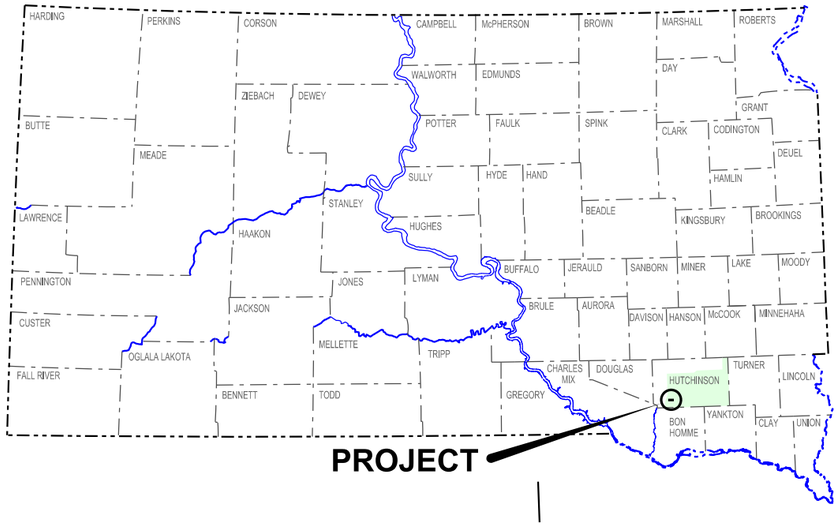
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	1	37

Plotting Date: 06/09/2015

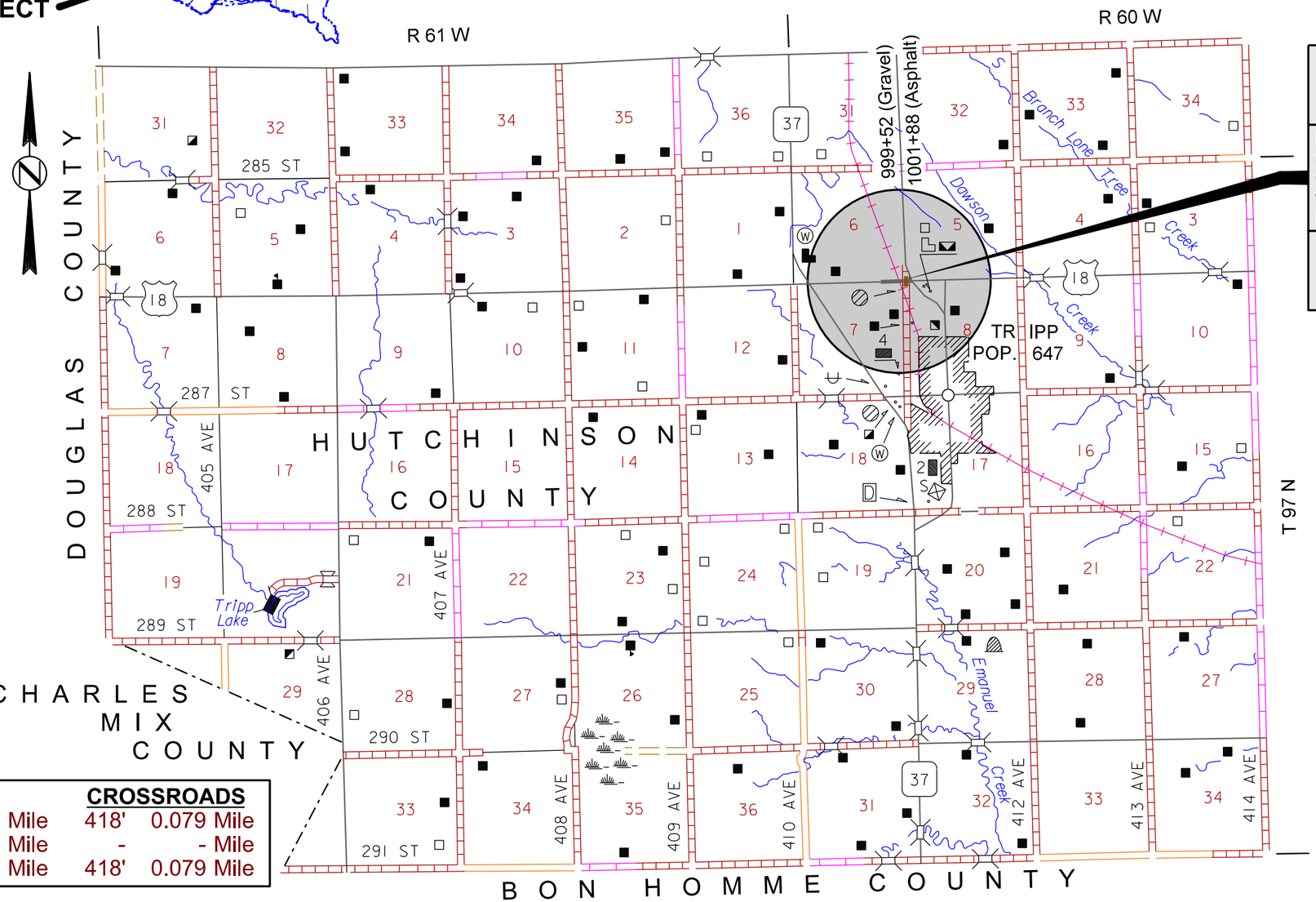
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT 018–292
US HIGHWAY 18
HUTCHINSON COUNTY

MINOR GRADING,
SALVAGING & REPLACING ASPHALT MIX & GRANULAR MATERIAL,
ASPHALT CONCRETE RESURFACING, CULVERT EXTENSION,
PAVEMENT MARKING & SIGNING
PCN I3R3

INDEX OF SHEETS



PLOT SCALE - 1:5600



BEGIN PROJECT
STA. 990+50
MRM 374.00 +0.621

RAILROAD CROSSING
Sta. 996+10
Crossing Length: 10'
996+05 to 996+15
MRM 374.73

END PROJECT
STA. 1001+50
MRM 374.00 +0.829

DESIGN DESIGNATION	
ADT(2014)	595
ADT(2034)	670
DHV	87
D	51%
T DHV	7.8%
T ADT	17.2%
V	- MPH

STORM WATER PERMIT
(None required)

LENGTH	US18		CROSSROADS	
Gross Length:	1,100'	0.208 Mile	418'	0.079 Mile
RR Crossing:	10'	0.002 Mile	-	- Mile
Net Length:	1,090'	0.206 Mile	418'	0.079 Mile

PLOTTED FROM - TRM1INT15

PLOT NAME - 1

FILE - ....\HUCH13R3\TITLI3R3.DGN

ESTIMATE OF QUANTITIES & ENVIRONMENTAL COMMITMENTS

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.206	Mile
009E3250	Miscellaneous Staking	0.080	Mile
009E3280	Slope Staking	0.285	Mile
009E3300	Three Man Survey Crew	3.0	Hour
110E7510	Remove Pipe End Section for Reset	2	Each
120E0010	Unclassified Excavation	2,422	CuYd
120E0600	Contractor Furnished Borrow Excavation	993	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
260E1010	Base Course	1,483.0	Ton
260E1030	Base Course, Salvaged	1,465.0	Ton
260E1050	Base Course, Salvaged Asphalt Mix	565.0	Ton
270E0022	Salvage Asphalt Mix Material	565.0	Ton
270E0112	Salvage Granular Material	1,465.0	Ton
320E1200	Asphalt Concrete Composite	1,462.0	Ton
320E7008	Grind 8" Rumble Strip or Stripe in Asphalt Concrete	0.4	Mile
450E4789	36" CMP 16 Gauge, Furnish	16	Ft
450E4790	36" CMP, Install	16	Ft
450E9001	Reset Pipe End Section	2	Each
632E3520	Remove, Salvage, Relocate, and Reset Traffic Sign	5	Each
633E1300	Pavement Marking Paint, White	8	Gal
633E1305	Pavement Marking Paint, Yellow	5	Gal
634E0010	Flagging	160.0	Hour
634E0020	Pilot Car	80.0	Hour
634E0100	Traffic Control	1,598	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	6,032	Ft
734E0010	Erosion Control	Lump Sum	LS
734E0154	12" Diameter Erosion Control Wattle	200	Ft
734E0604	High Flow Silt Fence	36	Ft
998E0100	Railroad Protective Insurance	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived 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. The environmental commitments associated with this project are as follows:

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

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.

COMMITMENT B2: WHOOPING CRANE (CONTINUED)

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 pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and 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 shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

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

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall 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 State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway 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) shall 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 Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of 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 shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

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) shall be incidental to the contract unit prices for the various 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 designated option borrow sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. 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; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on 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 shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). 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.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order 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 staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	3	37

Plotting Date: 06/09/2015

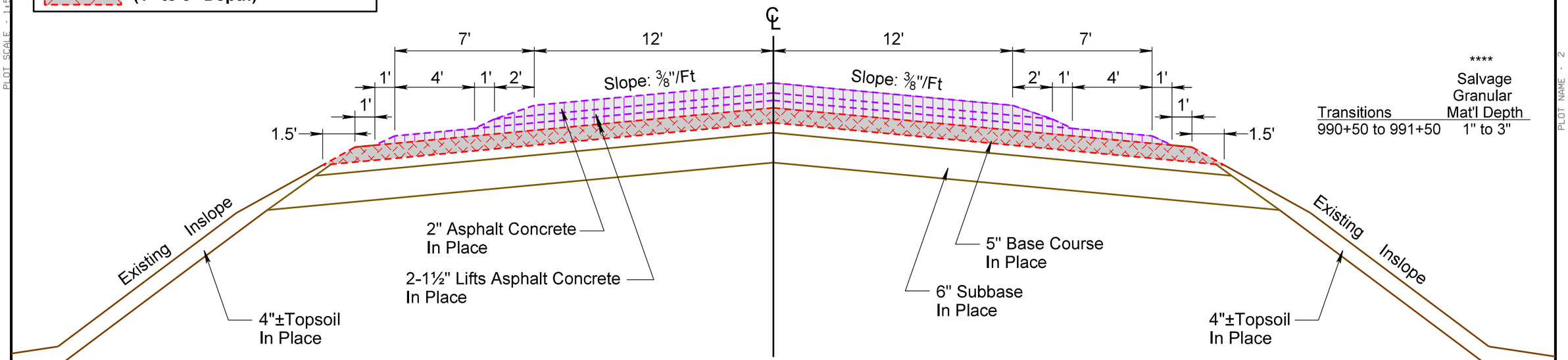
Unclassified Excavation (6" to 8" Depth)

Salvage Asphalt Mix Material (5" Depth)
Salvage Granular Material (1" to 3" Depth) ****

TYPICAL SALVAGING SECTION

SECTION 1 - BEGIN LOWERING WEST OF THE RR CROSSING

990+50 to 991+50



****

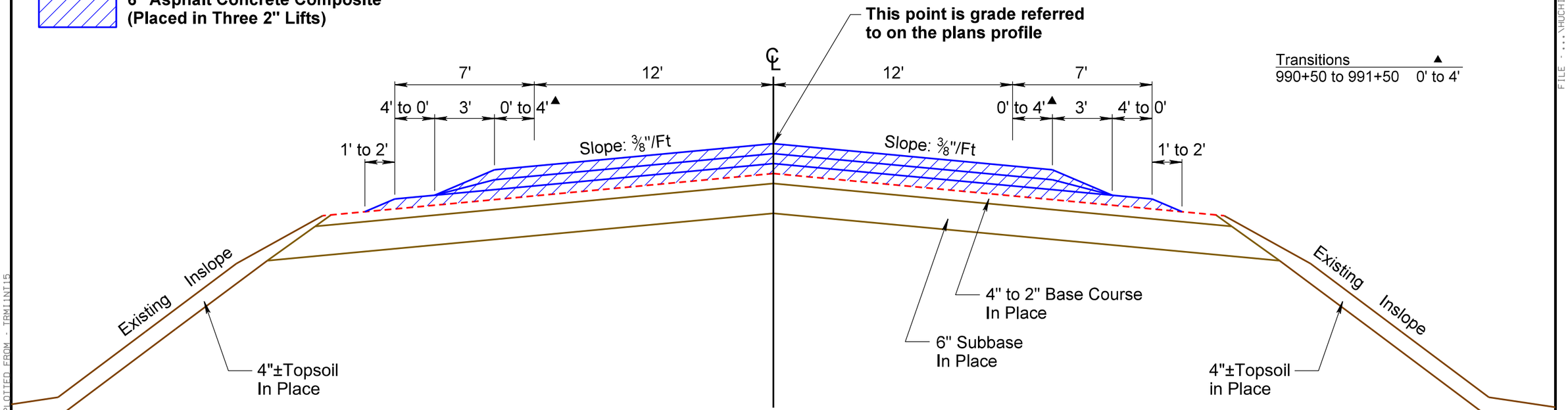
Transitions	Salvage Granular Mat'l Depth
990+50 to 991+50	1" to 3"

TYPICAL RESURFACING SECTION

SECTION 1 - BEGIN LOWERING WEST OF THE RR CROSSING

990+50 to 991+50

6" Asphalt Concrete Composite (Placed in Three 2" Lifts)



Transitions	▲
990+50 to 991+50	0' to 4'

PLOT SCALE - 1:5

PLOT NAME - 2

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PLOTTED FROM - TRM1INT15

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	4	37

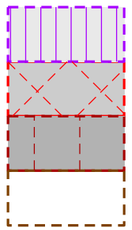
Plotting Date: 06/17/2015

TYPICAL SALVAGING SECTION

SECTION 2 - LOWERING WEST OF THE RR CROSSING

991+50 to 996+05

Unclassified Excavation (8" to 42" to 36" to 18" Depth)

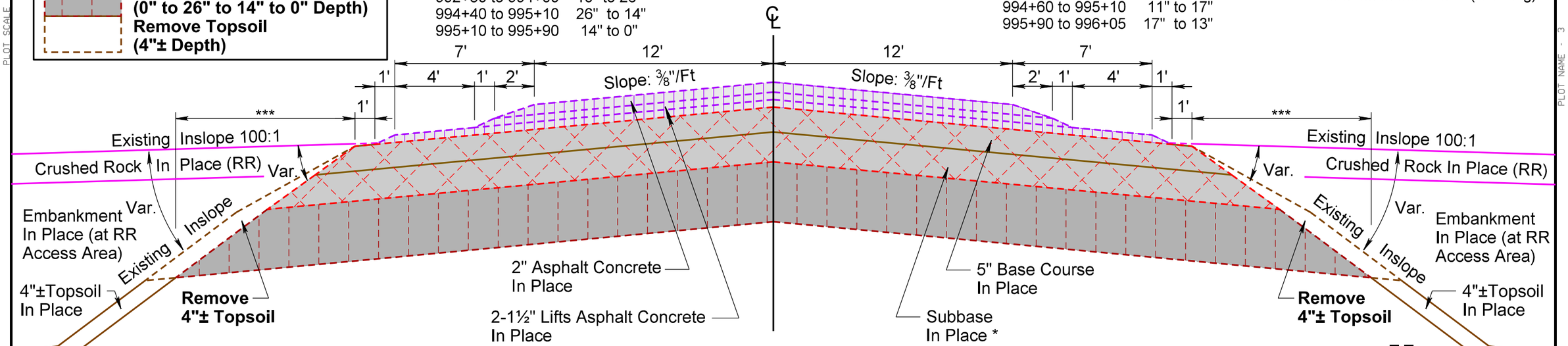


Salvage Asphalt Mix Material (5" Depth)
Salvage Granular Material ** (3" to 11" to 17" to 13" Depth)**
Remove Fill Material ✦ (0" to 26" to 14" to 0" Depth)
Remove Topsoil (4"± Depth)

Transitions	✦ Remove Fill Mat'l Depth
991+94 to 992+50	0" to 10"
992+50 to 994+00	10" to 26"
994+40 to 995+10	26" to 14"
995+10 to 995+90	14" to 0"

Transitions	**** Salvage Granular Mat'l Depth
991+50 to 991+94	3" to 11"
994+60 to 995+10	11" to 17"
995+90 to 996+05	17" to 13"

