rumble stripe grooving, flush sealing, and pavement marking can be completed satisfactorily by a continuously moving work operation. A mobile work operation will require approval by the Engineer.

TRAFFIC CONTROL SIGNS

Sufficient traffic control devices have been included in these plans to sign one workspace.

DO NOT PASS (R4-1) signs will be required in advance of and PASS WITH CARE (R4-2) signs will be required after the gravel segment.

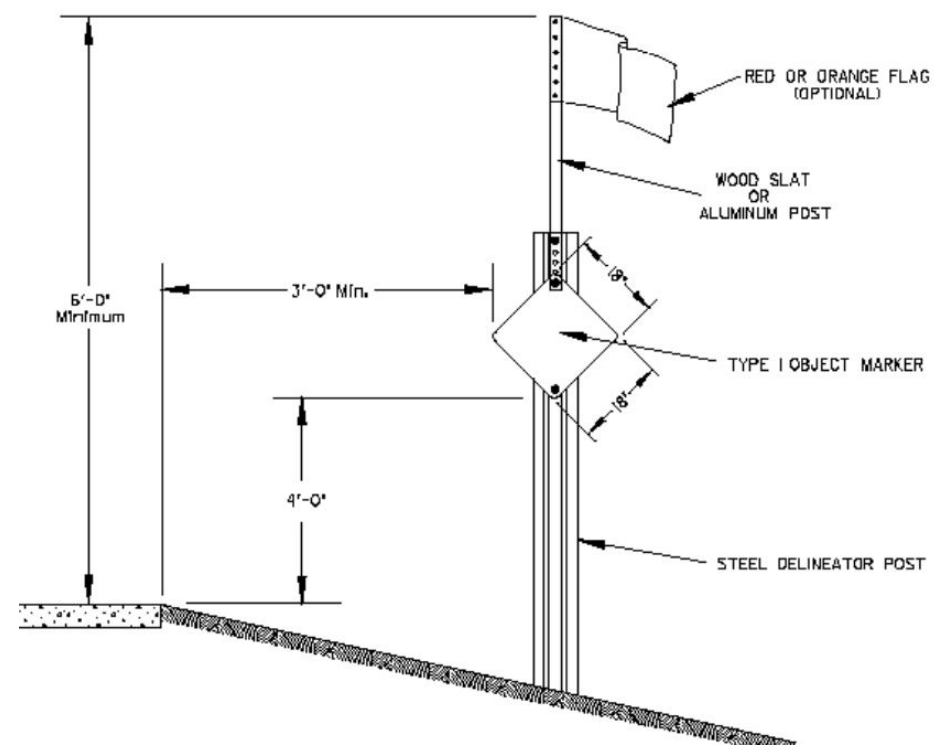
The Contractor will furnish, install, and maintain LOOSE GRAVEL (W8-7) signs with 40 MPH (W13-1P) advisory speed plaques at each end of the gravel surface. LOOSE GRAVEL signs and 40 MPH advisory speed plaques will be covered or removed from view when they are not applicable.

BUMP MARKERS

Orange bump markers, mounted back to back, will be placed adjacent to the transition to gravel. The bump marker details are shown in the following drawing. The post will be a 1.12 lb/ft flanged channel steel post.

BUMP (W8-1) signs with appropriate ADVISORY SPEED (W13-1P) plaques will be placed 500 feet in advance of the bump or as approved by the Engineer for adequate sight distance.

All costs for bump markers, BUMP signs, and ADVISORY SPEED plaques will be incidental to the contract unit price per square foot for Traffic Control Signs.



FLAGGING

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

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

TEMPORARY PAVEMENT MARKING

Temporary flexible vertical markers (tabs) will be used to mark the dashed centerline.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Any temporary flexible vertical markers (tabs) with covers removed before the flush seal will be replaced prior to application of the flush seal. Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs at no additional cost to the State.

Quantities of Temporary Pavement Markings consist of:

Three applications of temporary pavement marking are included in the estimate of quantities for completion of the first asphalt concrete lift, the final asphalt concrete lift, and uncovering the temporary flexible vertical markers (tabs) after application of the flush seal.

If the flush seal is eliminated, the application of the temporary pavement marking on top of the flush seal will be eliminated. No adjustment in the contract unit price for Temporary Pavement Marking will be made because of a variation in quantities.

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights will be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs). The traffic control device used will be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a WORKER (W21-1) symbol sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

Prior to nightfall, tabs will be required to mark centerline on segments of roadway where existing centerline markings have been removed and new markings have not been installed.

PERMANENT PAVEMENT MARKING

The Contractor will be required to repaint all existing pavement markings including centerline and edge lines.

CONES

Cones will be placed at 50' spacing at the edge of the roadway when no guardrail is in place.

Cones will be a minimum of 36 inches in height.

All costs for furnishing, installing, maintaining, and removing the cones will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R4-1	DO NOT PASS	2	24" x 30"	5.0	10.0
R4-2	PASS WITH CARE	2	24" x 30"	5.0	10.0
W8-1	BUMP	4	48" x 48"	16.0	64.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W16-2P	___ FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
-	TYPE 1 ORANGE OBJECT MARKER	8	18" x 18"	2.3	18.4
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 294.0			

PLOT SCALE - 1:202.896

* Messages on signs will vary depending on the operation being conducted.

Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

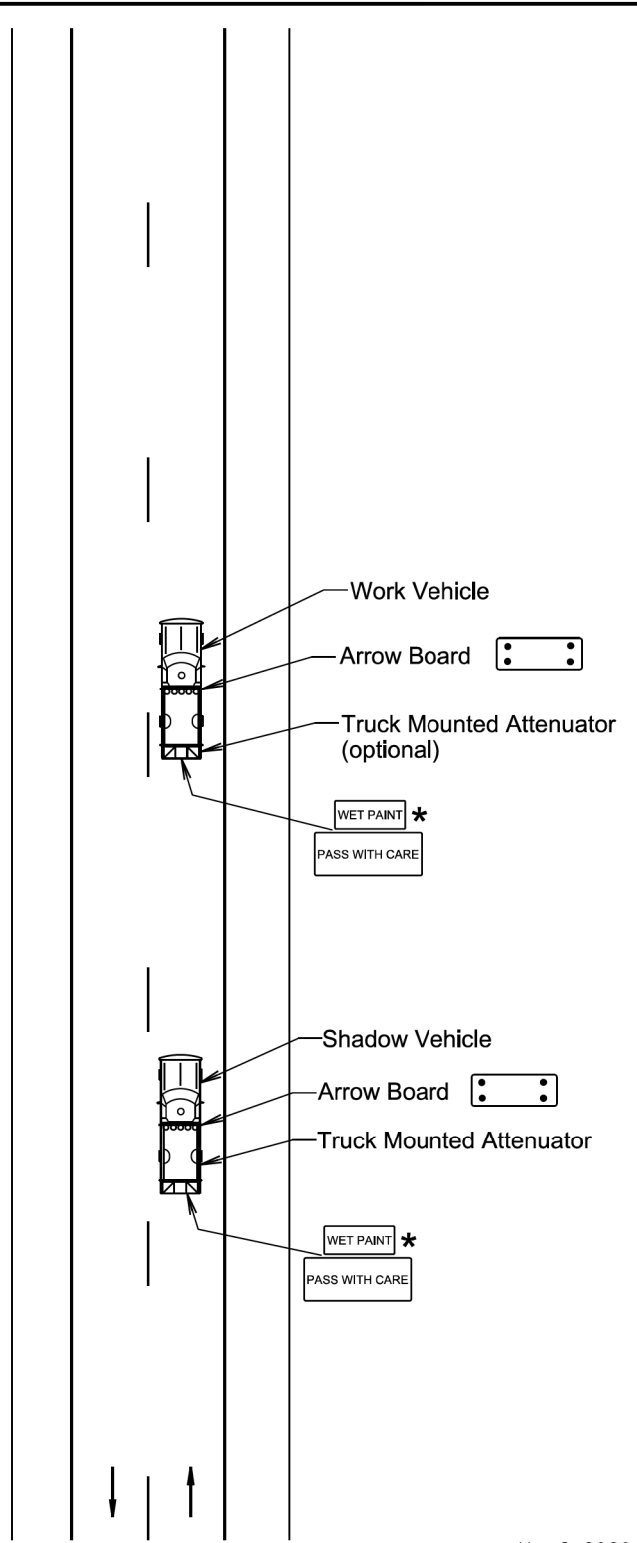
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

When an arrow board is used, it will be used in the caution mode. Marching Diamonds are acceptable.

Arrow boards will, as a minimum, be Type B, with a size of 60" x 30".

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".



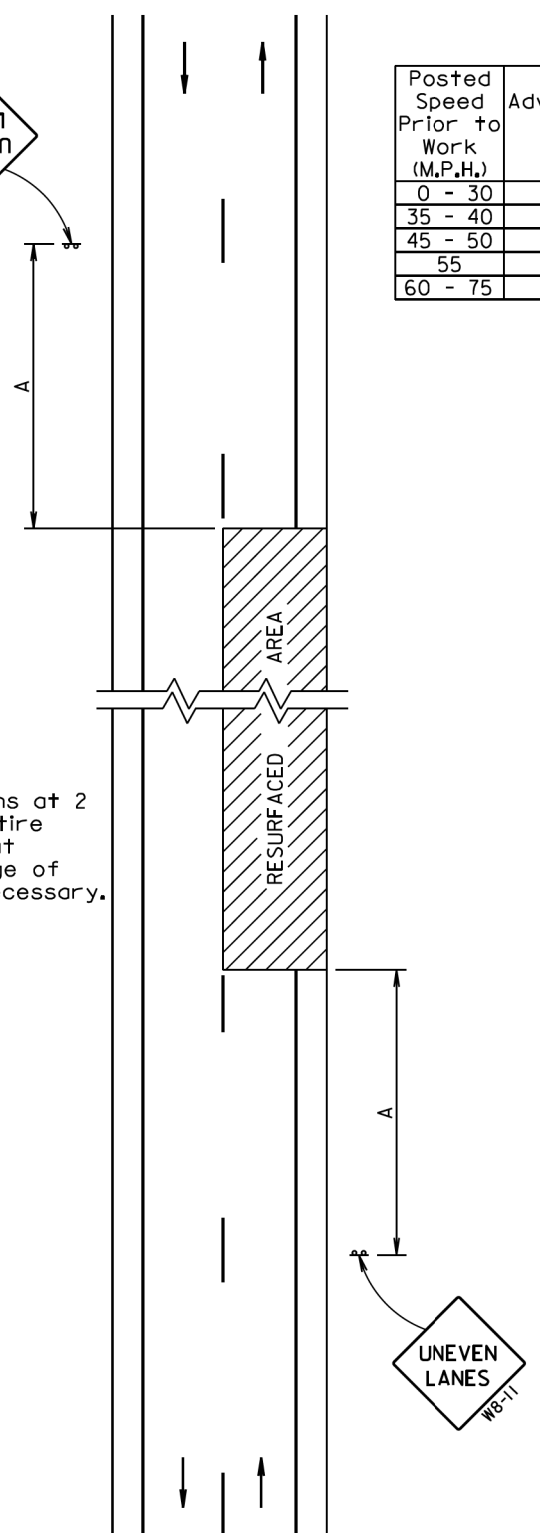
May 9, 2020

<i>Published Date: 3rd Qtr. 2020</i>	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
			Sheet 1 of 1



Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000



Apr 11 15, 2015

<i>Published Date: 3rd Qtr. 2020</i>	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES UNEVEN ROAD SURFACE	PLATE NUMBER 634.22
			Sheet 1 of 1