Existing Subbase	* Depth
991+50 to 994+60	6"
994+60 to 995+10	6" to 12"
995+10 to 996+05	12"
996+05 to 996+15	(RR Xing)



TYPICAL RESURFACING SECTION

SECTION 2 - LOWERING WEST OF THE RR CROSSING

991+50 to 996+05

6" Asphalt Concrete Composite (Placed in Three 2" Lifts)

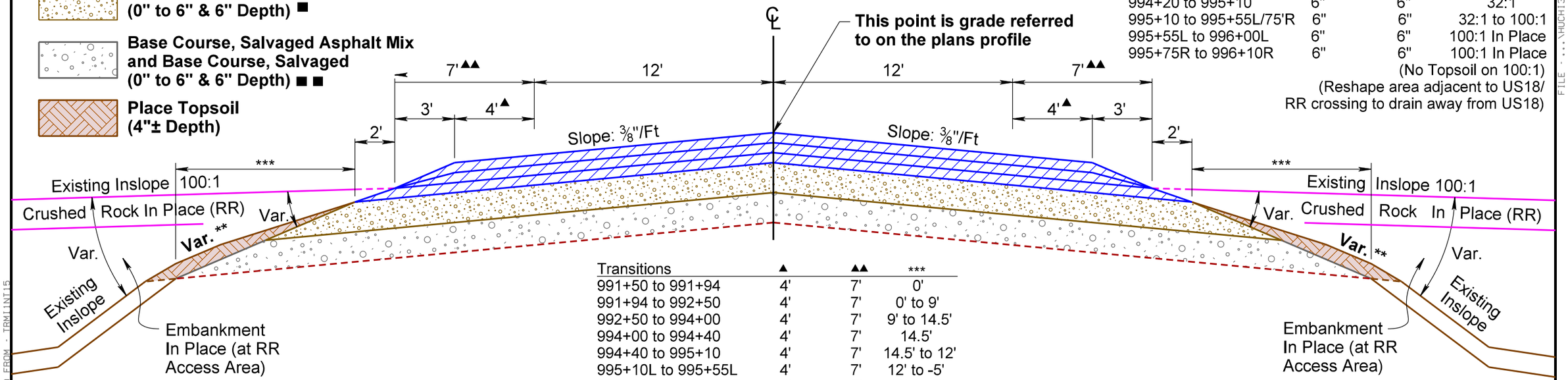
Base Course (0" to 6" & 6" Depth) ■

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (0" to 6" & 6" Depth) ■ ■

Place Topsoil (4"± Depth)

Transitions	■ Base Course Depth	■■ Base Course, Salv Asph Mix & Salv Depth	**
991+50 to 992+50	0" to 6"	0" to 6"	4:1 to 7:1
992+50 to 994+20	6"	6"	7:1 to 32:1
994+20 to 995+10	6"	6"	32:1
995+10 to 995+55L/75'R	6"	6"	32:1 to 100:1
995+55L to 996+00L	6"	6"	100:1 In Place
995+75R to 996+10R	6"	6"	100:1 In Place

(No Topsoil on 100:1)
(Reshape area adjacent to US18/ RR crossing to drain away from US18)



Transitions	▲	▲▲	***
991+50 to 991+94	4'	7'	0'
991+94 to 992+50	4'	7'	0' to 9'
992+50 to 994+00	4'	7'	9' to 14.5'
994+00 to 994+40	4'	7'	14.5'
994+40 to 995+10	4'	7'	14.5' to 12'
995+10L to 995+55L	4'	7'	12' to -5'
995+10R to 995+75R	4'	7'	12' to -5'
995+55L to 996+00L	4' to 6'	7' to 9'	-5' (No Excavation or placement of granular material beyond 16' from ℄).
995+75R to 996+10R	4' to 12'	7' to 15'	-5' (No Excavation or placement of granular material beyond 16' from ℄).

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5
PLOT NAME - 3
PLOTTED FROM - TRM11NT15
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	5	37

Plotting Date: 06/09/2015

TYPICAL SALVAGING SECTION

SECTION 3 - EAST OF THE RR CROSSING

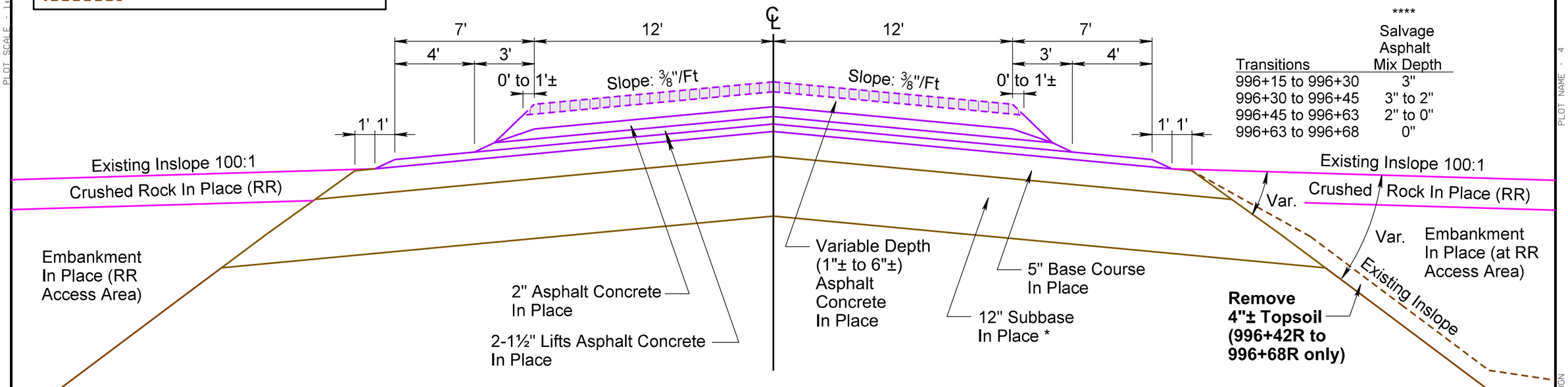
996+15 to 996+68

Unclassified Excavation (3" to 0" Depth)

Salvage Asphalt Mix Material (3" & 3" to 0" Depth) ****
Remove Topsoil (4"± Depth) (996+42R to 996+68R only)

Existing Subbase	* Depth (RR Xing)
996+05 to 996+15	
996+15 to 996+68	12"

Transitions	**** Salvage Asphalt Mix Depth
996+15 to 996+30	3"
996+30 to 996+45	3" to 2"
996+45 to 996+63	2" to 0"
996+63 to 996+68	0"



TYPICAL RESURFACING SECTION

SECTION 3 - EAST OF THE RR CROSSING

996+15 to 996+68

2" Asphalt Concrete Composite (3" Depth on Shoulders)

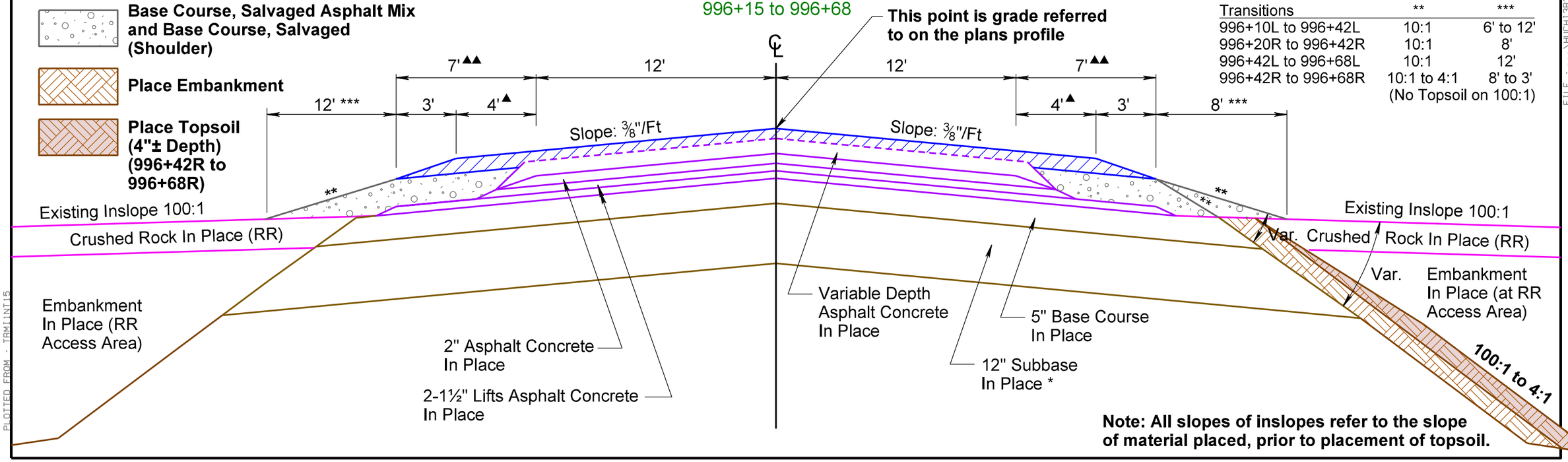
Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (Shoulder)

Place Embankment

Place Topsoil (4"± Depth) (996+42R to 996+68R)

Transitions	▲	▲▲
996+10L to 996+42L	9' to 4'	12' to 7'
996+20R to 996+42R	9' to 4'	12' to 7'

Transitions	**	***
996+10L to 996+42L	10:1	6' to 12'
996+20R to 996+42R	10:1	8'
996+42L to 996+68L	10:1	12'
996+42R to 996+68R	10:1 to 4:1 (No Topsoil on 100:1)	8' to 3'



Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 4

FILE - ...\HUCH13R3\TSECT3R3.DGN

PLOTTED FROM - TRMI1NT15

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	6	37

Plotting Date: 06/09/2015

TYPICAL SALVAGING SECTION

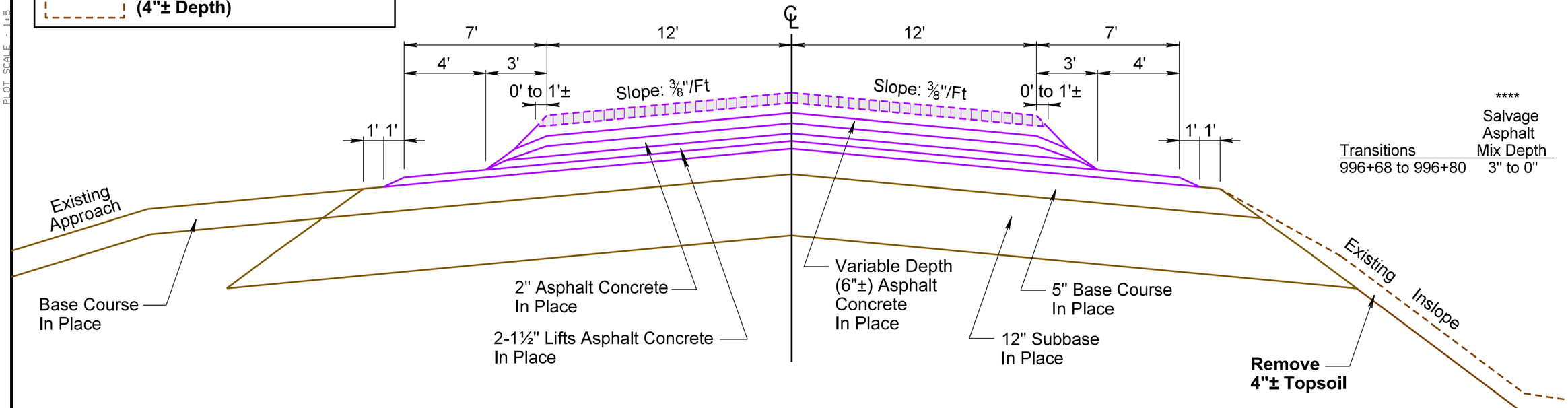
SECTION 4 - EAST OF THE RR CROSSING

996+68 to 996+80

Unclassified Excavation (3" to 0" Depth)

Salvage Asphalt Mix Material (3" to 0" Depth) ****

Remove Topsoil (4"± Depth)



Transitions	**** Salvage Asphalt Mix Depth
996+68 to 996+80	3" to 0"

TYPICAL RESURFACING SECTION

SECTION 4 - EAST OF THE RR CROSSING

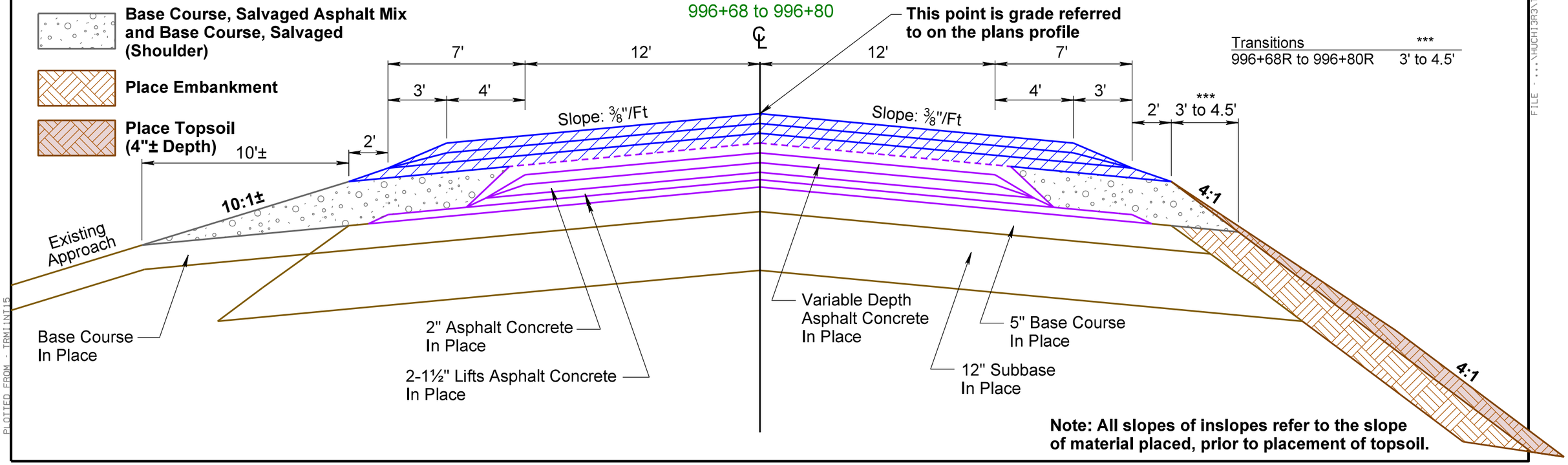
996+68 to 996+80

6" Asphalt Concrete Composite (Placed in Three 2" Lifts)

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (Shoulder)

Place Embankment

Place Topsoil (4"± Depth)



Transitions	***
996+68R to 996+80R	3' to 4.5'

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 5

FILE - ...\HUCH13R3\TSECI3R3.DGN

PLOTTED FROM - TRM1INI15

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	7	37

Plotting Date: 06/09/2015

TYPICAL GRADING & SURFACING SECTION

SECTION 5 - WIDENING & RAISING EAST OF THE RR CROSSING

996+80 to 997+10

Unclassified Excavation

Remove Topsoil (4"± Depth)

6" Asphalt Concrete Composite (Placed in Three 2" Lifts)