PLOTTED FROM - IRMLINT17

FILE - ... \HANS083F - TC CONTAINER.DGN PLOT NAME - 1

PLOT SCALE - 1:202.896

PLOT NAME - 2

FILE - ... \HANS083F - TC CONTAINER.DGN

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

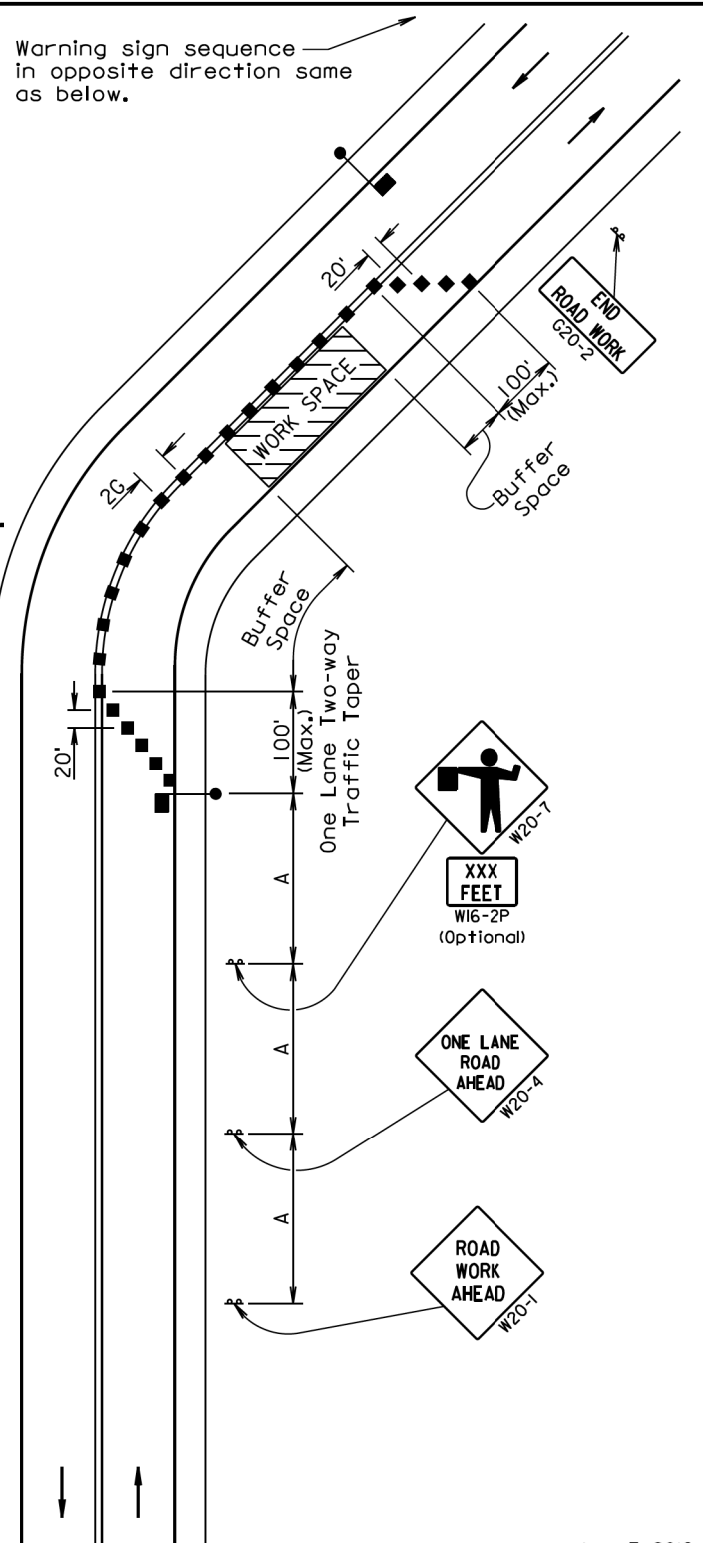
The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

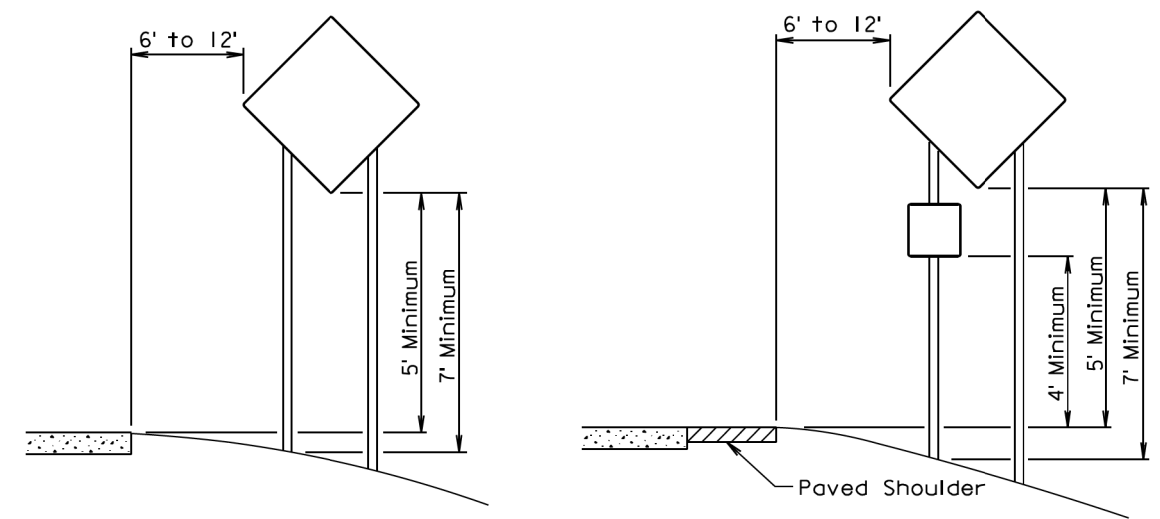
The length of A may be adjusted to fit field conditions.



June 3, 2016

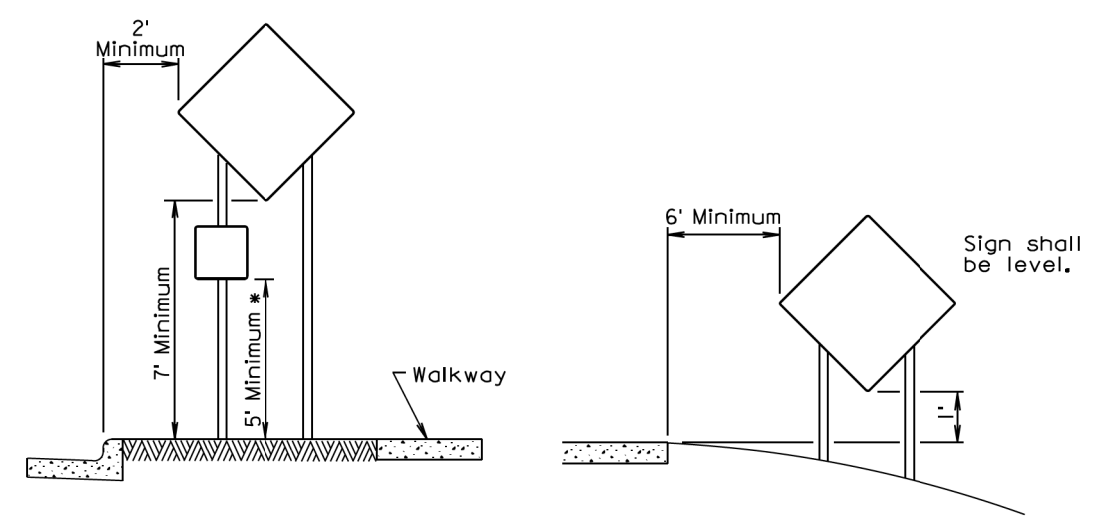
S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
	Published Date: 3rd Qtr. 2020	Sheet 1 of 1

Plotting Date: 08/05/2020



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



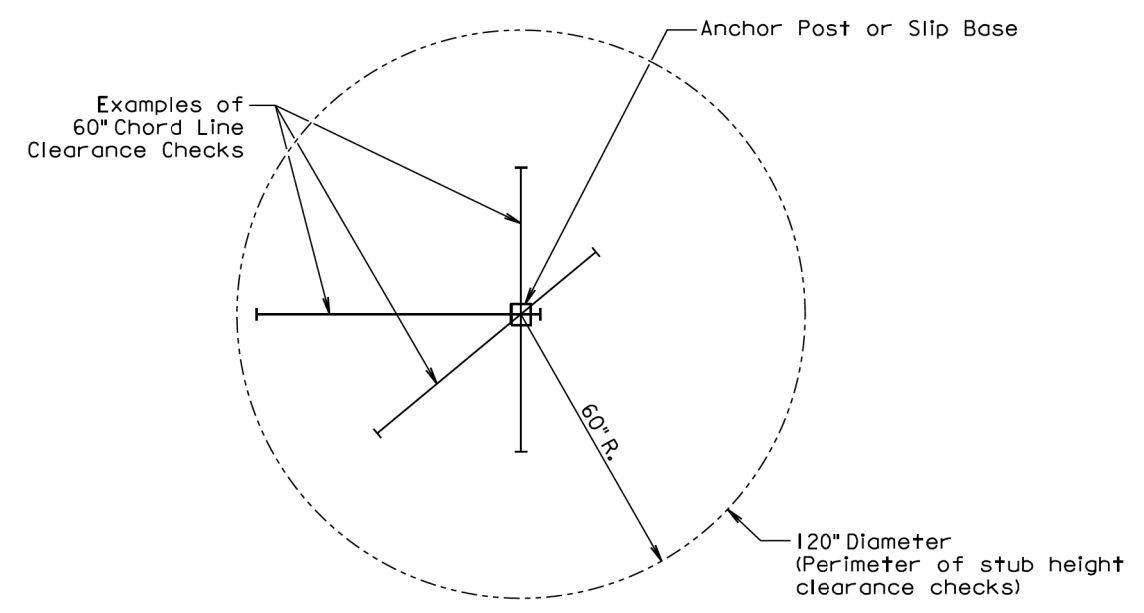
URBAN DISTRICT

RURAL DISTRICT 3 DAY MAXIMUM

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

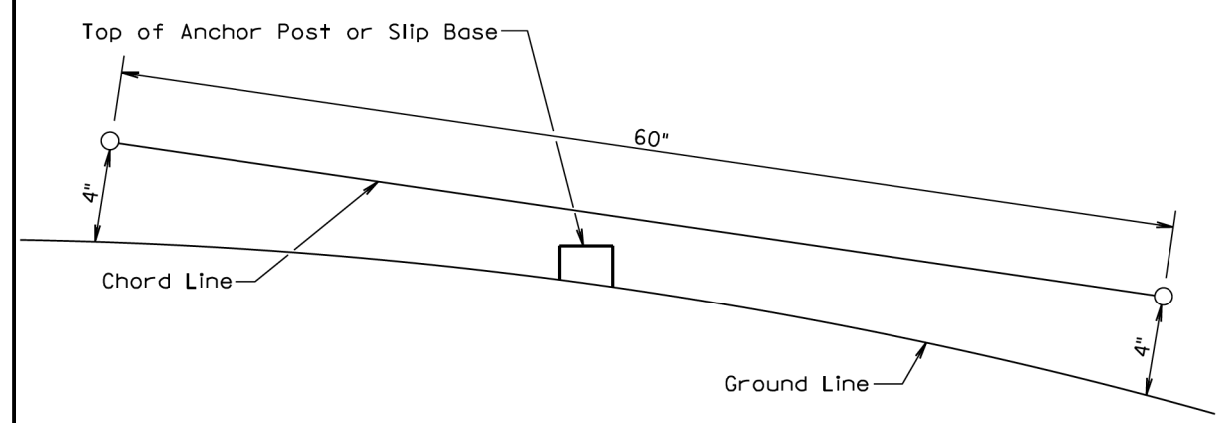
September 22, 2014

Published Date: 3rd Qtr. 2020	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW

(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

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

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

July 1, 2005

Published Date: 3rd Qtr. 2020	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

PLOT SCALE - 1:202.896

PLOTTED FROM - IRMLINT17

PLOT NAME - 3

FILE - ... \HANS083F - TC CONTAINER.DGN

PAVEMENT MARKING

Typical pavement marking as shown on this sheet will be applied throughout the entire length of two lane roadway.

Traffic Control will be incidental to the cost of application. The striper and advance or trailing warning vehicle will be equipped with flashing amber lights and advance warning arrow board.

Application rates will be as follows:

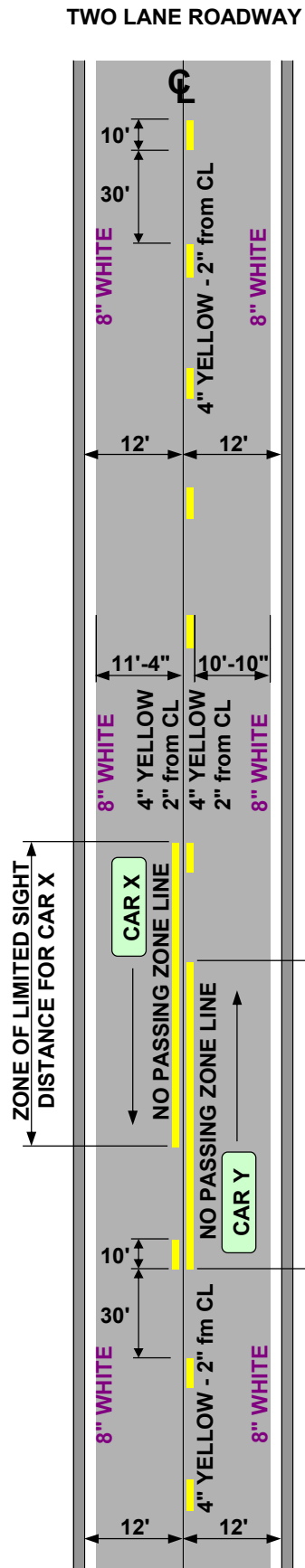
Two Lane Roadway (Rates for one line)	
Dashed Yellow Centerline	Rate = 6.2 Gals./Pass-Mile
Solid Yellow Centerline	Rate = 22.5 Gals./Pass-Mile
Solid White Edgeline	Rate = 45 Gals./Pass-Mile

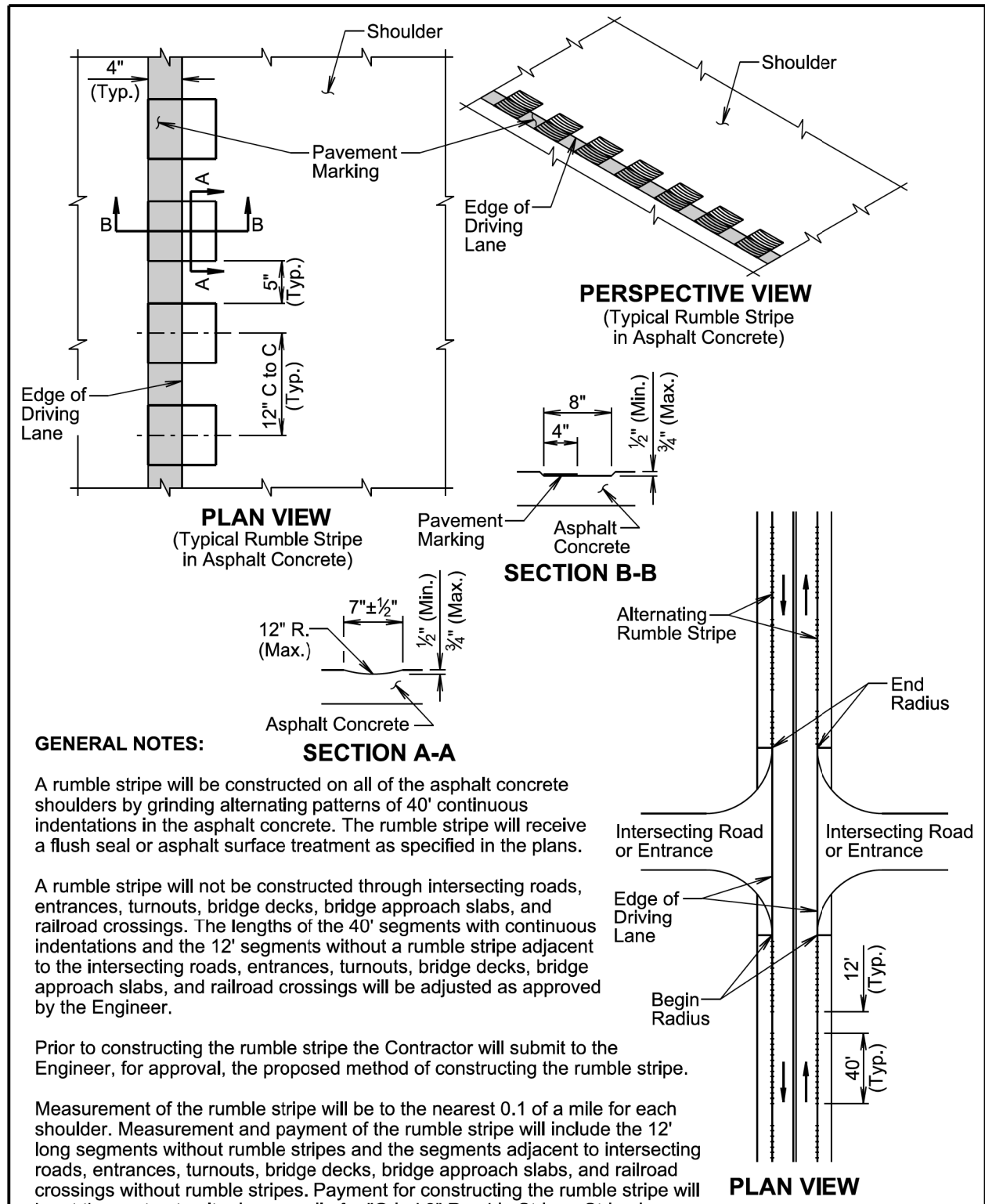
4" Yellow Skip Centerline (when not adjacent to a 4" Yellow No Passing Zone) will be placed consistently to the south or east side of centerline.

ESTIMATED QUANTITIES (BASED ON ONE APPLICATION)	
HIGH BUILD	QUANTITY
WHITE	47 GALLONS
YELLOW	22 GALLONS

Included in the above quantities are:			
Additional White (1 Application)		Additional Yellow (1 Application)	
Description	Gallons	Description	Gallons
4" Lines	-	Transitions	-
8" Lines	-	4" Skip Lines	-
12" Gore Lines	-	8" Lines	-
Crosswalks	-	12" Lines	-
24" Stop Lines	-	24" Hatches	-
24" Hatches	-	Solid Areas	-
Solid Areas	-	Additional Yellow:	-
Arrows	-		
Left Arrows	-	Additional Quantities	
Right Arrows	-	<u>Rates of Coverage:</u>	<u>SqFt/Gal</u>
Straight Arrows	-	4", 8" and 12" Lines	50
Combo Arrows	-	24" Lines and Bars	30
Lane Drop Arrows	-	Arrows, Messages	
Messages	-	and Solid Areas	20
STOP	-		
STOP AHEAD	-	All pavement marking dimensions	
R X R with Bars	-	are based on 12' driving lanes.	
SCHOOL X-ING	-		
Additional White:	-		

Yellow quantity is based on placing double yellow centerline throughout the entire length of the project.





GENERAL NOTES:

SECTION A-A

A rumble stripe will be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

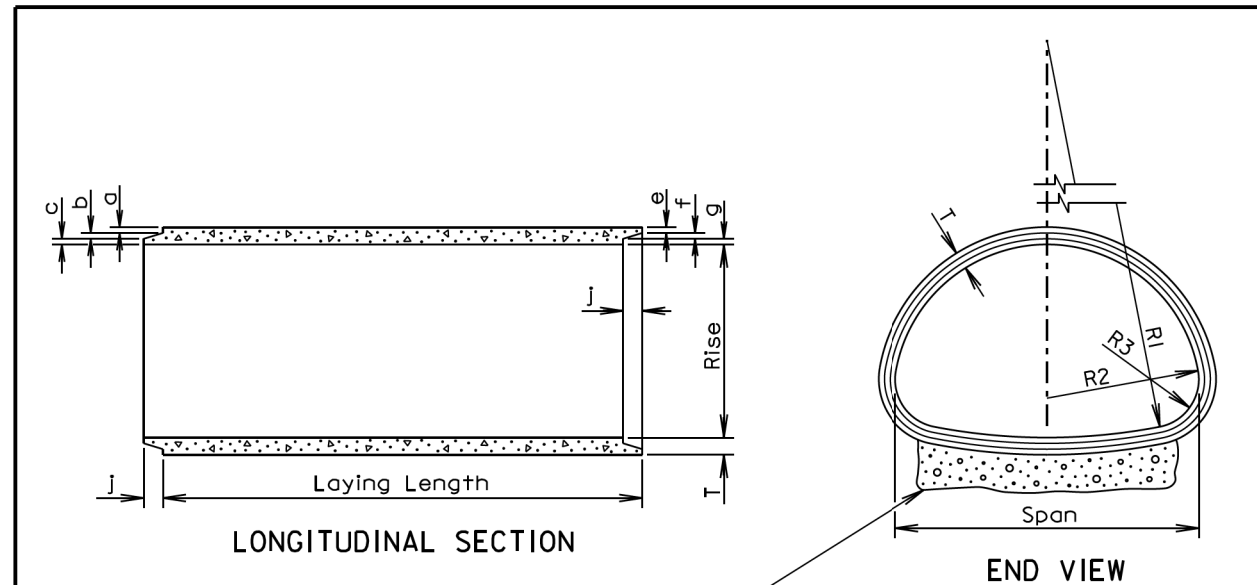
A rumble stripe will not be constructed through intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings. The lengths of the 40' segments with continuous indentations and the 12' segments without a rumble stripe adjacent to the intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

Measurement of the rumble stripe will be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble stripe will include the 12' long segments without rumble stripes and the segments adjacent to intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings without rumble stripes. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind 8" Rumble Strip or Stripe in Asphalt Concrete".

September 14, 2019

S D D O T	8" RUMBLE STRIPE IN ASPHALT CONCRETE ON NONDIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.20
	Published Date: 3rd Qtr. 2020	Sheet 1 of 1



TOLERANCES IN DIMENSIONS

Radial dimensions at joints: $\pm 1/8"$ for 65" span or less and $\pm 1/4"$ for longer spans.
 Rise and Span: $\pm 2\%$ of tabular values.
 Length of Joint (J): $\pm 1/4"$.
 Wall thickness (T): not less than design T by more than 5% or $3/16"$, whichever is greater.
 Laying length: shall not underrun by more than $1/2"$.

Gravel Bedding Material shall be supplied for 102" to 169" spans. It shall be placed to a thickness of 6" (Min.) x 85% of the Span x Length of culvert and shall conform to the gradation requirements for gravel surfacing except material may be screened or may be plan provided material.

* Size (in.)	Approx. Wt./Ft. (lb.)	Rise (in.)	Span (in.)	T (in.)	a (in.)	b (in.)	c (in.)	j (in.)	e (in.)	f (in.)	g (in.)	R1 (in.)	R2 (in.)	R3 (in.)
18	170	13 1/2	22	2 1/2	1 3/8	3/8	3/4	2	1 1/8	3/8	1	27 1/2	13 3/4	5 1/4
24	320	18	28 1/2	3 1/2	1 5/8	1/2	1 3/8	3	1 3/8	1/2	1 5/8	40 1/16	14 3/4	4 5/8
30	450	22 1/2	36 1/4	4	1 13/16	5/8	1 9/16	3 1/2	1 9/16	5/8	1 13/16	51	18 3/4	6 1/8
36	600	26 5/8	43 3/4	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	62	22 1/2	6 1/2
42	740	31 5/16	51 1/8	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	73	26 1/4	7 3/4
48	890	36	58 1/2	5	2 1/4	3/4	2	5	2	3/4	2 1/4	84	30	8 7/8
54	1100	40	65	5 1/2	2 1/2	3/4	2 1/4	5	2 1/4	3/4	2 1/2	92 1/2	33 3/8	10
60	1400	45	73 1/2	6	3 5/16	3/4	1 5/16	5	2 3/4	3/4	2 1/2	105	37 1/2	11
72	1900	54	88	7	3 13/16	1	2 3/16	6	3 1/4	1	2 3/4	126	45	13 5/16
84	2500	62	102	8	4 1/8	1	2 7/8	6	3 1/2	1	3 1/2	162 1/2	52	14 1/2
96	3300	78	122 3/8	9	4 1/2	1	3 1/2	7	4	1	4	218	62	20
108	4200	88	138 1/2	10	5	1	4	7	4 1/2	1	4 1/2	269	70	22
120	5100	96 7/8	154	11	5 1/2	1	4 1/2	7	5	1	5	301 3/8	78	24
132	5100	106 1/2	168 3/4	10		1	4	7	4 1/2	1	4 1/2	329	85 5/8	26 7/8

* Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

Construction of R.C.P. Arch shall conform to the requirements of Section 990 of the Specifications. Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

June 26, 2015

S D D O T	REINFORCED CONCRETE PIPE ARCH	PLATE NUMBER 450.02
	Published Date: 3rd Qtr. 2020	Sheet 1 of 1