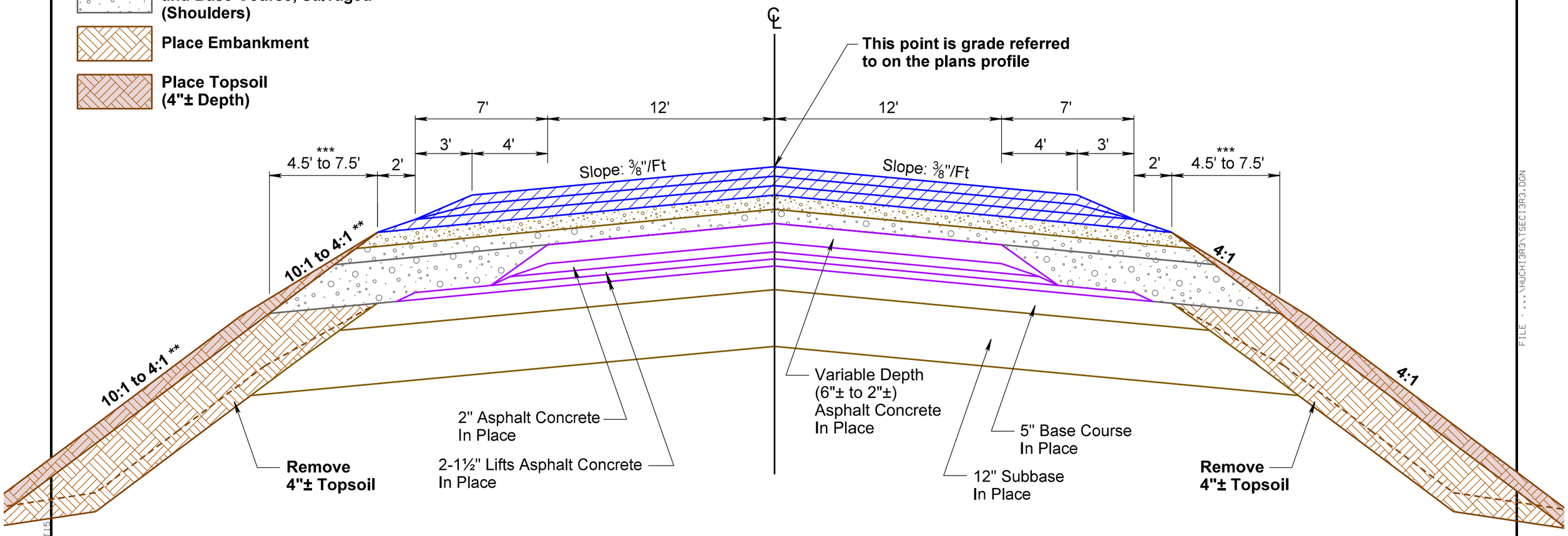
Base Course (0" to 6" Depth) ■

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (0" to 6" Depth - Mainline) ■ ■

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (Shoulders)

Place Embankment

Place Topsoil (4"± Depth)



Transitions	■ Base Course Depth	■ ■ Base Course, Salv Asph Mix & Salv Depth	**	***
996+80L to 997+10L	0" to 6"	0" to 6"	10:1 to 4:1	4.5' to 7.5'
996+80R to 997+10R	0" to 6"	0" to 6"	4:1	4.5' to 7.5'

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 6

FILE - ...\HUCH13R3\TSECT3R3.DGN

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	8	37

Plotting Date: 06/09/2015

TYPICAL GRADING & SURFACING SECTION

SECTION 6 - WIDENING & RAISING EAST OF THE RR CROSSING

997+10 to 997+60

Existing Subbase	* Depth
997+10 to 997+60	12" to 6"

Unclassified Excavation

Remove Topsoil (4"± Depth)

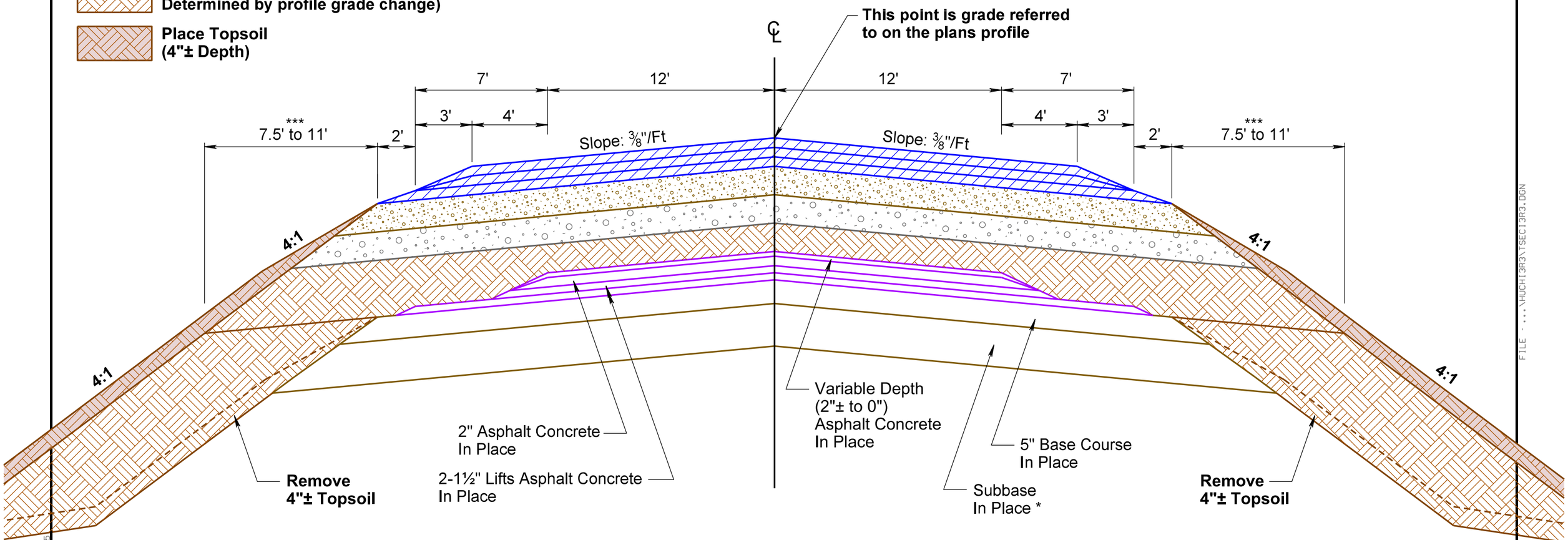
6" Asphalt Concrete Composite (Placed in Three 2" Lifts)

Base Course (6" Depth)

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (6" Depth - Mainline)

Place Embankment (Depth Variable - Determined by profile grade change)

Place Topsoil (4"± Depth)



Transitions	***
997+10 to 997+60	7.5' to 11'

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOTTED FROM - TRMIINT15

PLOT NAME - 7

FILE - ...\HUCH13R3\TSEC13R3.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	9	37

Plotting Date: 06/09/2015

TYPICAL GRADING & SURFACING SECTION

SECTION 7 - WIDENING & RAISING EAST OF THE RR CROSSING

997+60 to 999+82

Unclassified Excavation

Remove Topsoil (4"± Depth)

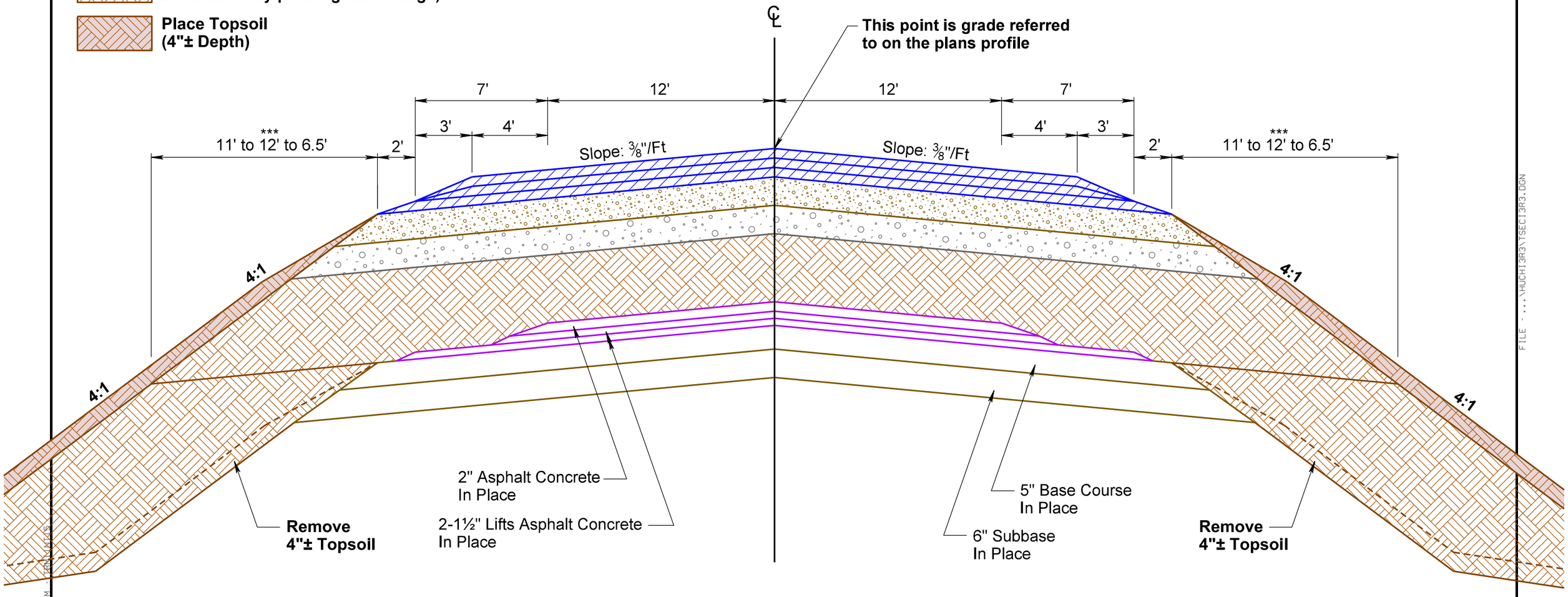
6" Asphalt Concrete Composite (Placed in Three 2" Lifts)

Base Course (6" Depth)

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (6" Depth - Mainline)

Place Embankment (Depth Variable - Determined by profile grade change)

Place Topsoil (4"± Depth)



Transitions	***
997+60 to 998+20	11' to 12'
998+20 to 999+82	12' to 6.5'

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 8

FILE - ...\HUCH13R3\TSECI3R3.DGN

PLOTTED FROM - FRAMMTAS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	10	37

Plotting Date: 06/09/2015

TYPICAL GRADING & SURFACING SECTION

SECTION 8 - WIDENING & RAISING EAST OF THE RR CROSSING

999+82 to 1000+65

Unclassified Excavation

Remove Topsoil (4"± Depth)

6" Asphalt Concrete Composite (Placed in Three 2" Lifts)

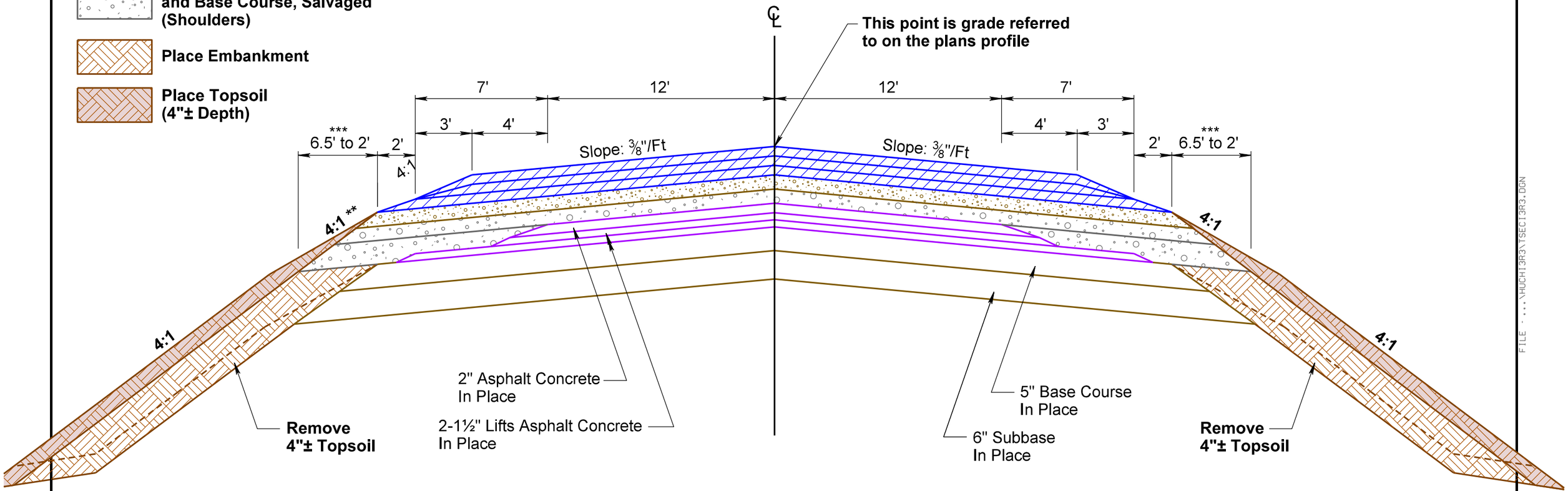
Base Course (6" to 0" Depth) ■

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (6" to 0" Depth - Mainline) ■ ■

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (Shoulders)

Place Embankment

Place Topsoil (4"± Depth)



Transitions	■ Base Course Depth	■■ Base Course Salv. Asphalt Mix Depth	***
999+82 to 1000+65	6" to 0"	6" to 0"	6.5' to 2'

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 9

FILE - ...\HUCH13R3\TSECT3R3.DGN

PLOTTED FROM - TRM1INT15

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	11	37

Plotting Date: 06/09/2015

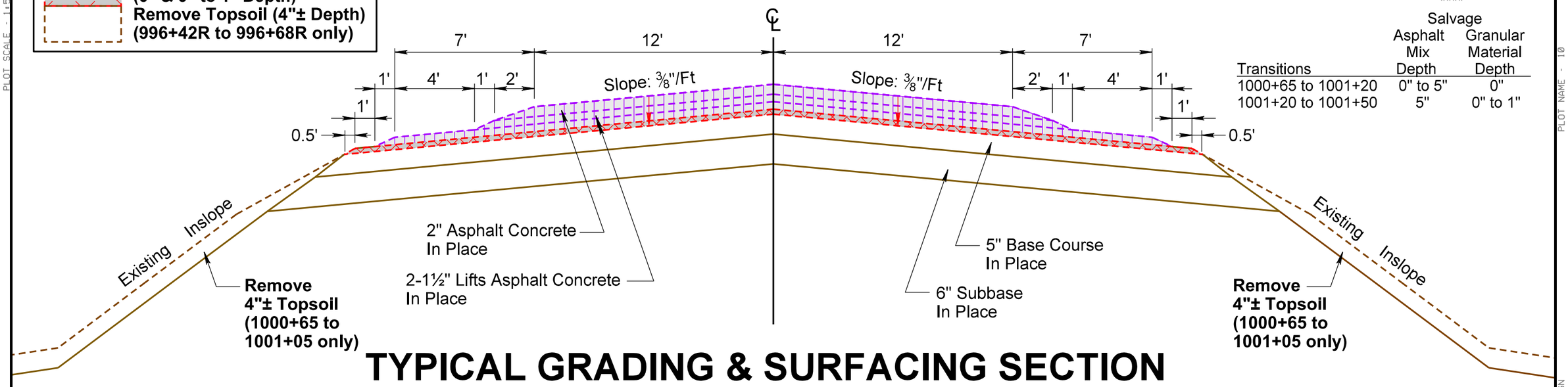
TYPICAL SALVAGING SECTION

SECTION 9 - END WIDENING & RAISING EAST OF THE RR CROSSING

1000+65 to 1001+50

Unclassified Excavation (6" to 8" Depth)

Salvage Asphalt Mix Material (0" to 5" & 5" Depth) ****
Salvage Granular Material (0" & 0" to 1" Depth) ****
Remove Topsoil (4"± Depth) (996+42R to 996+68R only)



****

Transitions	Salvage Asphalt Mix Depth	Salvage Granular Material Depth
1000+65 to 1001+20	0" to 5"	0"
1001+20 to 1001+50	5"	0" to 1"