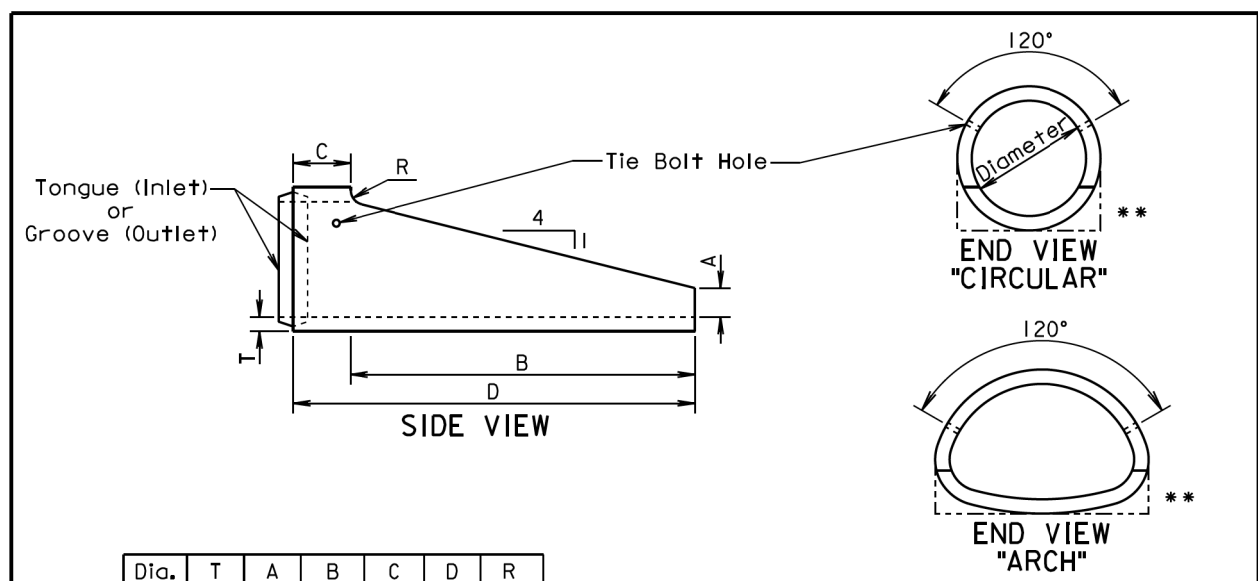
PLOT SCALE - 1:200

PLOTTED FROM - TRMLINT15

PLOT NAME - 1

FILE - ... \HANS083F\STD PLATES 083F.DGN

Plotting Date: 08/06/2020

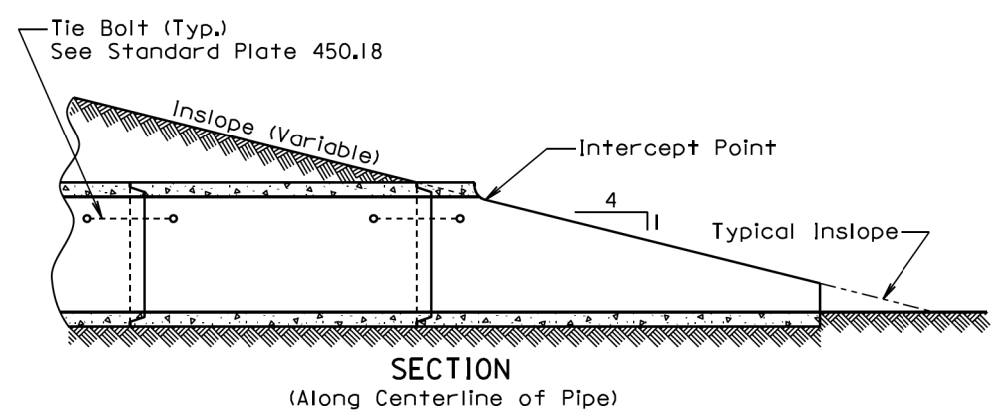


Dia. (in.)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	R (in.)
FOR CIRCULAR PIPE						
24	3	6	72	12	84	3
30	3 1/2	7 1/2	90	12	102	3 1/2
FOR ARCH PIPE						
* 24	3	6	48	12	60	3
* 30	3 1/2	7 1/2	60	12	72	3 1/2
* 36	4 1/2	8 5/8	66	30	96	0
* 42	4 1/2	10	77 1/4	18 3/4	96	0

ALTERNATE

Dia. (in.)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	R (in.)
FOR CIRCULAR PIPE						
24	3	9	72	12	84	0
30	3 1/2	11	90	12	102	0
FOR ARCH PIPE						
* 24	3	9	48	12	60	0
* 30	3 1/2	11	60	12	72	0

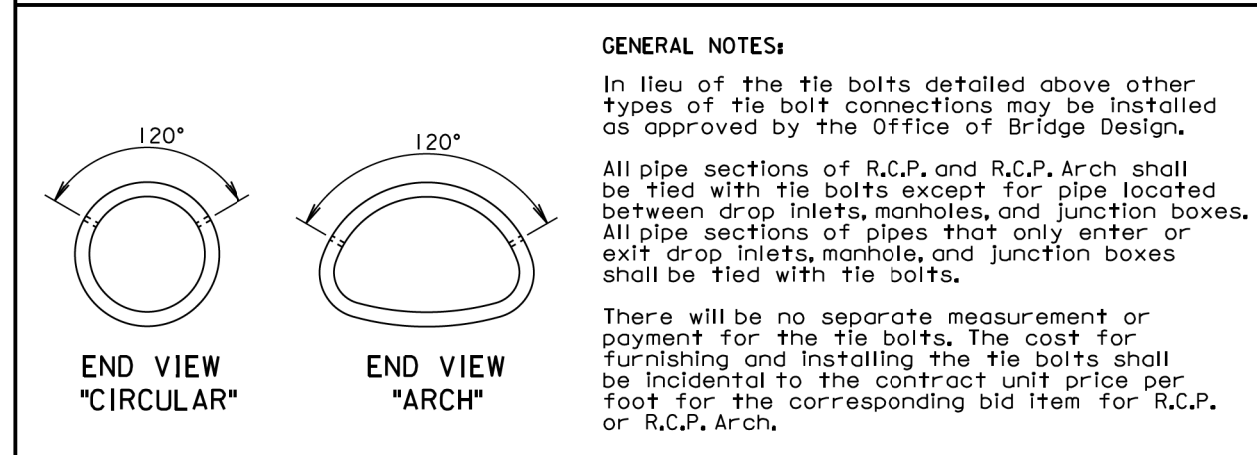
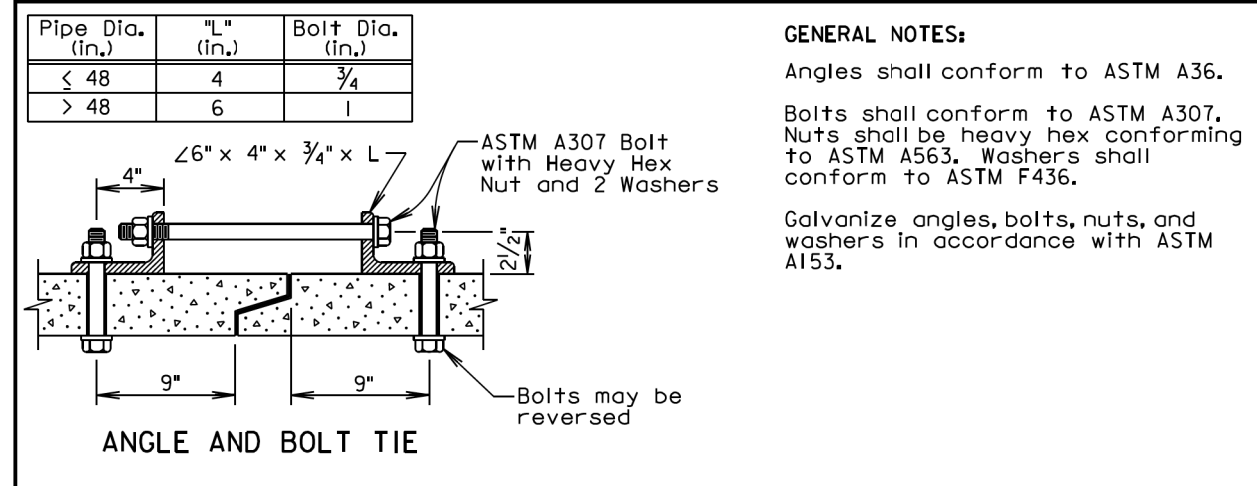
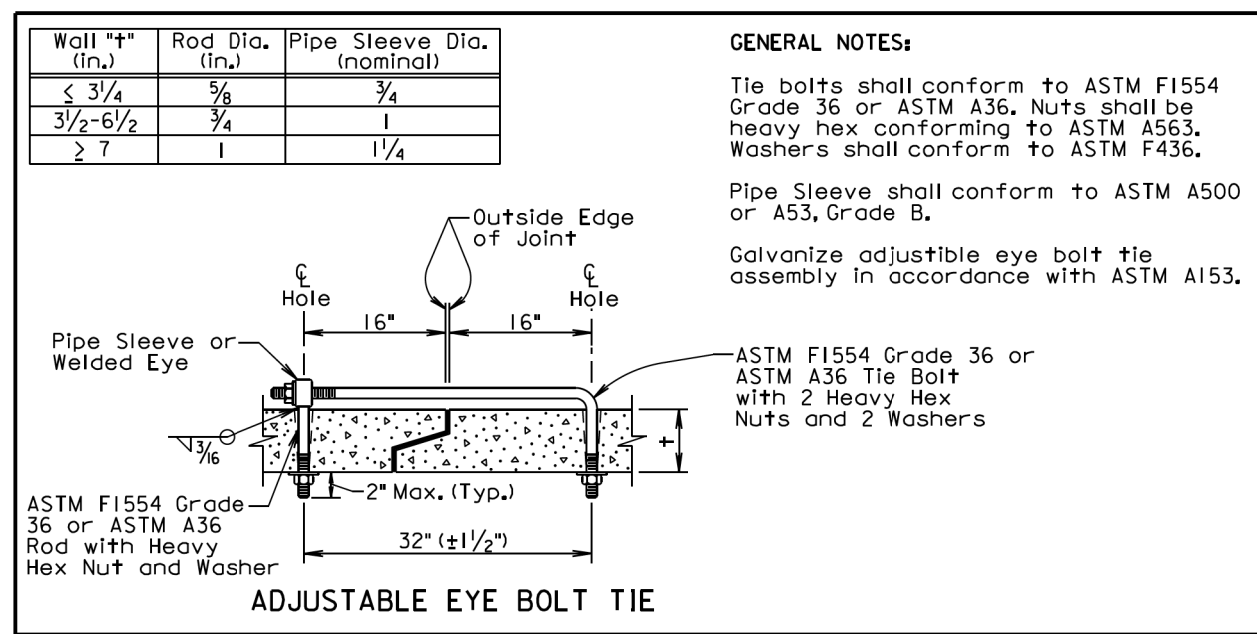
* Equivalent Diameter of Circular R.C.P.
** Acceptable Flat Bottom Alternate.



GENERAL NOTE:
The length of concrete pipe shown in the construction plans is between sloped ends.

September 22, 2006

Published Date: 3rd Qtr. 2020	S D D O T	R. C. P. SLOPED ENDS	PLATE NUMBER 450.13
			Sheet 1 of 1



February 28, 2013

Published Date: 3rd Qtr. 2020	S D D O T	TIE BOLTS FOR R.C.P. AND R.C.P. ARCH	PLATE NUMBER 450.18
			Sheet 1 of 1

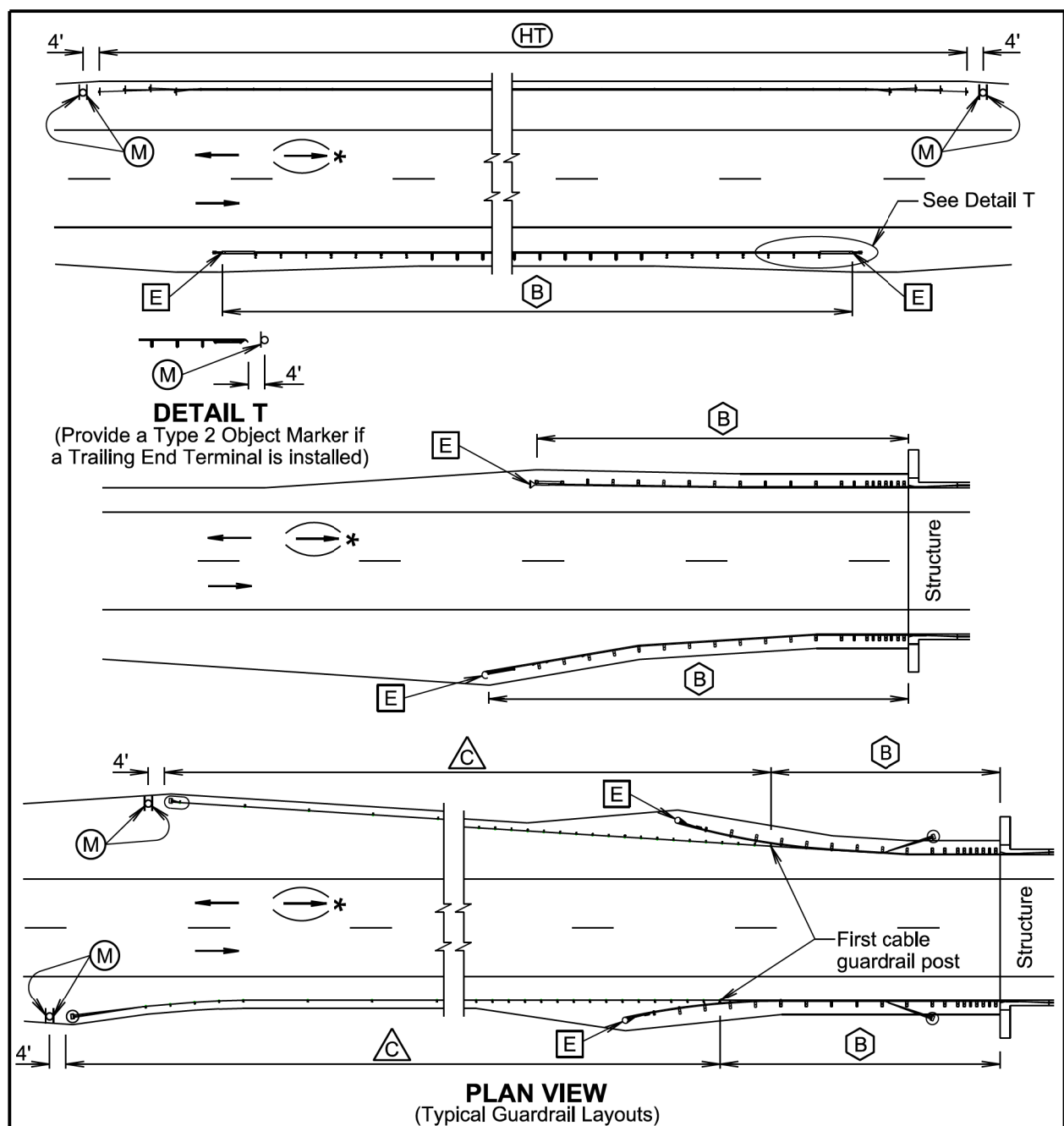
PLOT SCALE - 1:200

PLOTTED FROM - TRMLINT15

PLOT NAME - 2

FILE - ... \HANS083F\STD PLATES 083F.DGN

PLOT SCALE - 1:200



DETAIL T
(Provide a Type 2 Object Marker if a Trailing End Terminal is installed)