TYPICAL GRADING & SURFACING SECTION

SECTION 9 - END WIDENING & RAISING EAST OF THE RR CROSSING

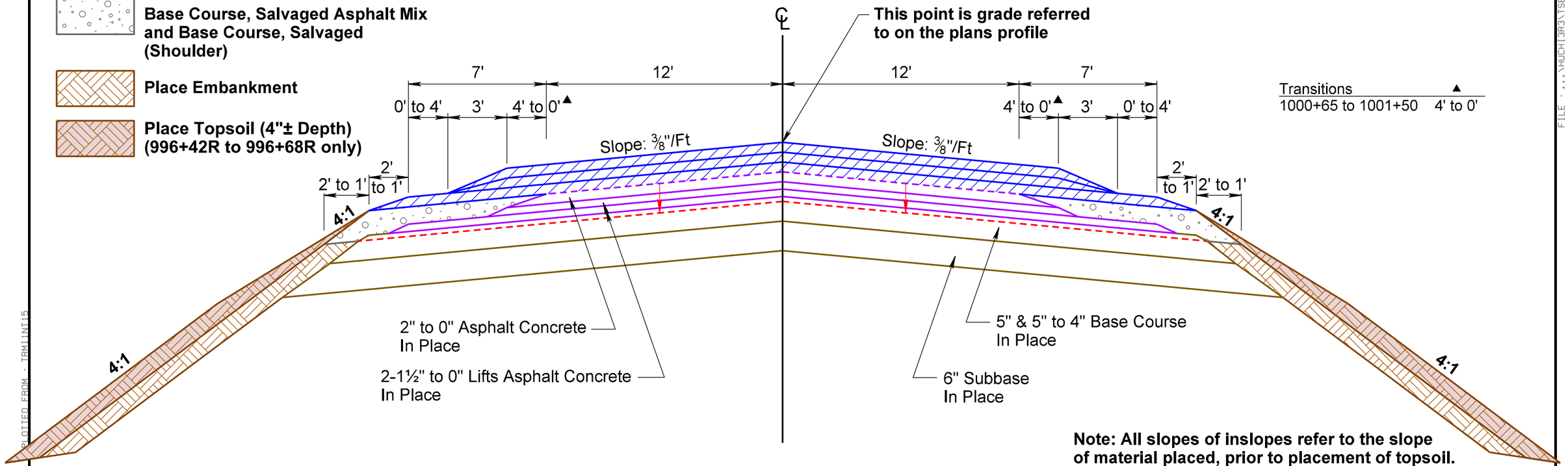
1000+65 to 1001+50

6" Asphalt Concrete Composite (Placed in Three 2" Lifts)

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (Shoulder)

Place Embankment

Place Topsoil (4"± Depth) (996+42R to 996+68R only)



Transitions	▲
1000+65 to 1001+50	4' to 0'

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 10

PLOTTED FROM - TRM1INT15

FILE - ...\HUCH13R3\TSECT3R3.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	12	37

Plotting Date: 06/09/2015

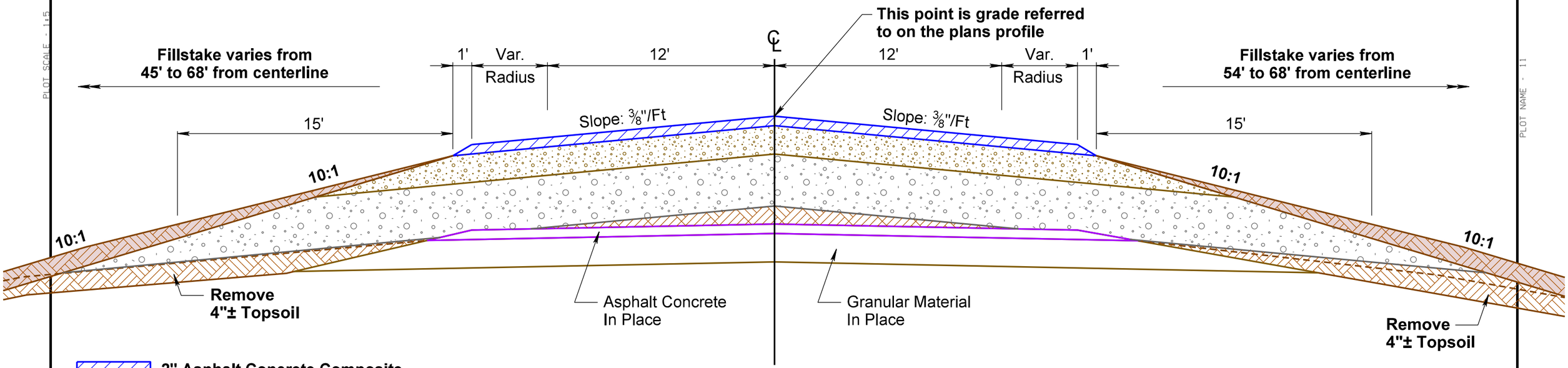
Unclassified Excavation

Remove Topsoil (4"± Depth)

TYPICAL GRADING & SURFACING SECTION

SECTION 10N - RAISING NORTH SECTION LINE ROAD 999+52L

0+16 to 0+47 (411 AVENUE - NORTH OF US18)



2" Asphalt Concrete Composite

Base Course (6" Depth) ■

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (11" Depth) ■ ■

Place Embankment (Depth Variable - Determined by profile grade change)

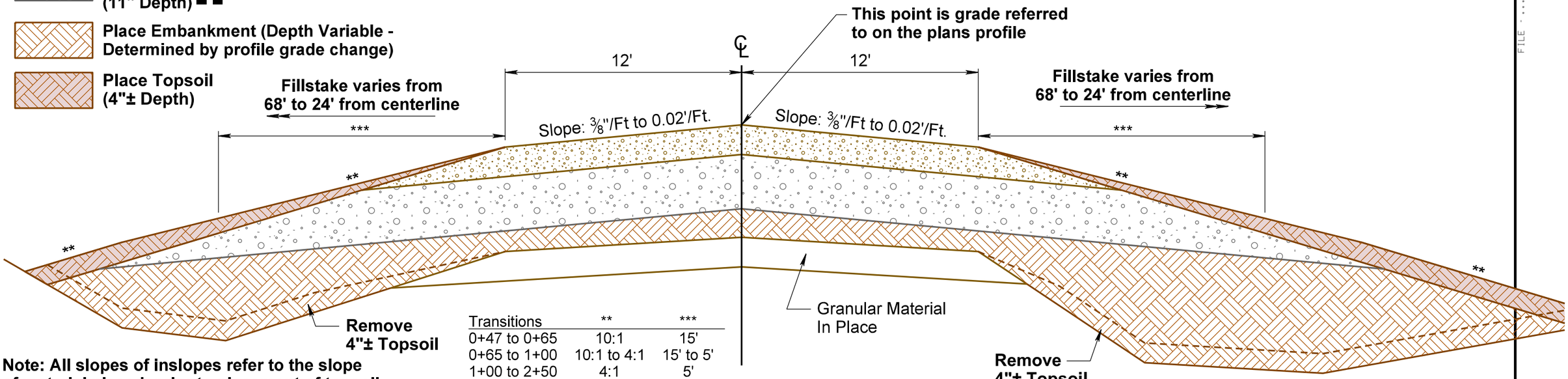
Place Topsoil (4"± Depth)

TYPICAL GRADING & SURFACING SECTION

SECTION 10N - RAISING NORTH SECTION LINE ROAD 999+52L

0+47 to 2+50 (411 AVENUE - NORTH OF US18)

Transitions	■ Base Course Depth	■ ■ Base Course, Salv Asph Mix & Salv Depth
0+16 to 1+17	6"	11"
1+17 to 1+51	6"	11" to 0"
1+51 to 2+00	6" to 0"	0"



Transitions	**	***
0+47 to 0+65	10:1	15'
0+65 to 1+00	10:1 to 4:1	15' to 5'
1+00 to 2+50	4:1	5'

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 11

FILE - ...\HUCH13R3\TSECT3R3.DGN

PLOTTED FROM - TRM11NT15

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	13	37

Plotting Date: 06/09/2015

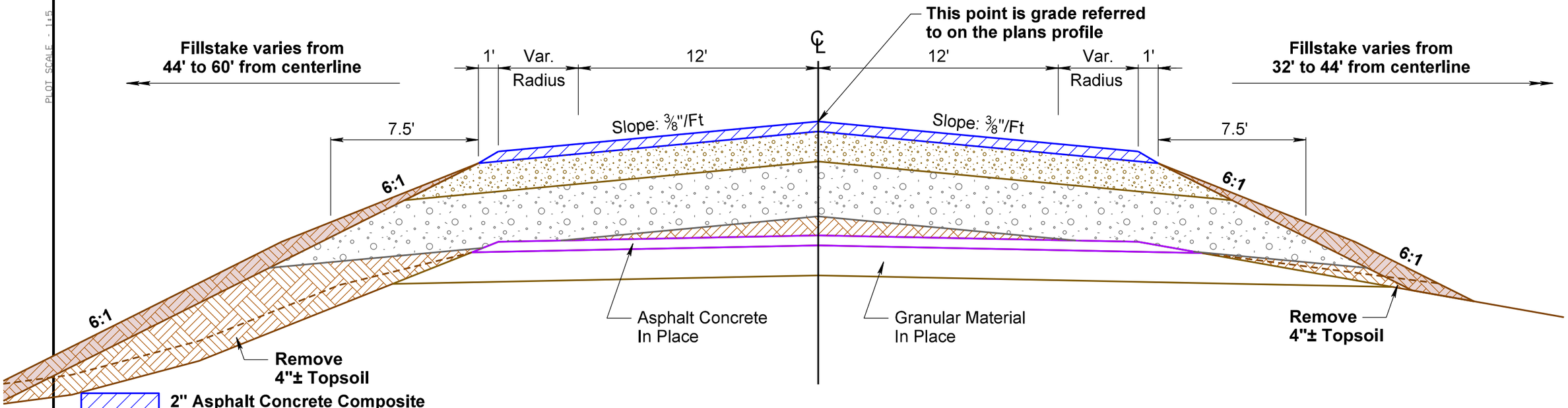
Unclassified Excavation

Remove Topsoil (4"± Depth)

TYPICAL GRADING & SURFACING SECTION

SECTION 10S - RAISING SOUTH SECTION LINE ROAD 999+52R

0+16 to 0+62 (411 AVENUE - SOUTH OF US18)



2" Asphalt Concrete Composite

Base Course (6" Depth) ■

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (11" Depth) ■ ■

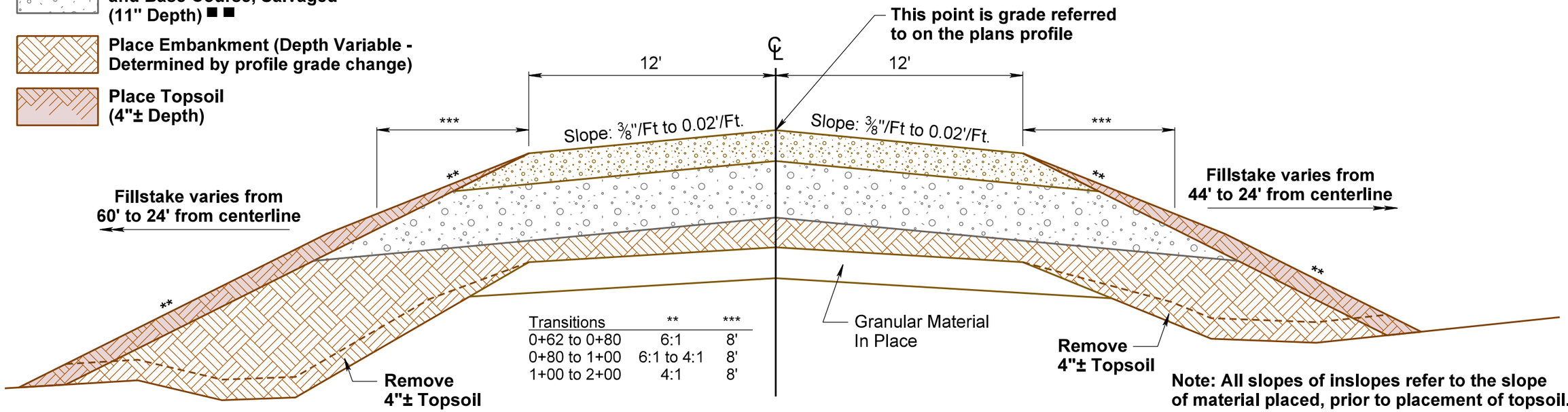
Place Embankment (Depth Variable - Determined by profile grade change)

Place Topsoil (4"± Depth)

TYPICAL GRADING & SURFACING SECTION

SECTION 10S - RAISING SOUTH SECTION LINE ROAD 999+52R

0+62 to 2+00 (411 AVENUE - SOUTH OF US18)



Transitions	**	***
0+62 to 0+80	6:1	8'
0+80 to 1+00	6:1 to 4:1	8'
1+00 to 2+00	4:1	8'

Transitions	Base Course Depth ■	Base Course Salv. Asphalt Mix Depth ■ ■
0+16 to 0+63	6"	11"
0+63 to 1+71	6"	11" to 0"
1+71 to 2+50	6" to 0"	0"

Note: All slopes of inslopes refer to the slope of material placed, prior to placement of topsoil.

PLOT SCALE - 1:5

PLOT NAME - 12

PLOTTED FROM - TRMIINT15

FILE - ...\HUCH13R3\TSECI3R3.DGN

TABLE OF PROJECT STATIONING

SECTION	STATION	TO	STATION	DESCRIPTION	LENGTH	GROSS SECTION LENGTHS		EXCEPTION LENGTHS (RR XING)		NET SECTION LENGTHS	
1	990+50.00	to	991+50.00	Begin Lowering West of the RR Crossing	100.00'	**100.00'**				**100.00'**	**0.019 mi.**
2	991+50.00	to	996+15.00	Lowering West of the RR Crossing	465.00'	**465.00'**		**10.00'**		**455.00'**	**0.086 mi.**
3	996+15.00	to	996+68.00	East of the RR Crossing	53.00'	**53.00'**				**53.00'**	**0.010 mi.**
4	996+68.00	to	996+80.00	East of the RR Crossing	12.00'	**12.00'**				**12.00'**	**0.002 mi.**
5	996+80.00	to	997+10.00	Widening & Raising East of the RR Crossing	30.00'	**30.00'**				**30.00'**	**0.006 mi.**
6	997+10.00	to	997+60.00	Widening & Raising East of the RR Crossing	50.00'	**50.00'**				**50.00'**	**0.009 mi.**
7	997+60.00	to	999+82.00	Widening & Raising East of the RR Crossing	222.00'	**222.00'**				**222.00'**	**0.042 mi.**
8	999+82.00	to	1000+65.00	Widening & Raising East of the RR Crossing	83.00'	**83.00'**				**83.00'**	**0.016 mi.**
9	1000+65.00	to	1001+50.00	End Widening & Raising East of the RR Crossing	85.00'	**85.00'**				**85.00'**	**0.016 mi.**
10N	0+16.00	to	2+50.00	Raising North Section Line Road at Sta. 999+52 L	234.00'	**418.00'**				**418.00'**	**0.079 mi.**
10S	0+16.00	to	2+00.00	Raising South Section Line Road at Sta. 999+52 R	184.00'						
				Totals		**1518.00'**	**0.287 mi.**	**10.00'**	**0.002 mi.**	**1508.00'**	**0.285 mi.**

TABLE OF MATERIALS QUANTITIES

SECTION	UNCL. EXC.	CONTRACTOR FURNISHED BORROW EXCAVATION	BASE COURSE	BASE COURSE SALVAGED	BASE COURSE SALVAGED ASPHALT MIX	SALVAGE ASPHALT MIX AND GRANULAR MATERIAL	ASPHALT CONCRETE COMPOSITE	SS-1h/ CSS-1h ASPH. FOR TACK	SS-1h/ CSS-1h ASPH. FOR FLUSH SEAL	SAND FOR FLUSH SEAL
	CuYd	**CuYd**	**Ton**	**Ton**	**Ton**	**Ton**	**Ton**	**N.A.B.I. Ton**	**N.A.B.I. Ton**	**N.A.B.I. Ton**
1	75	-	-	-	-	142	125*	0.20	0.10	1.1
2	2310	-	637	558	215	1818	625*	0.80	0.50	4.9
3	7	-	-	32	13	14	28*	0.05	0.05	0.6
4	1	-	-	10	4	2	16	0.02	0.02	0.1
5	-	-	23	41	16	-	41	0.03	0.03	0.3
6	-	-	77	61	24	-	69	-	0.10	0.5
7	-	393	344	274	106	-	302	0.40	0.20	2.4
8	-	-	62	78	30	-	113	0.20	0.10	0.9
9	29	-	-	6	2	54	105*	0.20	0.10	0.9
10N&S	-	600	340	405	155	-	38	0.10	0.10	1.4
Totals:	**2422**	**993**	**1483**	**1465**	**565**	**2030**	**1462**	**2.0**	**1.3**	**13.1**

* Quantities of Asphalt Concrete Composite for shoulder transitions specified in Sections 1, 2, 3 & 9 are included in these figures.