PLAN VIEW
(Typical Guardrail Layouts)

- B** Steel Beam Guardrail Delineation
- E** Guardrail End Terminal Object Marker
- C** 3 Cable Guardrail (Low Tension) Delineation
- HT** High Tension Cable Guardrail Delineation
- M** Type 2 Object Marker

*For two-way traffic, install delineation at the opposite end of structure the same as shown. Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

December 23, 2019

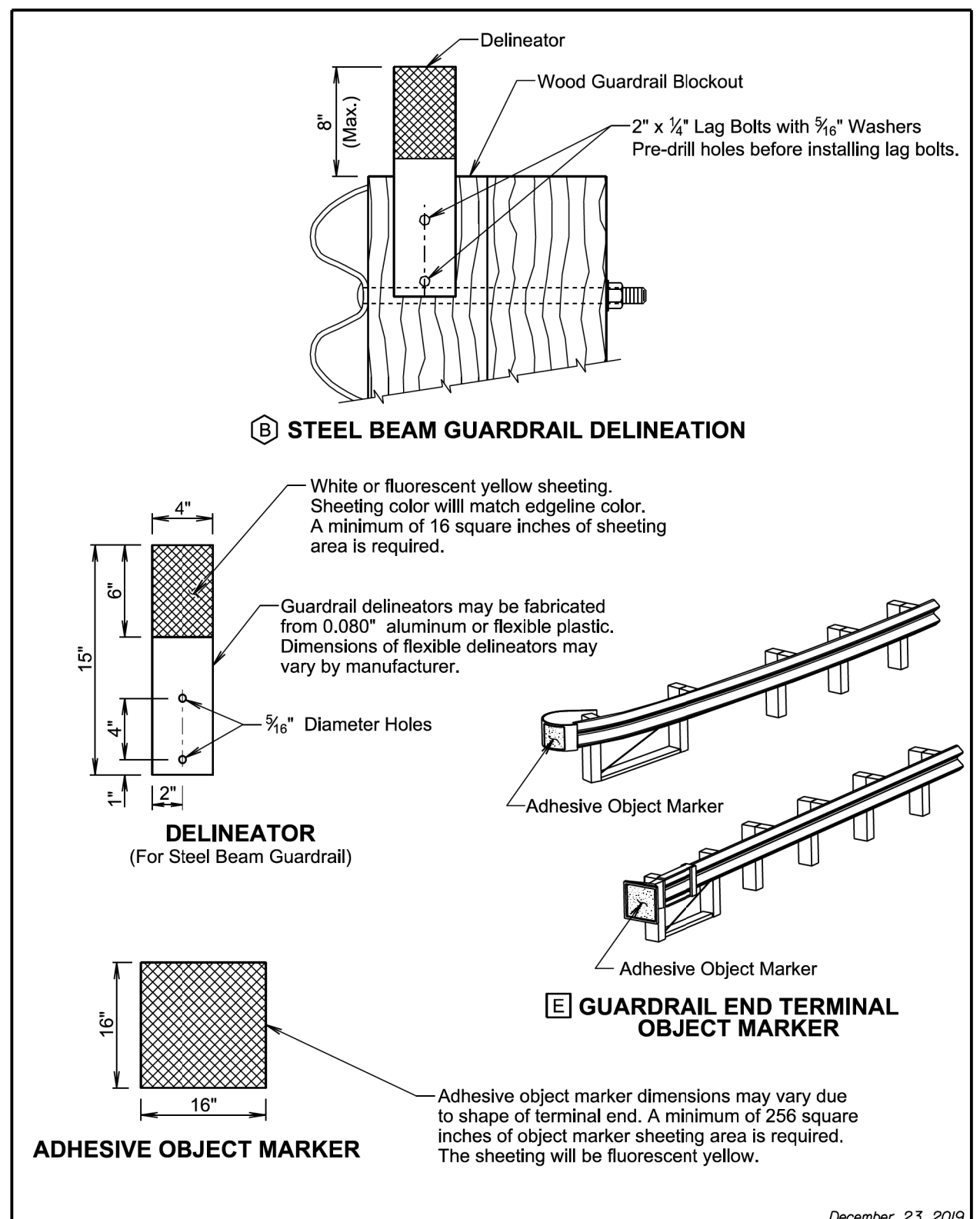
S D D O T	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 1 of 4

Published Date: 3rd Qtr. 2020

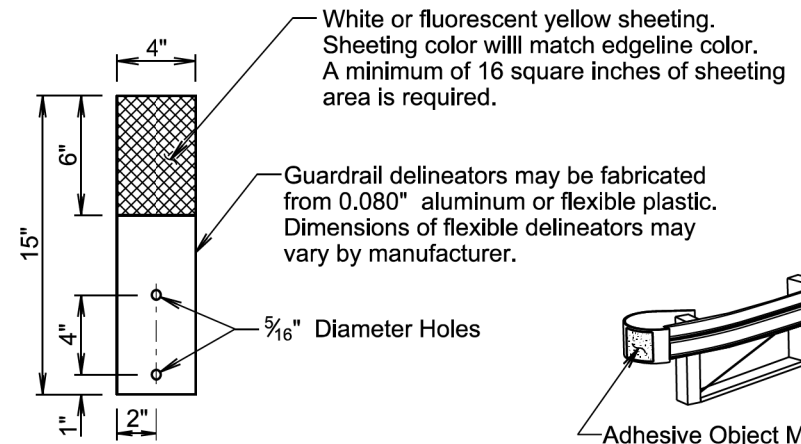
PLOT NAME - 3

FILE - ... \HANS083F\STD PLATES 083F.DGN

PLOTTED FROM - TRMLINT15

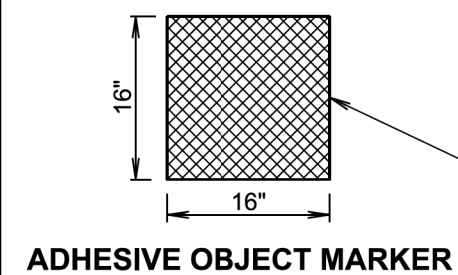


B STEEL BEAM GUARDRAIL DELINEATION



DELINEATOR
(For Steel Beam Guardrail)

E GUARDRAIL END TERMINAL OBJECT MARKER



ADHESIVE OBJECT MARKER

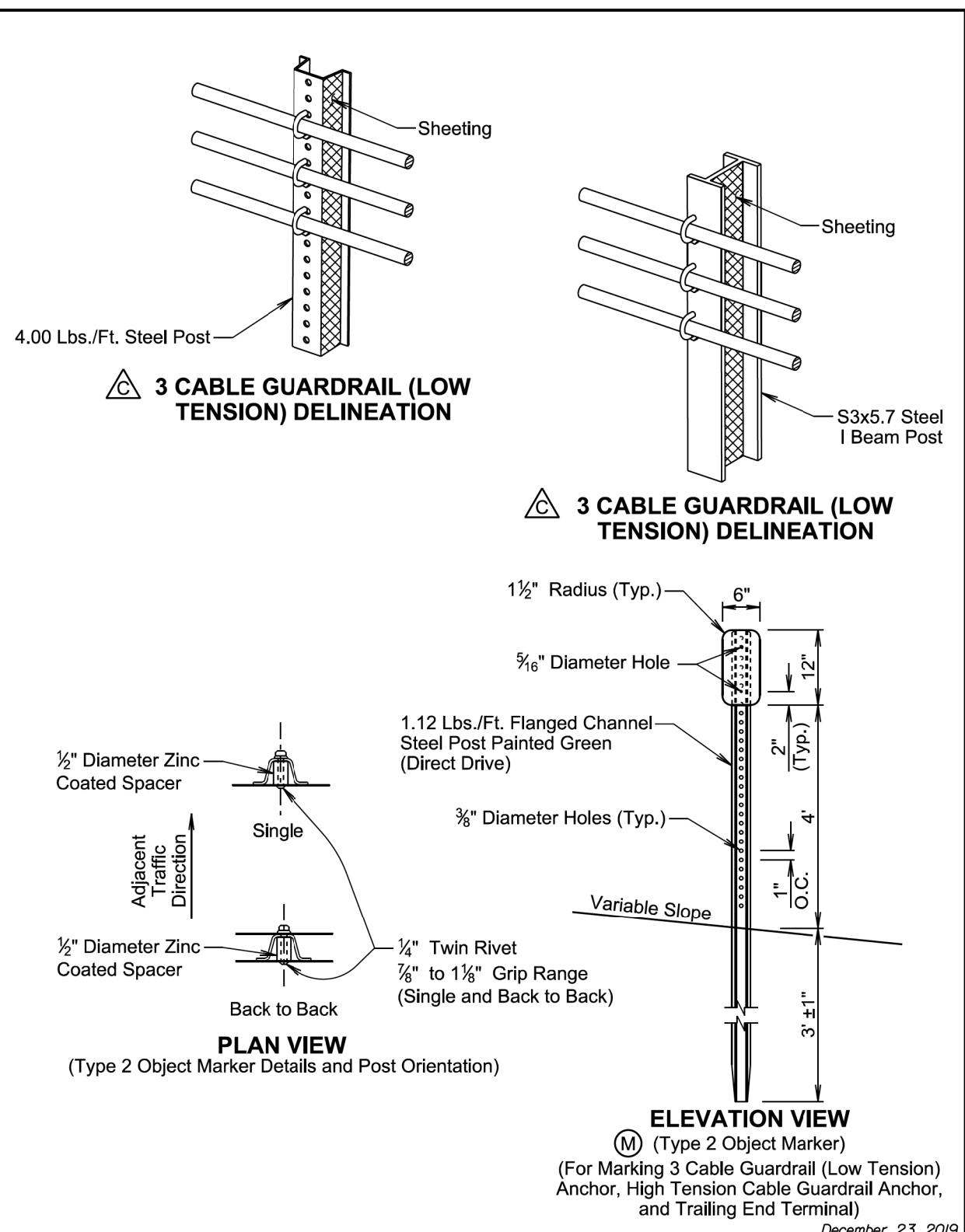
December 23, 2019

S D D O T	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 2 of 4

Published Date: 3rd Qtr. 2020

PLOT SCALE - 1:200

PLOT NAME - 4



December 23, 2019

S D D O T	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 3 of 4

Published Date: 3rd Qtr. 2020

GENERAL NOTES:

The delineation of high tension cable guardrail will be reflective sheeting placed back to back on every other post cap or cable spacer. The sheeting will be type XI in conformance with ASTM D4956. The color of the reflective sheeting shall be the same as the nearest pavement marking.

The delineators for steel beam guardrail and sheeting on 3 cable guardrail (low tension) posts will be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting will be type XI in conformance with ASTM D4956. Along two-way roadways the sheeting will be on both sides of the delineators and guardrail posts and will be white in color. For one-way roadways the sheeting will only be required on the side facing traffic and the color will be the same as the nearest pavement marking, yellow on the left side of the roadway and white on the right side.

When steel beam guardrail is attached to a bridge the first delineator will be attached to the post nearest the bridge.

At bridges with guardrail less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object marker. The spacing between the delineators will be approximately one third of the length of the guardrail.

At bridges with guardrail 200 feet and greater in length, including bridges that have steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

Steel beam guardrail that is not attached to a bridge and is less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object markers. The spacing between the delineators will be approximately one third of the length of the guardrail.

Steel beam guardrail that is not attached to a bridge and is 200 feet and greater in length, including steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation on 3 cable guardrail and steel beam guardrail will be included in the contract unit price per each for "Guardrail Delineator".

All costs for furnishing and installing the reflective sheeting on the cable spacers or post caps for the high tension cable guardrail will be incidental to the respective high tension cable guardrail contract item.

An adhesive object marker will be placed on the end of the W beam guardrail or MGS end terminal. The adhesive object marker dimensions may vary due to the shape of the terminal end. A minimum of 256 square inches of object marker reflective sheeting area is required. The reflective sheeting will be fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the adhesive object marker will be incidental to various contract items.

A type 2 object marker will be placed adjacent to the 3 cable guardrail (low tension) anchor, high tension cable guardrail anchor, and trailing end terminal at the location noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") will have fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware will be included in the contract unit price per each for "Type 2 Object Marker" for single-sided and "Type 2 Object Marker Back to Back" for back to back type 2 object markers.

December 23, 2019

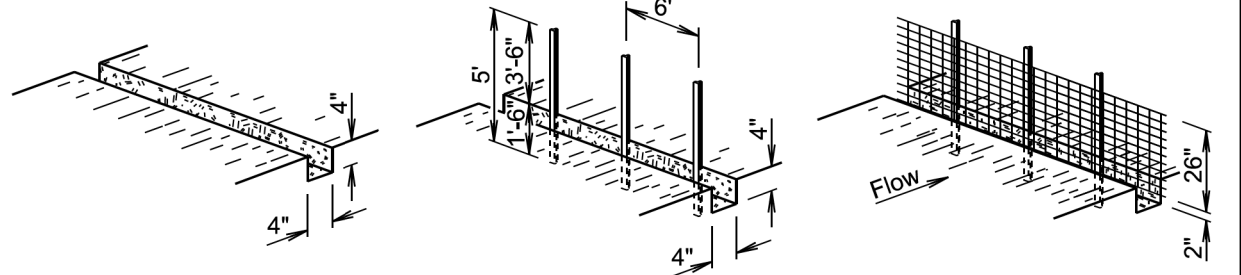
S D D O T	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 4 of 4

Published Date: 3rd Qtr. 2020

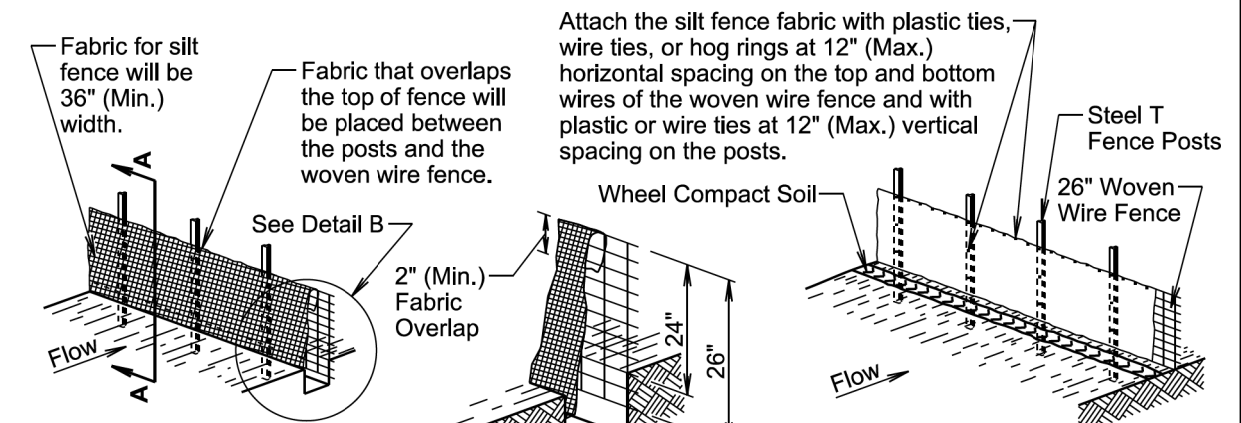
PLOTTED FROM - TRMLINT15

FILE - ... \HANS083F\STD PLATES 083F.DGN

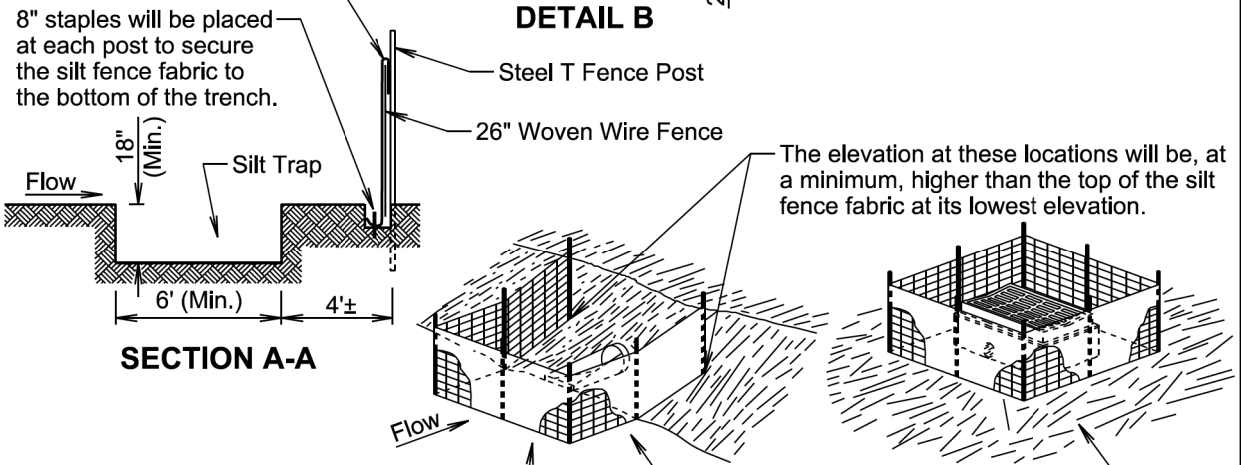
MANUAL LOW FLOW SILT FENCE INSTALLATION



- EXCAVATE TRENCH
- DRIVE STEEL T FENCE POSTS
- ATTACH 26" WOVEN WIRE FENCE TO POSTS



- ATTACH SILT FENCE FABRIC
- BACKFILL TRENCH AND WHEEL COMPACT SOIL

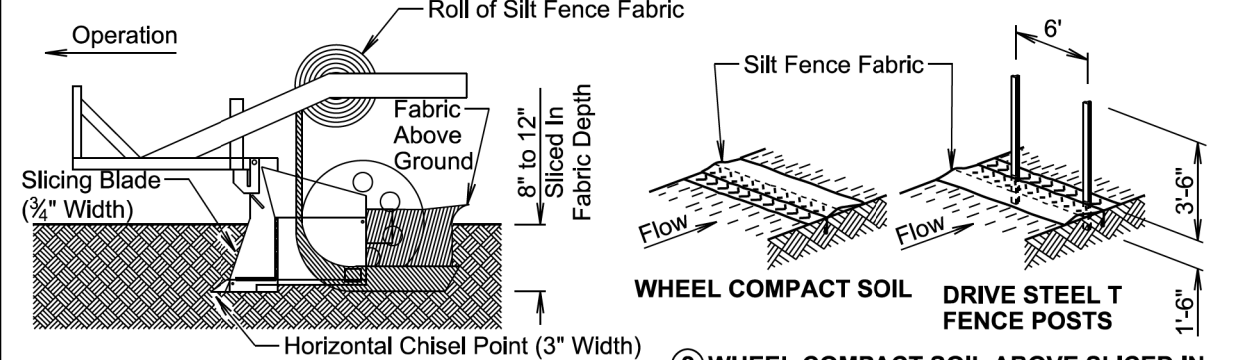


February 14, 2020

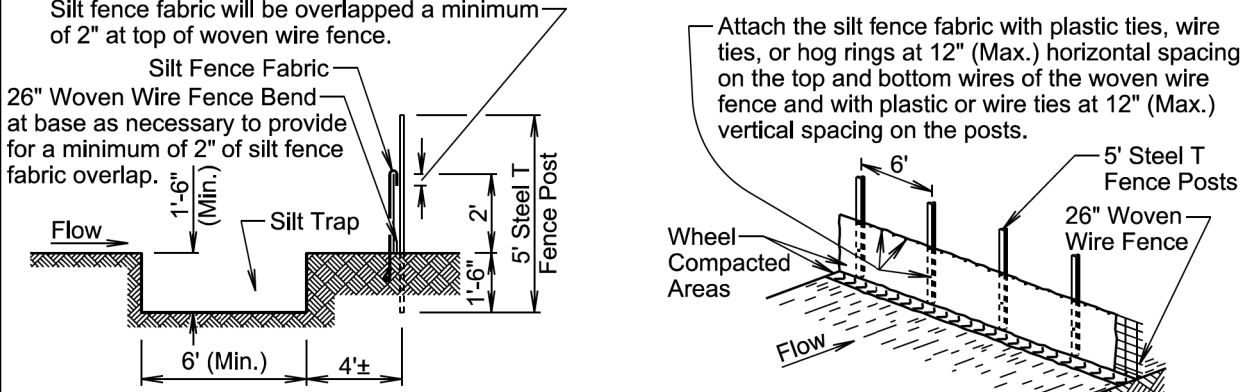
S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
		Sheet 1 of 2

Published Date: 3rd Qtr. 2020

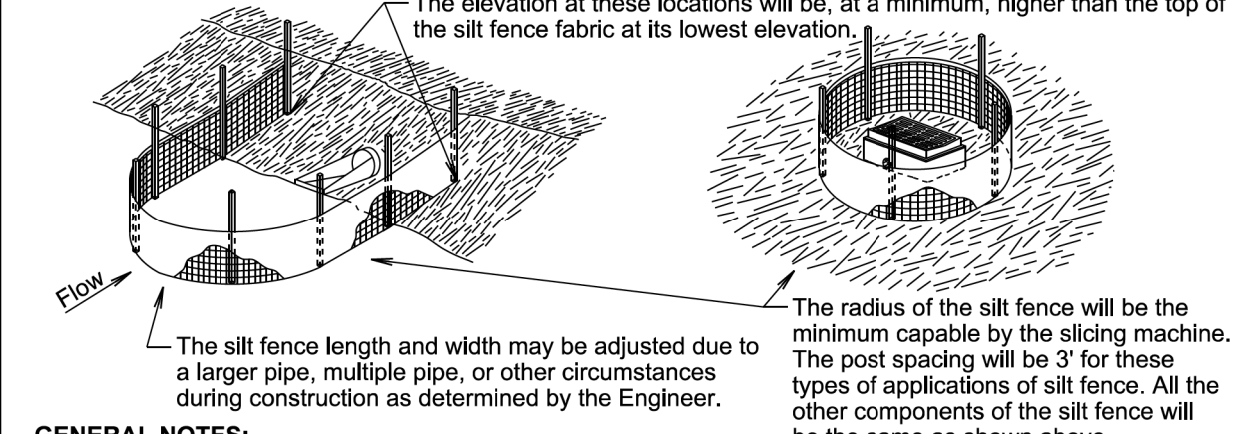
MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



- INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.
- WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



- ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.



GENERAL NOTES:

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

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

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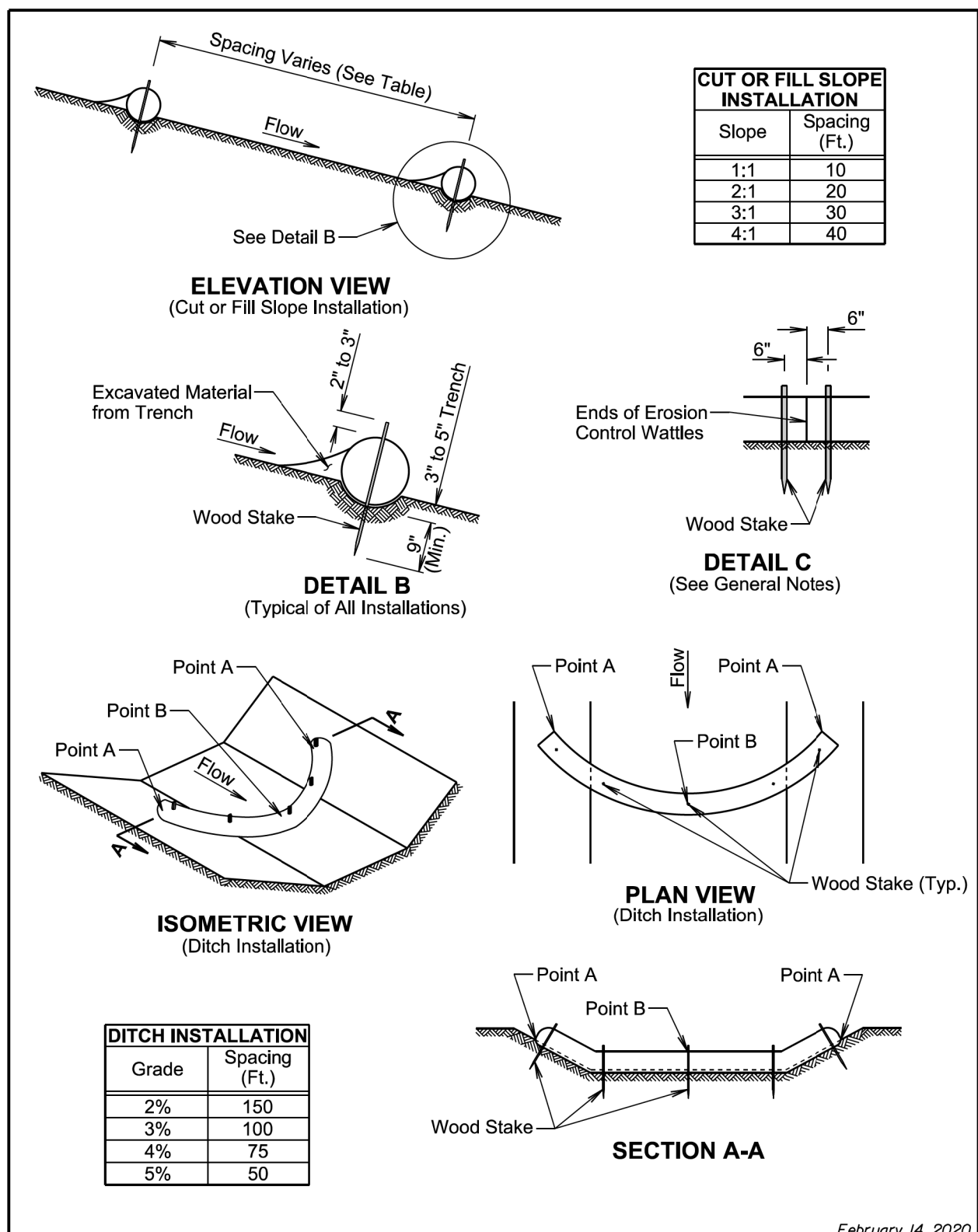
S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
		Sheet 2 of 2