N.A.B.I. = Not A Bid Item

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall 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 shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

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.

RAILROAD CROSSING

The Contractor is to coordinate work with the Railroad Company regarding any work to be done adjacent to the railroad track. See Special Provision for Working on Railroad Property.

REMOVE AND REPLACE TOPSOIL

Prior to beginning embankment and surfacing operations, a 4” depth of topsoil shall be removed from the areas on the inslopes to be excavated and from the areas where embankment is to be placed. Following completion of surfacing operations, topsoil shall be replaced as detailed on the typical sections.

Limits of this work, depth of removal, and stockpile location will be directed by the Engineer.

The estimated amount of topsoil to be removed and replaced is 280 CuYd.

Cost for removing and replacing the topsoil shall be included in the lump sum price for Remove and Replace Topsoil.

CONTRACTOR FURNISHED BORROW

The Contractor shall provide a suitable site for Contractor furnished borrow material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material shall be approved by the Engineer.

Prior to placement or removal of fill material, the Contractor will be required to remove 4” of topsoil and replace it following the placement of the new fill material.

At locations outside of 22’ from centerline, the Contractor will be allowed to place topsoil in lieu of fill material if the fill depth is 8” or less and provided there is an excess of topsoil to do so. By doing this the Contractor will not be required to remove and replace the 4” of in place topsoil in such areas.

Compaction of the fill material shall be to the satisfaction of the Engineer.

It is not anticipated that water for compaction will be required; however, if in the opinion of the Engineer the fill material is extremely dry, water may be ordered and placed to the satisfaction of the Engineer. Cost for water shall be incidental to the contract unit price per cubic yard for Contractor Furnished Borrow.

Restoration of the Contractor furnished borrow site shall be the responsibility of the Contractor.

Plans quantity will be the basis of payment for this item.

UNCLASSIFIED EXCAVATION – Shrinkage Factor 35%

Compaction of the embankment material reused from Unclassified Excavation shall be to the satisfaction of the Engineer.

Plans quantity will be the basis of payment for this item.

SALVAGE ASPHALT MIX AND SALVAGE GRANULAR MATERIAL

An estimated 565 Tons (299 Cubic Yards) of asphalt mix material and an estimated 1465 Tons (775 Cubic Yards) of granular material shall be salvaged from the roadway as detailed in these plans. The salvaged material shall immediately be placed back on the roadway as per the details in these plans. All of the salvaged material shall be reused on the project. Refer to the notes for Base Course, Salvaged Asphalt Mix & Base Course, Salvaged for placement of this material.

The asphalt mix material and granular material may be salvaged separately or in one operation and may be blended or unblended.

Proper drainage shall be maintained so water will not pond on the mainline granular surfacing or embankment. Proper drainage will be to the satisfaction of the Engineer.

Cost for removing the material is included in the contract unit price per cubic yard for Unclassified Excavation.

Cost for salvaging asphalt mix material is included in the contract unit price per ton for Salvage Asphalt Mix Material. Plans quantity will be the basis of payment for this item.

Cost for salvaging granular material is included in the contract unit price per ton for Salvage Granular Material. Plans quantity will be the basis of payment for this item.

Section 270 applies for salvaging and processing of the material, but stockpiling does not apply, as it is not a part of this project.

BASE COURSE, SALVAGED ASPHALT MIX & BASE COURSE, SALVAGED

Base Course, Salvaged Asphalt Mix shall be obtained from salvaged asphalt mix material on the project and may be used without further testing.

Base Course, Salvaged shall be obtained from salvaged granular material on the project and may be used without further testing.

All salvaged asphalt mix and granular material will be reused on the project.

Depending on the actual yield from salvaging operations, the Contractor will be allowed to vary the placement depth of salvaged material on the section line roads, accordingly, by adding up to 5”, or subtracting up to 5” from the plans specified 11” placement depth. The quantity of Contractor Furnished Borrow Excavation shall be decreased or increased accordingly, to coincide with the increase or decrease of salvaged material placement. One cubic yard of salvaged material (asphalt mix and/or granular material in any proportion) shall be considered equal to 1.89 tons.

Base Course, Salvaged Asphalt Mix and Base Course, Salvaged shall be compacted according to Section 260.3 B except that a pneumatic tired roller will be required.

Placement of Base Course, Salvaged Asphalt Mix and Base Course, Salvaged shall immediately follow salvaging operations. Plans quantity will be the basis of payment for these items.

BASE COURSE

Base Course shall be placed immediately following placement of the Base Course, Salvaged Asphalt Mix and Base Course, Salvaged.

WATER FOR COMPACTION

Cost for water for compaction of the Base Course, Salvaged Asphalt Mix, Base Course, Salvaged and Base Course shall 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.

SURFACING TAPERS

In order to construct the new surfacing flush with the asphalt concrete, it will be necessary to taper the depth of salvaging according the plans profile and typical sections.

Cost for this work shall be incidental to the contract unit price per square yard for Salvage Asphalt Mix Material.

SAWING IN EXISTING SURFACING

Where new asphalt concrete is placed adjacent to existing asphalt concrete or concrete pavement, the existing asphalt concrete or concrete pavement shall be sawed full depth to a true line with a vertical face. No separate payment will be made for sawing.

FLUSH SEAL

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

ASPHALT CONCRETE COMPOSITE

Virgin mineral aggregate for the Asphalt Concrete Composite shall conform to the requirements for Class E, Type 1.

The asphalt binder used in the mixture shall be PG 58-34, PG 64-28 or PG 64-34 Asphalt Binder.

All other requirements in the specifications for Asphalt Concrete Composite shall apply.

RUMBLE STRIPES

INSTALLATION:

Rumble stripes shall be constructed according to Standard Plate 320.20.

Rumble stripes shall be installed in rural areas with posted speeds greater than 50 mph and are not required in urban areas. The rumble stripes shall begin at the location of the Speed Limit 65 sign as traffic is departing the built up area of a community, unless otherwise specified in the plans. The Engineer shall provide the exact start and stop locations.

Rumble stripes shall not be installed on bridge decks, through curb & gutter sections, through mailbox turnouts, through intersecting roads or through approaches. They also shall not be placed within 50 feet of any railroad crossing.

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

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

ROADWAY CLEANING:

The Contractor shall be required to remove loose material from the driving surface and/or asphalt shoulders of the roadway. Loose material may be broomed to the edge of shoulders. It shall be the Contractor’s responsibility to ensure the loose material does not enter any vegetated areas or waterways.

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

CULVERT EXTENSION AT INTERSECTING ROAD 999+52 R

Corrugated metal pipes shall have 2 ⅔-inch X ½-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes shall have 3-inch X 1-inch or 5-inch X 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

High density polyethylene pipe, corrugated polypropylene pipe, or steel reinforced polyethylene pipe may be substituted for corrugated metal pipe at approaches and intersecting roads at no additional cost to the State.

PERMANENT PAVEMENT MARKING

The Region Traffic Engineer shall be notified a minimum of 2 weeks prior to the application of the permanent pavement marking to allow determination of the location of no passing zones. No work that obstructs the traveled way or roadway shoulders will be in progress at the time of the determination of the no passing zones.

Application of permanent pavement marking shall be completed within 14 days following completion of the final surfacing.

Standard Plate 633.10 Pavement Marking at Railroad Crossing is included in the plans to facilitate proper placement of the Railroad Crossing Stop Lines.

REMOVE AND RESET TRAFFIC SIGNS

The Contractor shall remove, salvage, neatly stockpile and reset the following existing traffic signs, sign supports and hardware to complete the work:

LOCATION *	SIGN	LOCATION *	SIGN
999+20 L	411 Ave / US18	1000+30 R	Tripp →
999+30 L	STOP	1000+50 L	WEST US18 (Symbol)
999+70 R	STOP		

***** Stations are approximate. Refer to the following for actual location: The Contractor shall inspect and record the condition, exact location, offset, direction facing and height of each sign prior to removal. The Contractor shall reset each sign at the same location it was removed from, at a minimum height of 5', measured vertically from the edgeline to the bottom edge of the bottom sign, in accordance with the specifications. The signs shall be installed at the location and offset that existed, and in the direction it was facing, prior to the sign being removed. Any adjustment necessary to the sign support or support base shall be the responsibility of the Contractor.

The Contractor shall replace in kind any signs, supports, support bases or related hardware lost or damaged during the time the signs were removed, salvaged, stockpiled and reset. Any replacement material will be at the Contractors expense.

Cost for removing, salvaging, stockpiling and resetting shall be included in the contract unit price per each for Remove, Salvage, Relocate and Reset Traffic Sign.

SEED ORIGIN LIMITATIONS

Grass seed furnished shall be the grass species listed in the plans. The Contractor may use one of the grass varieties listed in the plans for the specified grass species or the Contractor may use a different grass variety of the same grass species specified. If the Contractor uses a grass variety listed in the plans for the specified grass species, the grass seed origin limitations will not apply. If the Contractor uses a grass variety not listed in the plans for the specified grass species, the grass seed furnished must originate in South Dakota, North Dakota, Montana, Wyoming, Nebraska, Iowa, Minnesota, Kansas, Colorado, or Wisconsin. Grass seed grown outside this area may be approved after the Contractor has furnished written certification from three seed suppliers confirming seed grown within this area is not readily available.

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum shall 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 shall provide certification of the fungal species claimed and the live propagule count. The inoculum shall include the following fungal species:

Glomus intraradices	25%	*Glomus mosseae*	25%
Glomus aggregatu	25%	*Glomus etunicatum*	25%

All seed shall be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. Cost for inoculating the seed shall be incidental to the contract lump sum price for Erosion Control.

The mycorrhizal inoculum shall be from the list below or an approved equal:

Product	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 http://www.mycorrhizae.com/

PERMANENT SEEDING AND MULCHING

The areas to be seeded and mulched include all disturbed areas within the right-of-way resulting from the work required by this contract.

Type G Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk	3
Big Bluestem	Bison, Bonilla, Champ, Pawnee, Sunnyview	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
	Total:	26

The areas to be seeded and mulched are estimated at 0.6 acre.

Cost for seeding and mulching shall be incidental to the contract lump sum price for Erosion Control.

DRILLS

In addition to the drills specified in Section 730 of the Specifications, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of ¼" to ½".

MULCHING (GRASS HAY OR STRAW)

Bales with noxious weed contamination will be rejected and the Contractor will be required to remove the contaminated bales from the project.

EROSION CONTROL WATTLE

Established vegetation is in place at the toe of all embankment to be placed on the project. Therefore erosion control measures in excess of the already established vegetation should be minimal.

However, if determined necessary by the Engineer during construction, erosion control wattles for restraining the flow of runoff and sediment shall be installed. Refer to Standard Plate 734.06 for details.

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

Erosion control wattles shall remain on the project to decompose.

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

http://sddot.com/business/certification/products/Default.aspx

Due to the short duration of the project, remove sediment is not included.

HIGH FLOW SILT FENCE

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

http://sddot.com/business/certification/products/Default.aspx

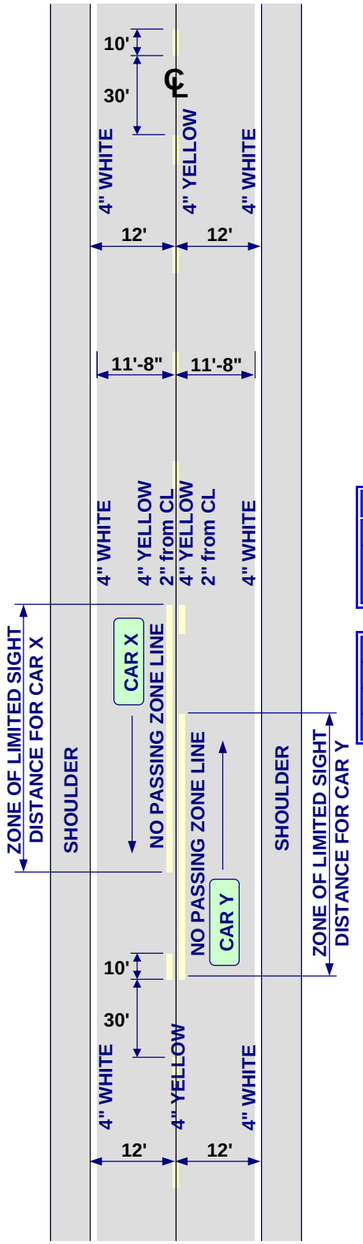
High flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.05 for details.

Due to the short duration of the project, mucking silt fence is not included.

TABLE OF HIGH FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
999+10	R	42" CMP Inlet (West)	18
999+52	R	36" CMP Inlet (West)	18
		Total:	36

TWO LANE ROADWAY



PAVEMENT MARKING

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

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

Application rates shall be as follows:

Two Lane Roadway (Rates for one line)
Dashed Yellow Centerline Rate = 4.6 Gals./Pass-Mile
Solid Yellow Centerline Rate = 16.9 Gals./Pass-Mile
Solid White Edgeline Rate = 16.9 Gals./Pass-Mile
Glass Beads = 8 Lbs./Gal.

ESTIMATED QUANTITIES	
PAINT	**QUANTITY**
WHITE	**8 GALLONS**
YELLOW	**5 GALLONS**

Included in the above quantities are:		
Additional White		
Description		Gallons
24" Stop Lines	24'	1

NOTE: All pavement marking dimensions are based on 12' driving lanes.

SEQUENCE OF OPERATIONS

The following Sequence of Operations shall be adhered to. Any changes must be approved in writing by the Area Engineer prior to changes being made.

1. Install signing prior to start of work.
2. Place erosion/sediment control measures, as applicable.
3. Excavate, salvage, place and recompact the salvaged asphalt mix and granular material (placed as Base Course Salvaged Asphalt Mix and Base Course Salvaged), place Base Course, and place temporary ramps ½ roadway width at a time while maintaining traffic on the other half.
4. Place asphalt concrete surfacing and flush seal on both lanes.
5. Place permanent pavement marking.
6. Seed the disturbed areas and place final erosion control measures.

TEMPORARY PAVEMENT MARKING

Temporary pavement marking shall be placed on the asphalt concrete lifts. Temporary road markers shall be required on the top lift of asphalt concrete surfacing.

The Contractor shall remove and dispose of the temporary road markers after Permanent Pavement Marking is applied. Method of removal shall be nondestructive to the road surface and shall be accomplished within one week of completion of the Permanent Pavement Marking.

Four applications of temporary pavement marking are included in the estimate of quantities for completion of the three asphalt lifts, and uncovering the temporary road markers after application of the seal.

Cost for furnishing, applying, uncovering, removing and disposing of the temporary road markers shall be included in the contract unit price per foot for Temporary Pavement Marking.

GENERAL MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, and culvert end markers, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

The Contractor shall provide documentation that all breakaway sign supports comply with NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

The Contractor shall be responsible for the maintenance of traffic during construction ½ roadway width at a time. While work is in progress the Contractor shall maintain the grade in passable condition for all vehicles.

GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

During periods of no work, such as at night or on weekends, the Contractor will be required to maintain two-way traffic on a minimum of 3 inches of Base Course, Base Course Salvaged or Base Course Salvaged Asphalt Mix. Channelizing devices consisting of 42 inch cones or barrels spaced 40 feet apart shall be used to separate the two lanes of traffic when flaggers are not in use. If the lanes are not maintained in the current alignment additional devices shall be placed to provide a taper with 65 feet of length for each foot of offset from the current alignment. The taper shall be reflectorized drums spaced at 25 feet, and shall be placed both on centerline and the outside edge of the lane. If the lanes are not maintained at the same elevation, the slope between the two elevations shall be maintained with a maximum slope of 4:1 for elevation differences greater than 3 inches.

Channelizing devices consisting of 42 inch cones or barrels spaced 40 feet apart shall be used to separate the one lane of traffic from the work area when flaggers are used without a pilot car and in all areas where the elevation difference is greater than 1 foot with slopes steeper than 4:1.

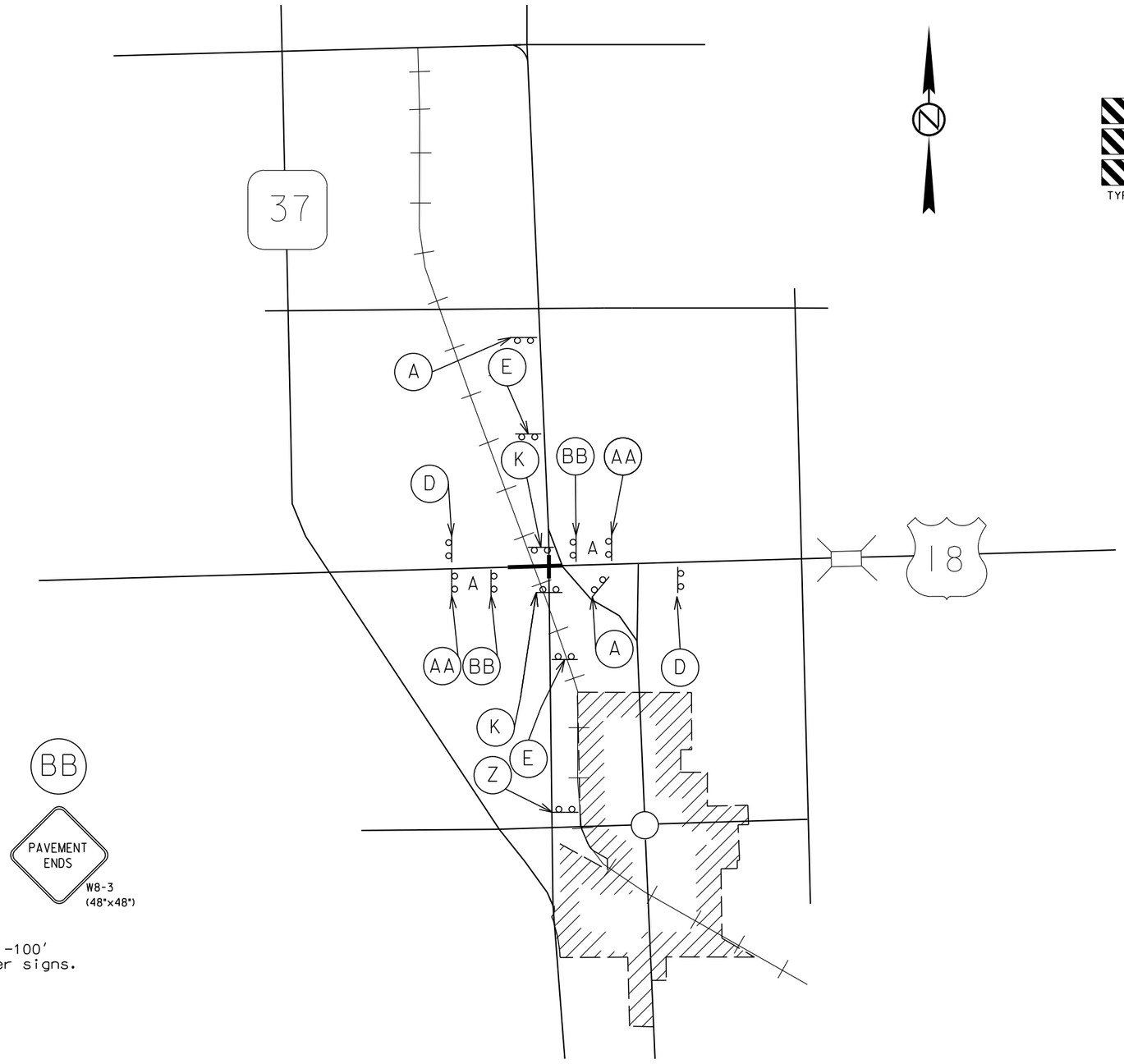
Any windrow of material within 30 feet of the traveled way shall be marked per standard plate 634.27.

Temporary ramps consisting of Base Course, Base Course Salvaged or Base Course Salvaged Asphalt Mix shall be constructed with a slope of 20:1 when there is no work in progress. The Base Course, Base Course Salvaged or Base Course Salvaged Asphalt Mix for maintenance of traffic shall be incorporated into the project when removed from the ramp. Cost for material, labor and equipment necessary to complete this work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

ITEMIZED LIST FOR TRAFFIC CONTROL

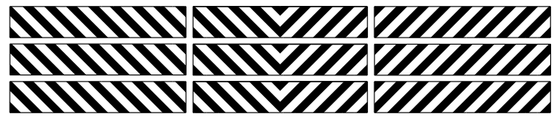
		CONVENTIONAL ROAD			
SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
R1-1	STOP	2	30" x 30"	21	42
R4-7c	(Narrow) KEEP RIGHT (symbol)	2	18" x 30"	15	30
R11-2	ROAD CLOSED	2	48" x 30"	27	54
R11-4	ROAD CLOSED TO THRU TRAFFIC	1	60" x 30"	30	30
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	34	68
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W8-1	BUMP	4	48" x 48"	34	136
W8-3	PAVEMENT ENDS	2	48" x 48"	34	68
W8-7	LOOSE GRAVEL	2	48" x 48"	34	68
SPECIAL	WINDROW	2	48" x 48"	34	68
W8-11	UNEVEN LANES	2	48" x 48"	34	68
W8-12	NO CENTER LINE	2	48" x 48"	34	68
W8-17	SHOULDER DROP-OFF (symbol)	2	48" x 48"	34	68
W13-1P	ADVISORY SPEED (plaque) 2 - 45 MPH, 4 - 25 MPH	6	30" x 30"	21	126
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-3	ROAD CLOSED 500 FT	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-1	ROAD WORK NEXT 1 MILE	2	36" x 18"	17	34
G20-2	END ROAD WORK	2	36" x 18"	17	34
-	TYPE 3 BARRICADE - 8' single sided	6		40	240
-	TYPE 3 BARRICADE - 8' double sided	1		56	56
				TOTAL UNITS	1598

TRAFFIC CONTROL
FIXED LOCATION SIGNS



K

ROAD CLOSED — RII-2 (48"x30")



E

ROAD CLOSED 500 FT — W20-3 (48"x48")

Z

ROAD CLOSED TO THRU TRAFFIC — RII-4 (60"x30")

A

ROAD WORK AHEAD — W20-1 (48"x48")

D

END ROAD WORK — G20-2 (36"x18")

AA

ROAD WORK NEXT 1MILE — G20-1 (36"x18")

BB

PAVEMENT ENDS — W8-3 (48"x48")

Signs are to be placed 50'-100' from intersections or other signs.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)	
	(A)	(B)
0 - 30	200	200
35 - 40	200	200
45 - 50	350	350
55	500	500
60 - 65	500	1000
75	500	2600

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	20	37

CONTROL DATA

HORIZONTAL AND VERTICAL CONTROL POINTS						
POINT	**STATION**	**OFFSET**	**DESCRIPTION**	**NORTHING**	**EASTING**	**ELEVATION**
HARN POINT 18 374.82	1001+65.06	185.73’ L		339918.039	2597586.273	1509.183
CP1	986+64.13	99.90’ R	5/8" x 2' REBAR & CAP STAMPED "SDDOT CONTROL POINT" - SOUTH ROW FENCE 2' NORTH OF EAST GATE POST (EAST SIDE OF APPR)	339541.182	2596101.065	1548.193
CP2	995+96.43	105.32’ R	5/8" x 2' REBAR & CAP STAMPED "SDDOT CONTROL POINT" - SW CORNER OF RAILROAD INTERSECTION WITH US18 APPROX 8' SOUTH OF US18 ROW FENCE AND 2' EAST OF WEST RR ROW FENCE	339595.906	2597031.773	1527.216
CP3	1006+08.26	47.77’ L	5/8" x 2' REBAR & CAP STAMPED "SDDOT CONTROL POINT" - 1' S OF NORTH ROW FENCE - 1000'+/- EAST OF RR X-ING	339795.530	2598033.993	1504.203

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System.
South Zone (NAD 83/2007) SF = 0. 9998597959

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	21	37

Plotting Date: 05/13/2015

EXISTING TOPOGRAPHY SYMBOLOGY AND LEGEND

- Anchor
- Antenna
- Approach
- Assumed Corner
- Azimuth Marker
- Bbq Grill/ Fireplace
- Bearing Tree
- Bench Mark
- Box Culvert
- Bridge
- Brush
- Buildings
- Bulk Tank
- Cattle Guard
- Cemetery
- Centerline
- Cistern
- Clothes Line
- Commercial Sign Double Face
- Commercial Sign One Post
- Commercial Sign Overhead
- Commercial Sign Two Post
- Concrete Symbol
- Creek Edge
- Curb/Gutter
- Curb
- Dam Grade/Dike/Levee
- Ditch Block
- Drainage Profile
- Drop Inlet
- Edge Of Asphalt
- Edge Of Concrete
- Edge Of Gravel
- Edge Of Other
- Edge Of Shoulder
- Elec. Trans./Power Jct. Box
- Fence Barbwire
- Fence Chainlink
- Fence Electric
- Fence Misc.
- Fence Rock
- Fence Snow
- Fence Wood
- Fence Woven
- Fire Hydrant
- Flag Pole
- Flower Bed
- Gas Valve Or Meter
- Gas Pump Island
- Grain Bin
- Guardrail
- Gutter
- Guy Pole
- Haystack
- Hedge
- Highway R.O.W. Marker
- Information Sign One Post
- Information Sign Two Post
- Interstate Close Gate
- Iron Pin
- Irrigation Ditch
- Lake Edge
- Lawn Sprinkler
- Mailbox
- Manhole Electric
- Manhole Gas
- Manhole Misc
- Manhole Sanitary Sewer
- Manhole Storm Sewer
- Manhole Telephone
- Manhole Water
- Merry-Go-Round
- Microwave Radio Tower
- Misc. Property Corner
- Misc. Post
- Overhang Or Encroachment
- Overhead Utility Line — OH —
- Parking Meter
- Pipe With End Section
- Pipe With Headwall
- Pipe Without End Section
- Playground Slide
- Playground Swing
- Power And Light Pole
- Power And Telephone Pole
- Power Meter
- Power Pole
- Power Pole And Transformer
- Power Tower Structure
- Propane Tank
- Property Pipe
- Property Pipe With Cap
- Property Stone
- Public Telephone
- Railroad Crossing Signal
- Railroad Milepost Marker
- Railroad Profile
- Railroad R.O.W. Marker
- Railroad Signs
- Railroad Switch
- Railroad Track
- Railroad Trestle
- Rebar
- Rebar With Cap
- Reference Mark
- Retaining Wall
- Riprap
- River Edge
- Rock And Wire Baskets
- Rockpiles
- Route Sign One Post
- Route Sign Two Post
- Satellite Dish
- Septic Tank
- Shrub Tree
- Sidewalk
- Sign Face
- Sign Post
- Slough Or Marsh
- Spring
- Stream Gauge
- Street Marker
- Telephone Fiber Optics — T/F —
- Telephone Junction Box
- Telephone Pole
- Television Cable Jct Box
- Television Tower
- Test Wells/Bore Holes
- Traffic Signal
- Trash Barrel
- Tree Belt
- Tree Coniferous
- Tree Deciduous
- Tree Stumps
- Triangulation Station
- Underground Electric Line — P —
- Underground Gas Line — G —
- Underground Sanitary Sewer — S —
- Underground Storm Sewer — S —
- Underground Tank
- Underground Telephone Line — T —
- Underground Television Cable — TV —
- Underground Water Line — W —
- Warning Sign One Post
- Warning Sign Two Post
- Water Fountain
- Water Hydrant
- Water Meter
- Water Tower
- Water Valve
- Water Well
- Weir Rock
- Windmill
- Wingwall
- Witness Corner
- State and National Line
- County Line
- Section Line
- Quarter Line
- Sixteenth Line
- Property Line
- Construction Line
- R. O. W. Line
- New R. O. W. Line
- Cut and Fill Limits
- Control of Access
- New Control of Access
- Proposed ROW (After Property Disposal)

PLOT SCALE - 1:200

PLOT NAME - 1

FILE - ...\PRJ2015\HUCH040T\TOPOSYMB.DGN

PLOTTED FROM - TRM1INT16

PLAN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	22	37

Plotting Date: 06/09/2015

US18 999+52 - 60' R
South Section Line Road 0+62
L - Remove Safety End for Reset,
Add 36" x 12' CMP & Reset Safety End
R - Remove Safety End for Reset,
Add 36" x 4' CMP & Reset Safety End

WORK LIMITS

TYPICAL SECTION 1 2 RR XING 3 4 5 6 7 8 9 **TYPICAL SECTION**

990+50 991+50 996+05 996+15 996+68 996+80 997+10 997+60 999+82 1000+65 1001+50

BEGIN WORK STA. 990+50

END WORK 1001+50

NORTH SECTION LINE ROAD

SECTION 10N

SECTION 10S

SOUTH SECTION LINE ROAD

US18 990+00 995+00 1000+00 1005+00

4+17 0+00 0+00 4+94 5+00 10+00

PLOT SCALE - 1:1.25

PLOT NAME - 13

FILE - ...\HUCH13R3\PROFT3R3.DGN

PLOTTED FROM - TRM1INT15

PROFILE FOR US18

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	23	37

Plotting Date: 06/09/2015

PLOT SCALE - 1:80

PLOT NAME - 14

FILE - ...\HUCH13R3\PROFI3R3.DGN

PLOTTED FROM - TRMINT15

TYPICAL SECTION 1 — 2 — RR XING — 3 — 4 — 5 — 6 — 7 — 8 — 9 — TYPICAL SECTION

990+50 991+50 996+05 996+15 996+68 996+80 997+10 997+60 999+82 1000+65 1001+50

990+50
PC1=1542.38

CURVE 1
990+50 to 993+53.58

993+53.58
PT1=PC2=1532.12

CURVE 2
993+53.58 to 996+05

996+05
PT2 = W
RR XING
EDGE =
1528.05

RR XING
996+10.4

996+15
PC3 = E
RR XING
EDGE =
1528.10

CURVE 3
996+15 to 999+64.87

999+64.87
PT3=PC4=1521.15

CURVE 4
999+64.87 to 1001+50

1001+50
PT4=1515.87

Section Line Gravel
Int Rd 999+52

Old SD37 Asphalt
Int Rd 1001+85

2'

2.7'

1.9'

Original

Proposed

PROFILE FOR LOWERING US18 WEST OF THE RR CROSSING

SECTIONS 1 & 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	24	37

Plotting Date: 06/09/2015

PLOT SCALE - 1:40

PLOT NAME - 15

FILE - ...\HUCH13R3\PROFI3R3.DGN

PLOTTED FROM - TRM1INT15

1540

1530

990+50
PC1=1542.38

991+00

992+00

993+00

994+00

995+00

996+00

1542.38
1542.09
1541.79
1541.50
1541.20
1540.89
1540.59
1541.28
1539.97
1539.65
1539.33
1539.01
1538.68
1538.35
1538.02
1537.69
1537.35
1537.01
1536.66
1536.31
1535.96
1535.61
1535.25
1534.89
1534.52
1534.15
1533.78
1533.41
1533.03
1532.65
1532.26
1531.89
1531.51
1531.16
1530.84
1530.53
1530.24
1530.00
1529.71
1529.48
1529.26
1529.06
1528.88
1528.71
1528.56
1528.43
1528.32
1528.22
1528.14
1528.07
1528.02
1527.99
1527.98
1527.98
1527.99
1528.00
1528.10