Published Date: 3rd Qtr. 2020

PLOT SCALE - 1:200

PLOT NAME - 6

FILE - ... \HANS083F\STD PLATES 083F.DGN



February 14, 2020

February 14, 2020

Published Date: 3rd Qtr. 2020	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

Published Date: 3rd Qtr. 2020	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

GENERAL NOTES:

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

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

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

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

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

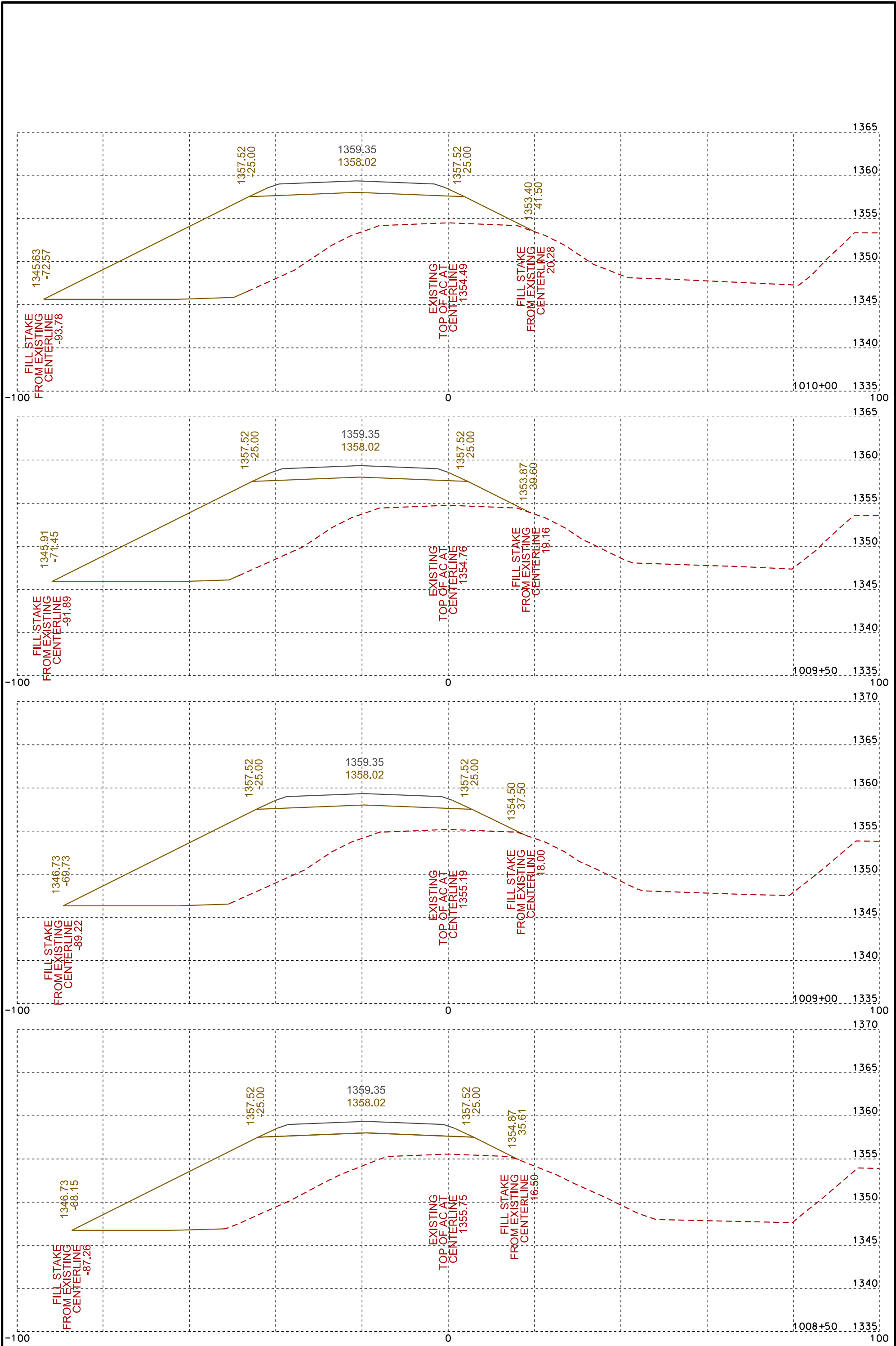
The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