CURVE 1
990+50 to 993+53.58

993+53.58
PT1=PC2=1532.12

2'

CURVE 2
993+53.58 to 996+05

996+05
PT2 = W
RR XING
EDGE =
1528.05

996+10.4
RR XING

996+15
PC3 = E
1528.09
1528.05

- Original Profile
- Proposed Profile
- 6" Asphalt Concrete Composite (Placed in Three 2" Lifts)
- Base Course (6" Depth)
- Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (6" Depth)

PROFILE FOR RAISING US18 EAST OF THE RR CROSSING

SECTIONS 3 - 9

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	25	37

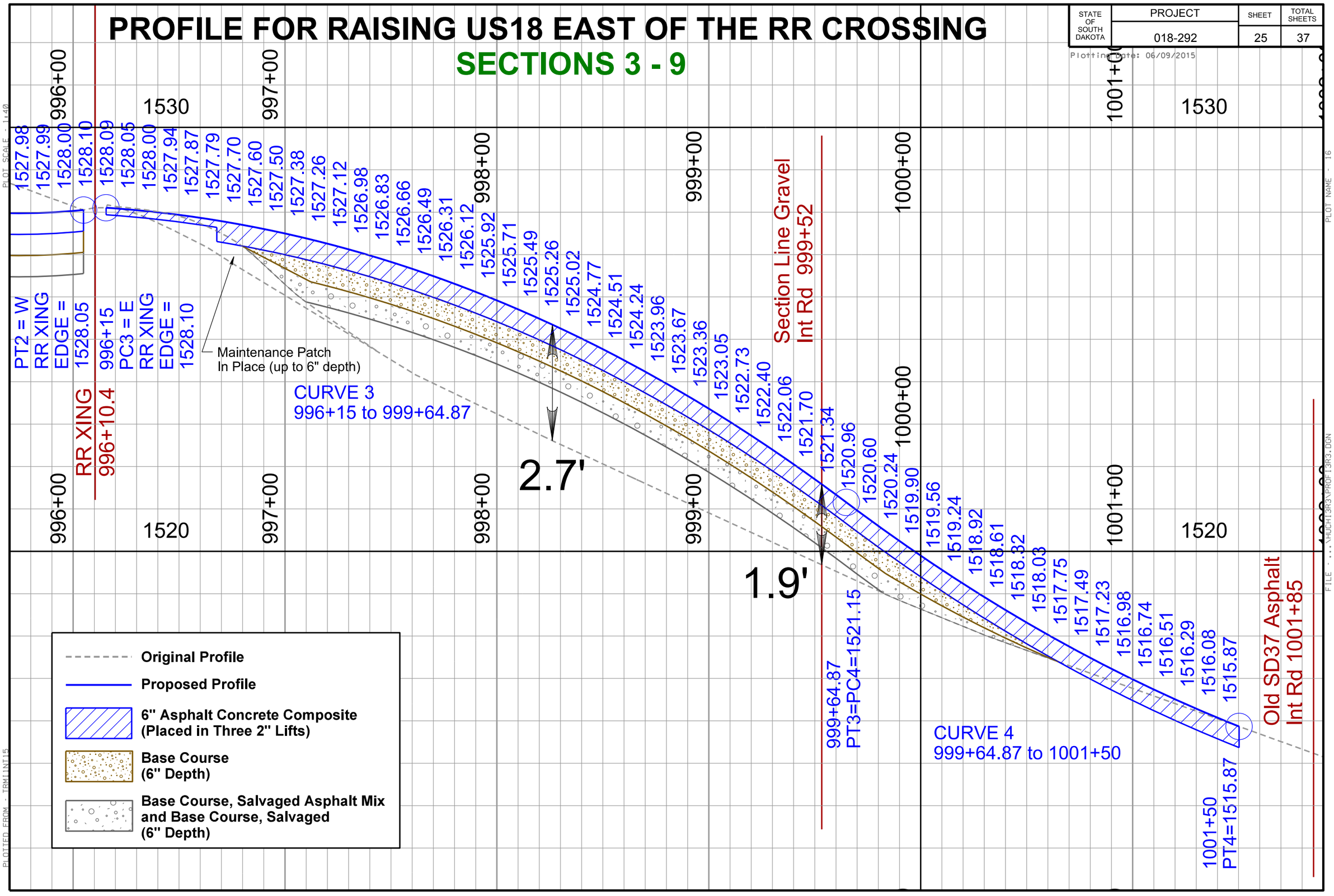
Plotting Date: 06/09/2015

PLOT SCALE - 1:40

PLOT NAME - 16

FILE - ...\HUCHT3R3\PROFT3R3.DGN

PLOTTED FROM - TRM1INT15

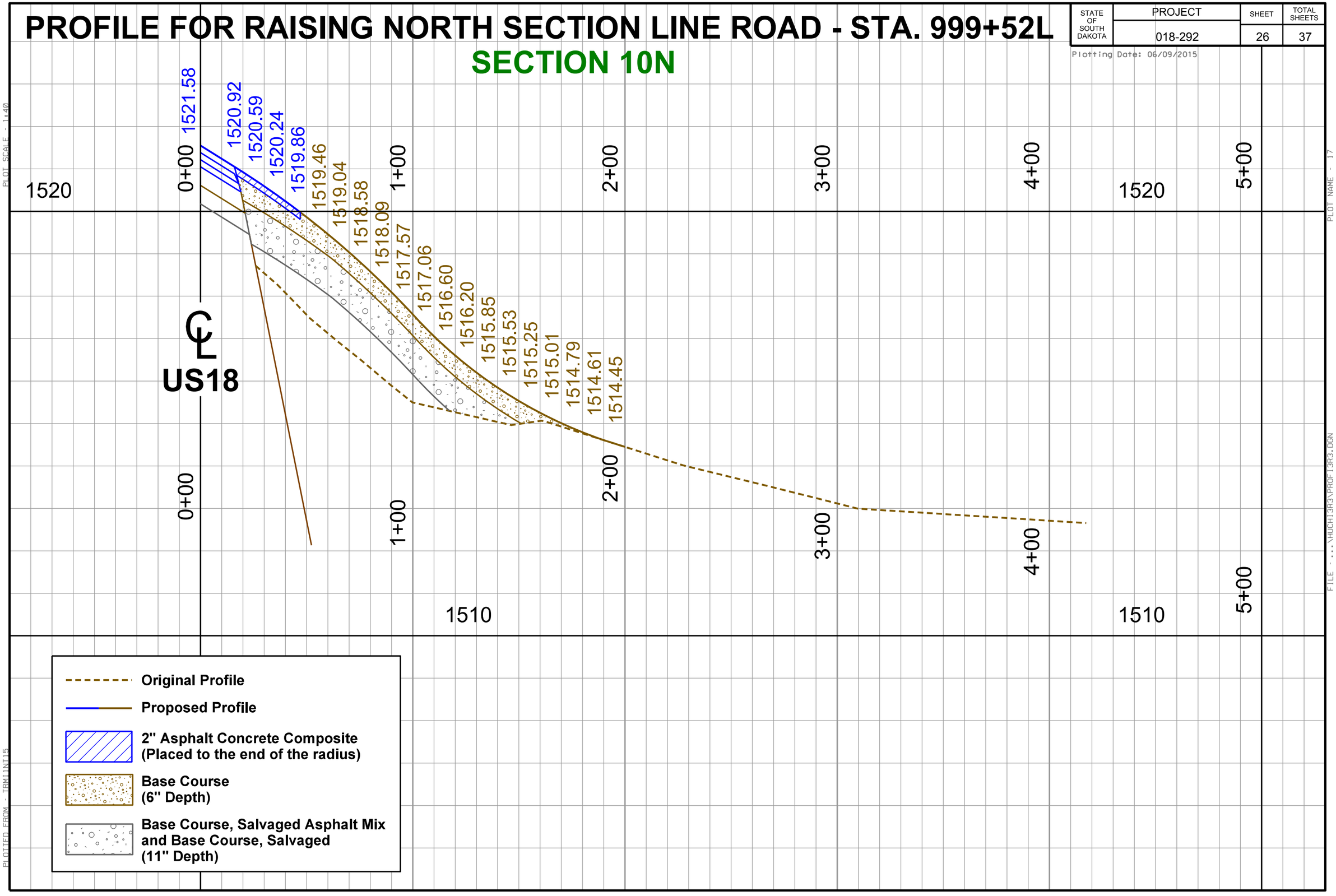


PROFILE FOR RAISING NORTH SECTION LINE ROAD - STA. 999+52L

SECTION 10N

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	26	37

Plotting Date: 06/09/2015



- Original Profile
- Proposed Profile
- 2" Asphalt Concrete Composite (Placed to the end of the radius)
- Base Course (6" Depth)
- Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (11" Depth)

PLOT SCALE - 1:40

PLOT NAME - 17

FILE - ...\HUCH13R3\PROF13R3.DGN

PLOTTED FROM - TRM1INT15

PROFILE FOR RAISING SOUTH SECTION LINE ROAD - STA. 999+52R

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	27	37

Plotting Date: 06/09/2015

SECTION 10S

- Original Profile
- Proposed Profile
- 2" Asphalt Concrete Composite (Placed to the end of the radius)
- Base Course (6" Depth)
- Base Course, Salvaged Asphalt Mix and Base Course, Salvaged (11" Depth)

1521.58 1521.04 1520.83 1520.65 1520.49 1520.34 1520.21 1520.11 1520.02 1519.95 1519.90 1519.86 1519.84 1519.84 1519.85 1519.88 1519.93 1519.99 1520.08 1520.18 1520.29 1520.43 1520.59 1520.76 1520.95

1520 1520

0+00 1+00 2+00 3+00 4+00 5+00

℄ US18

36" RCP/CMP IN PLACE (EXTEND)

1510 1530

PLOT SCALE - 1:40

PLOT NAME - 18

FILE - ...\HUCH13R3\PROFI3R3.DGN

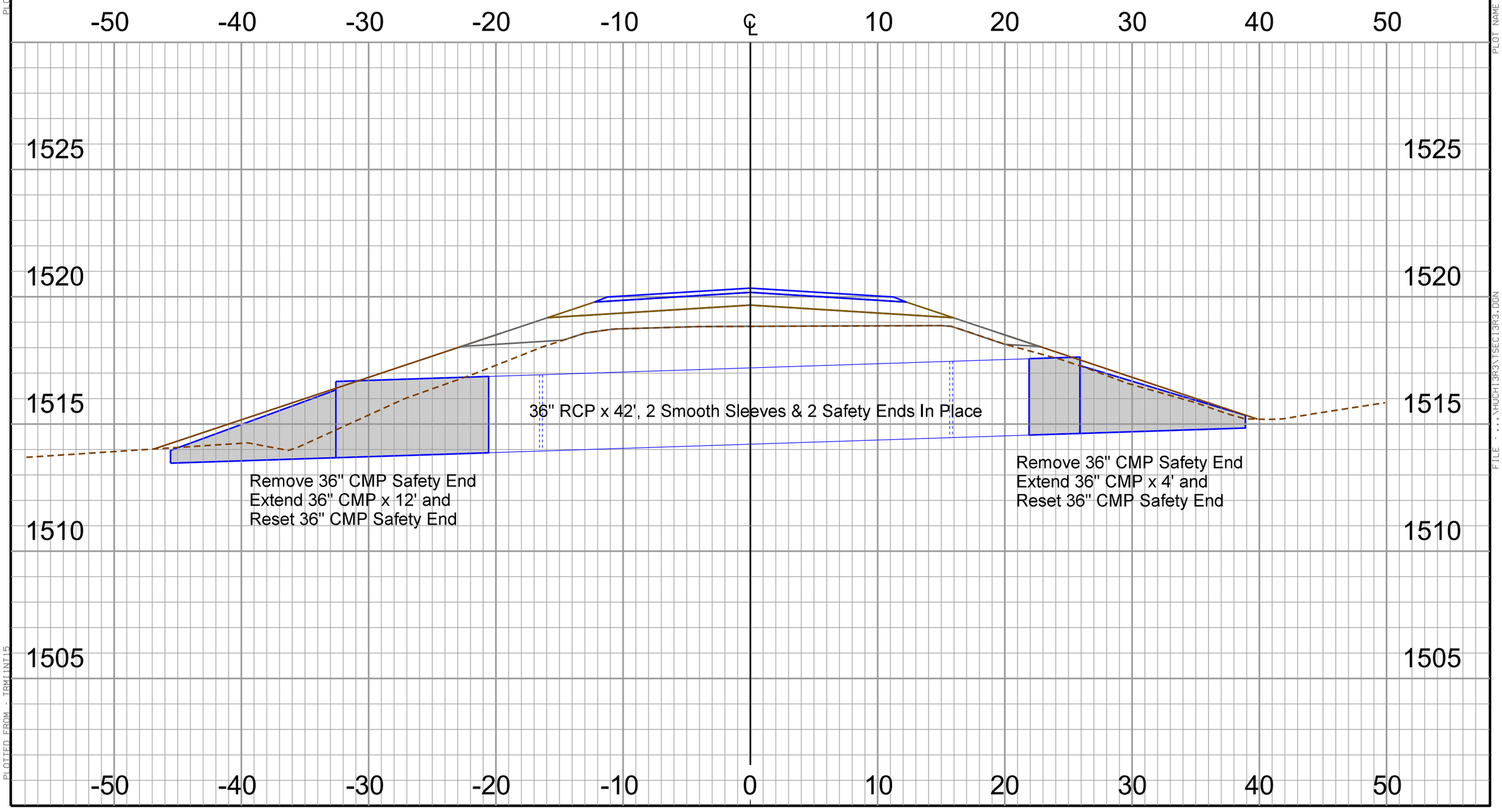
PLOTTED FROM - TRMI1NT15

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-292	28	37

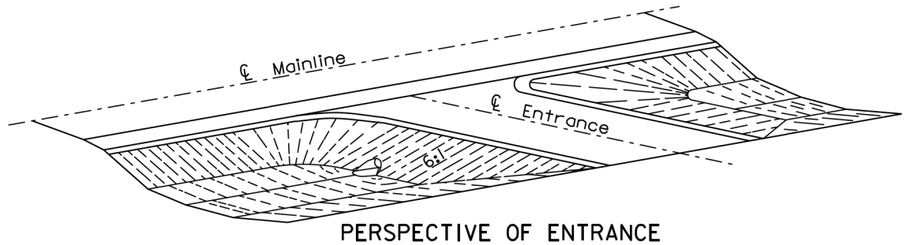
Plotting Date: 06/09/2015

36" CMP CULVERT EXTENSION

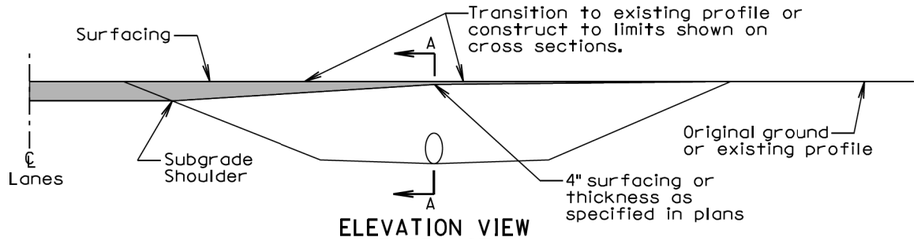
411 AVENUE - SOUTH OF US18
SECTION LINE ROAD STA. 0+60



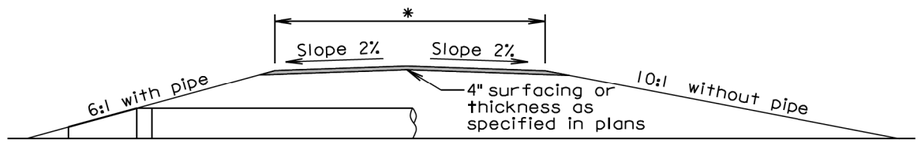
PLOT SCALE - 1:7.5
PLOT NAME - 19
FILE - ...\HUCH13R3\TSECT13R3.DGN
PLOTTED FROM - TRMIINI15



PERSPECTIVE OF ENTRANCE



ELEVATION VIEW (ENTRANCE)



SECTION A-A (ENTRANCE)

*The finished surfacing width is stated elsewhere in the plans. The subgrade width is 4' wider than the finished surfacing width unless stated otherwise in the plans.