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

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

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

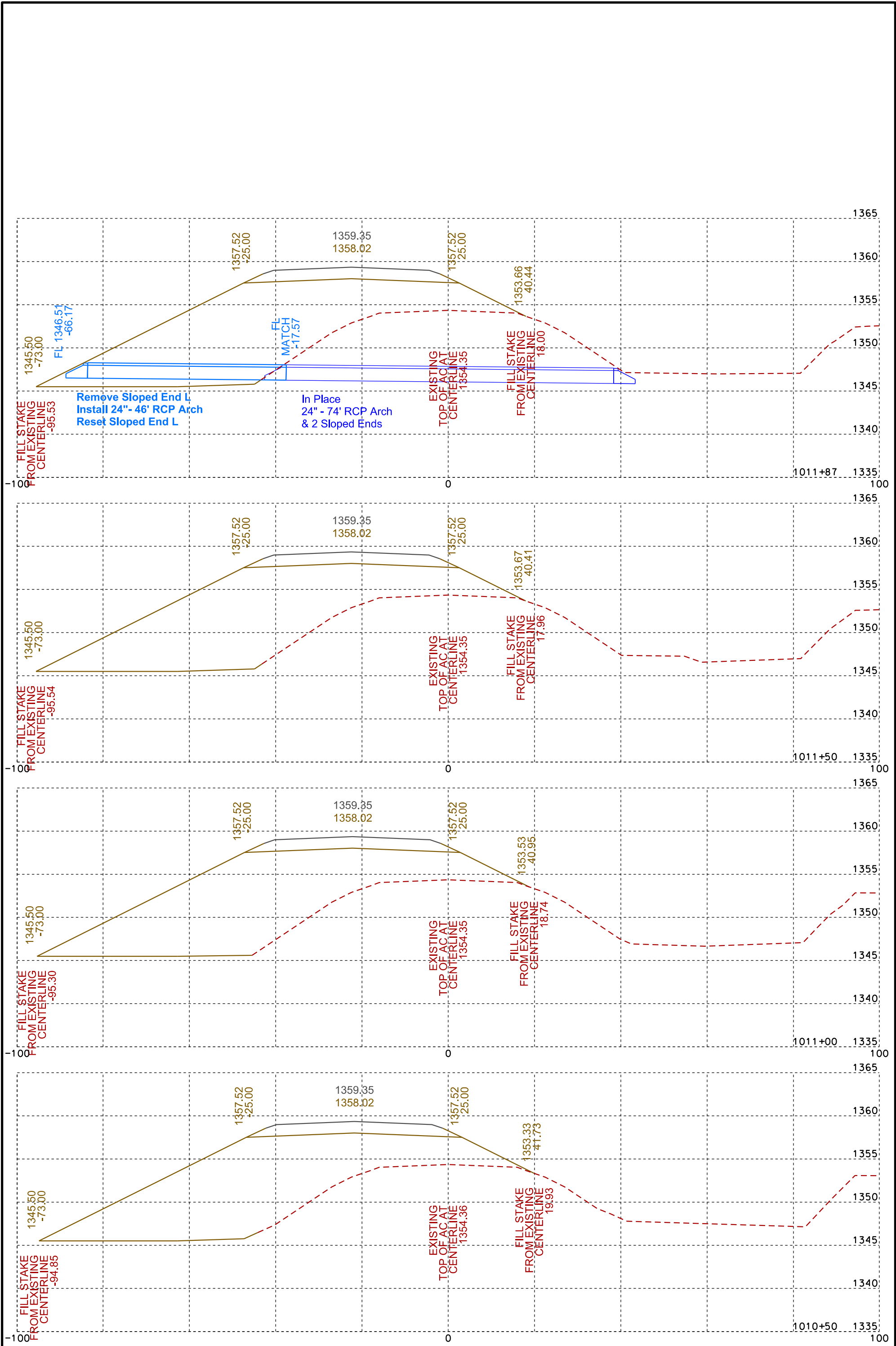
PLOTTED FROM - TRMLINT15



Cross Sections not available prior to 1008+50

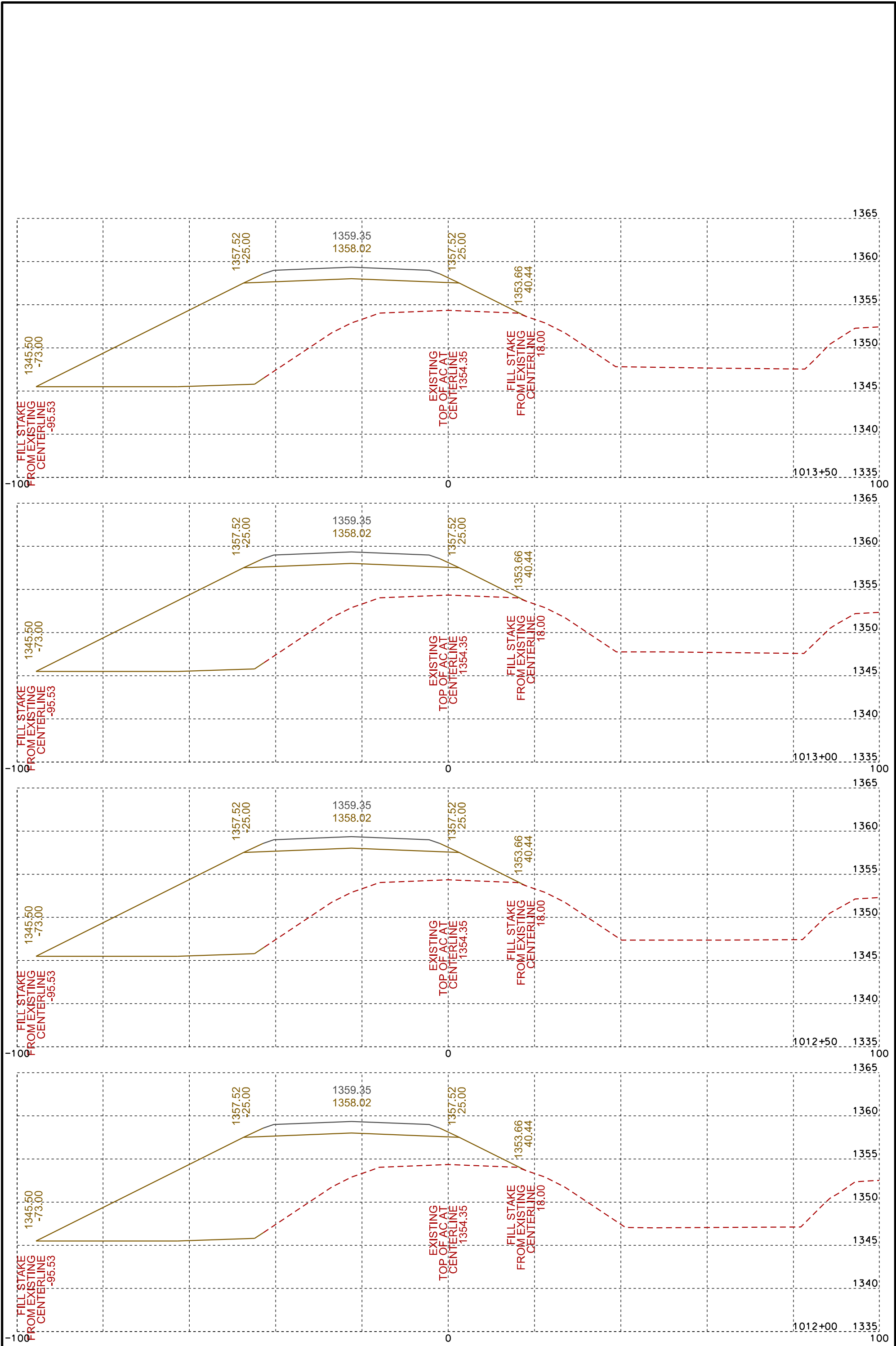
Plotting Date: 08/06/2020

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	40	45



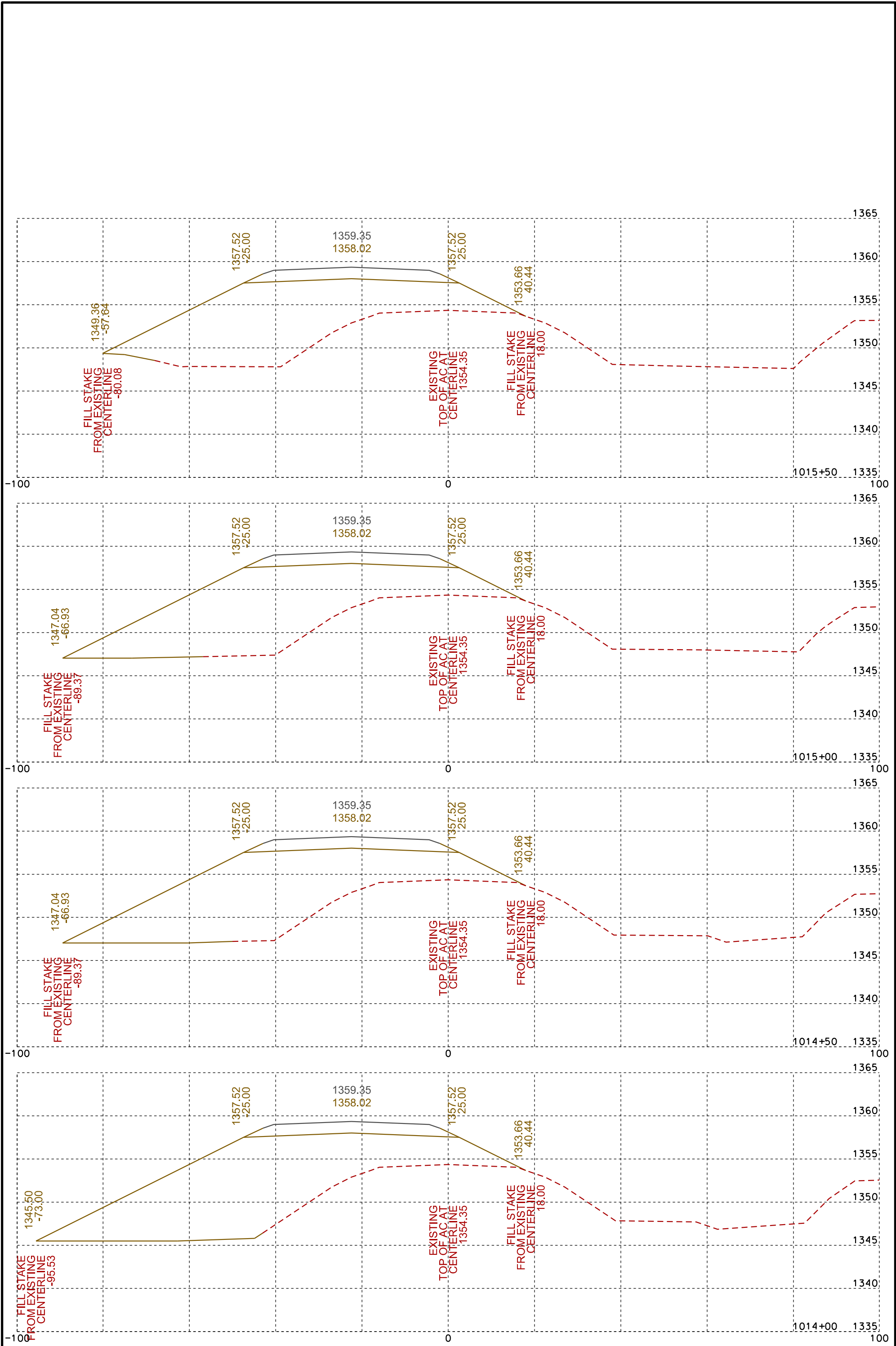
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	41	45

Plotting Date: 08/06/2020



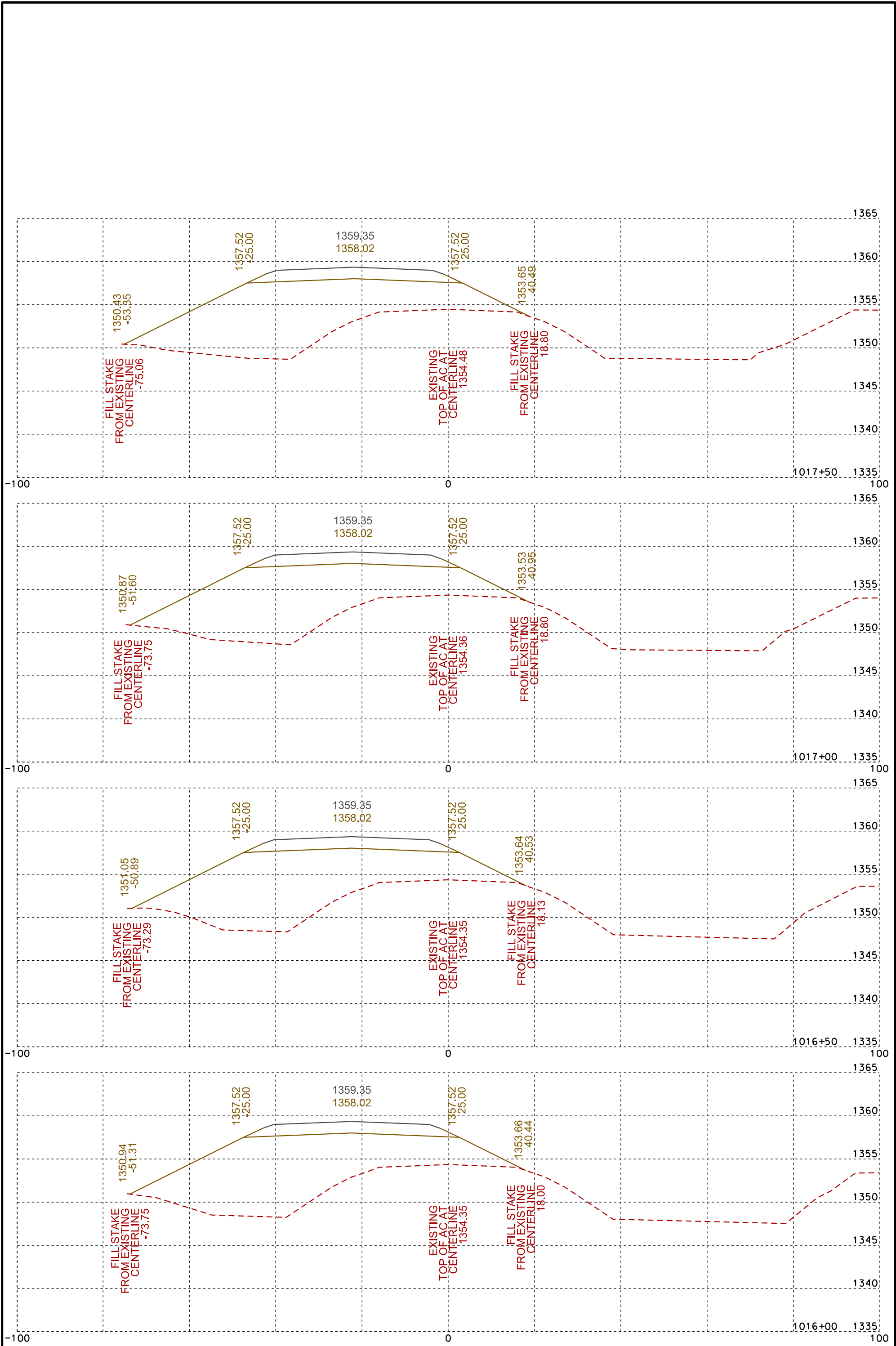
Plotting Date: 08/06/2020

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	42	45



Plotting Date: 08/06/2020

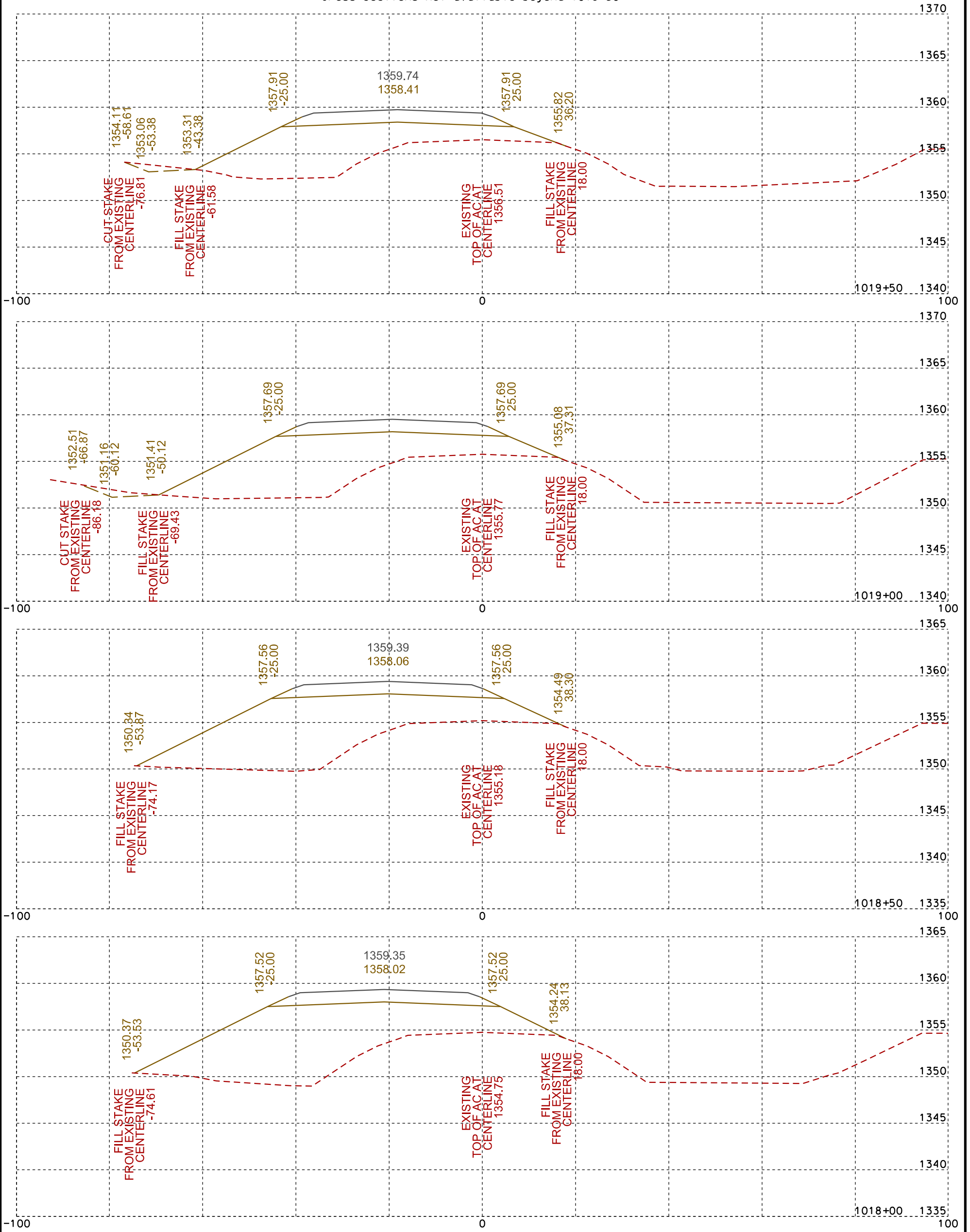
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	43	45



Plotting Date: 08/06/2020

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	44	45

Cross Sections not available beyond 1019+50



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ER-P 0262(09)360	45	45

Plotting Date: 08/06/2020