GENERAL NOTES:

The ditch section shown above in the perspective and elevation view is only for illustrative purposes.

A 6:1 inslope shall be constructed for an entrance when a pipe is required. A 10:1 inslope shall be constructed when a pipe is not required.

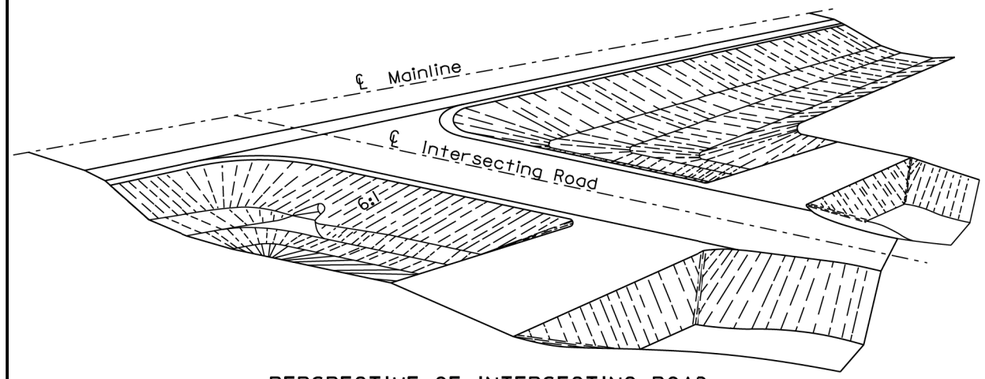
Pipe lengths shall be adjusted if necessary during construction to obtain the 6:1 slopes. For grading projects, the pipe lengths are estimated typically using a 4" thickness of surfacing directly over the subgrade above the pipe.

The transition area between the mainline inslope and the approach inslope for entrances shall be rounded to eliminate an abrupt transition.

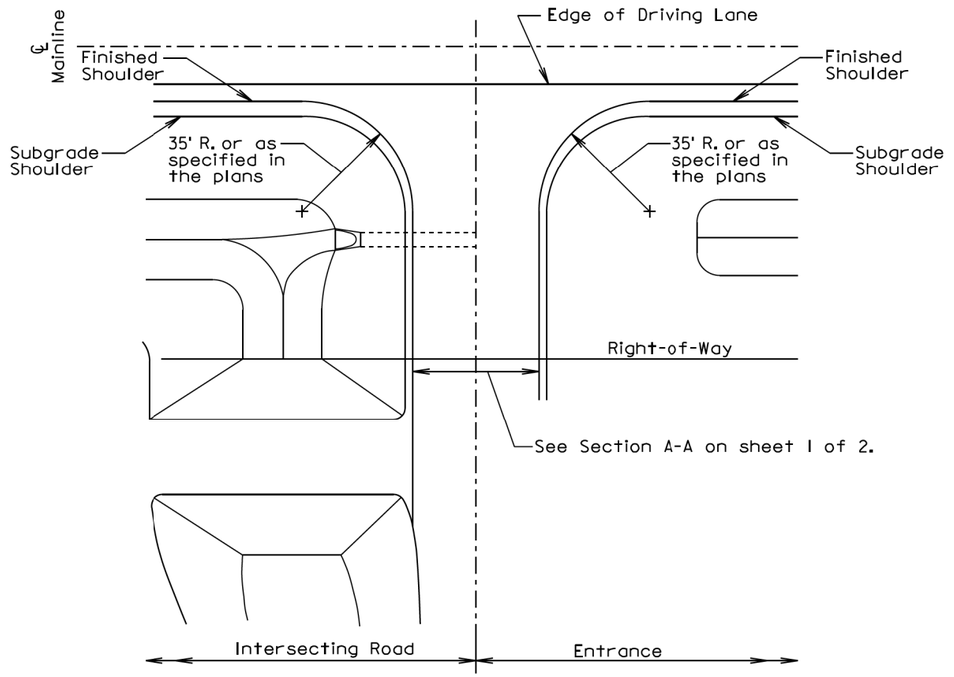
The turning radii shall be 35' for intersecting roads and entrances unless stated otherwise in the plans.

September 6, 2013

Published Date: 2nd Qtr. 2015	SDDOT	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 1 of 2



PERSPECTIVE OF INTERSECTING ROAD



PLAN VIEW

September 6, 2013

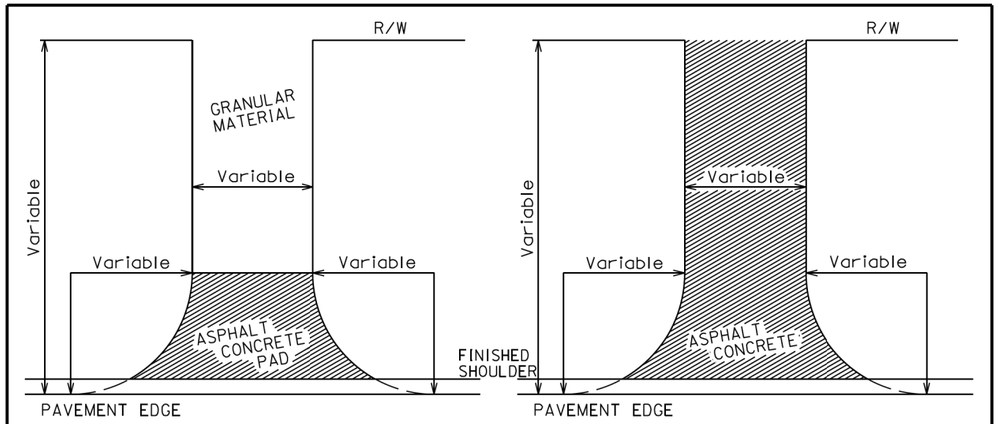
Published Date: 2nd Qtr. 2015	SDDOT	INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 120.01
			Sheet 2 of 2

PLOT SCALE - 1:200

PLOTTED FROM - TRM1INT15

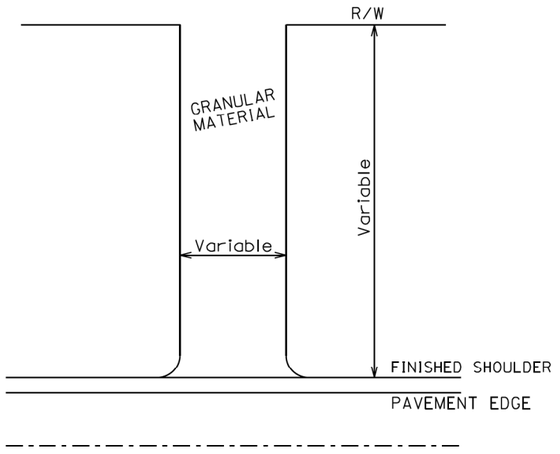
PLOT NAME - 1

FILE - ...\HUCH13R3\STD PLATES 13R3.DGN



INTERSECTING ROAD
NO ASPHALT CONCRETE SURFACING
BEYOND R/W

INTERSECTING ROAD
ASPHALT CONCRETE SURFACING
BEYOND R/W



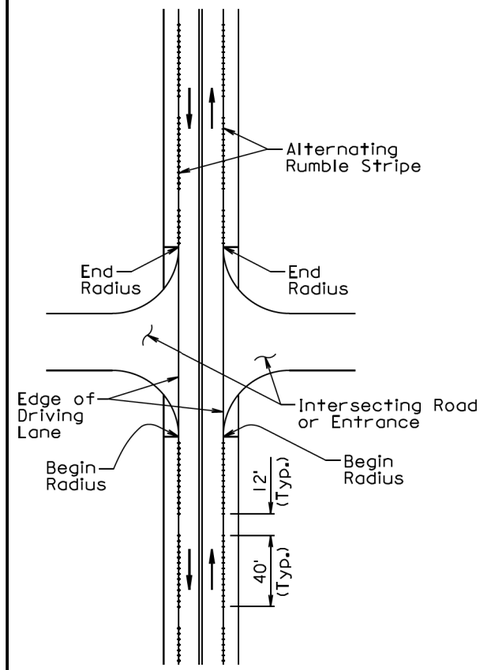
ENTRANCE

The surfacing details shown on this sheet are provided as a guide for surfacing these facilities. The precise construction limits for situations other than the standards shown will be determined by the Engineer, at the time of construction.

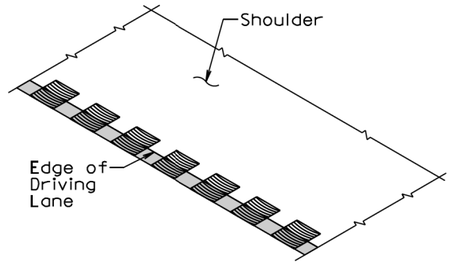
ROADWAY WITH SHOULDER

March 31, 2000

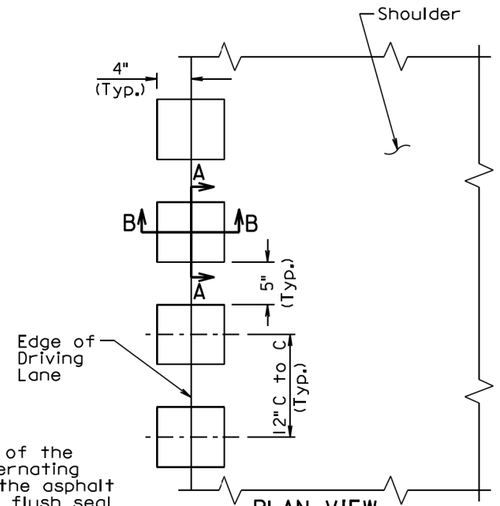
Published Date: 2nd Qtr. 2015	SDDOT	RESURFACING OF INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 320.11
			Sheet 1 of 1



PLAN VIEW



PERSPECTIVE OF TYPICAL
RUMBLE STRIPE IN ASPHALT CONCRETE



PLAN VIEW
TYPICAL RUMBLE STRIPE
IN ASPHALT CONCRETE

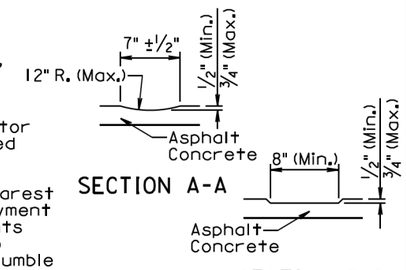
GENERAL NOTES:

A rumble stripe shall be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble stripe shall receive a flush seal with the shoulder flush sealing or asphalt surface treatment.

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

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

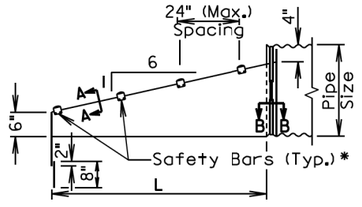
Measurement of the rumble stripe shall be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble stripe shall include the 12' long segments without rumble stripes and the segments adjacent to intersecting roads, entrances, and turnouts without rumble stripes. Payment for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



June 26, 2011

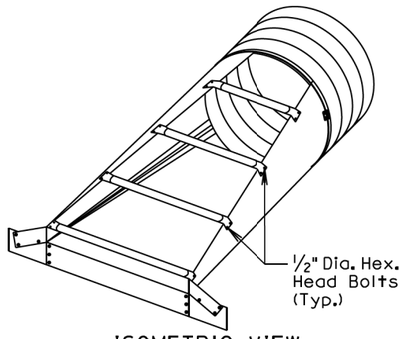
Published Date: 2nd Qtr. 2015	SDDOT	8" RUMBLE STRIPE IN ASPHALT CONCRETE ON NONDIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.20
			Sheet 1 of 1

PLOT SCALE - 1:200
PLOT NAME - 2
FILE - ...\HUCH13R3\STD PLATES I3R3.DGN
PLOTTED FROM - TRM1INT15

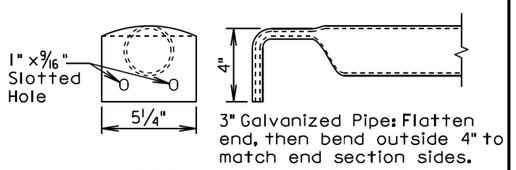


ELEVATION VIEW

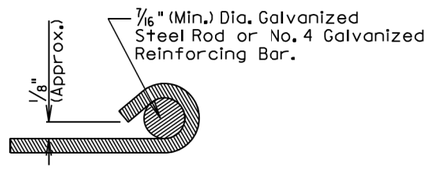
*Number of bars required will vary depending on the length of the end section.



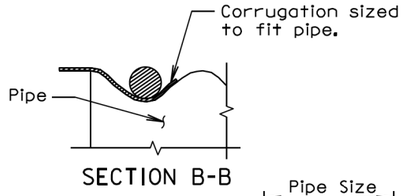
ISOMETRIC VIEW



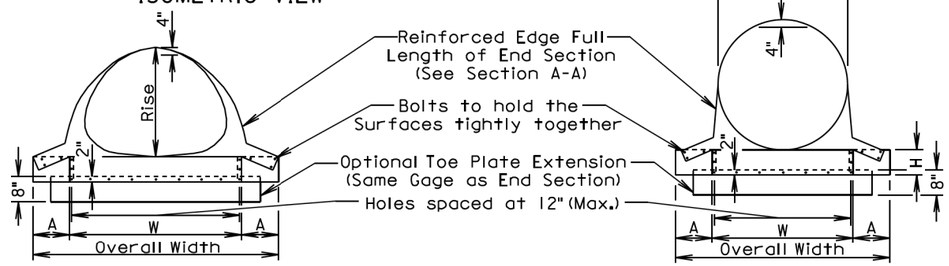
DETAIL OF SAFETY BARS



SECTION A-A

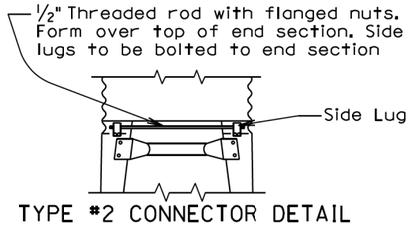


SECTION B-B

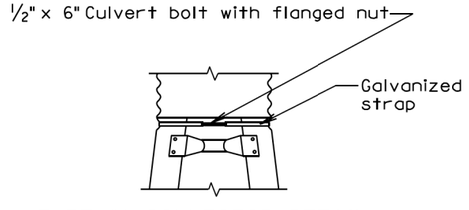


FRONT VIEW

FRONT VIEW



TYPE #2 CONNECTOR DETAIL
(For 30" and Larger)
(For 21" X 15" and Larger)



TYPE #1 CONNECTOR DETAIL
(For 15" Through 24")

August 31, 2013

Published Date: 2nd Qtr. 2015	SDDOT	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 1 of 2

ARCH C.M.P. SAFETY ENDS

Equv. Dia. (Inch)	(Inches) Span	Rise	Min. Thick. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions Slope	Length (Inch)
18	21	15	.064	16	8	6	27	43	6:1	30
21	24	18	.064	16	8	6	30	46	6:1	48
24	28	20	.064	16	8	6	34	50	6:1	60
30	35	24	.079	14	12	9	41	65	6:1	84
36	42	29	.109	12	12	9	48	72	6:1	114
42	49	33	.109	12	16	12	55	87	6:1	138
48	57	38	.109	12	16	12	63	95	6:1	168
54	64	43	.109	12	16	12	70	102	6:1	198
60	71	47	.109	12	16	12	77	109	6:1	222
72	83	57	.109	12	16	12	89	121	6:1	282

CIRCULAR C.M.P. SAFETY ENDS

Pipe Dia. (Inch)	Min. Thick. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions Slope	Length (Inch)
15	.064	16	8	6	21	37	6:1	30
18	.064	16	8	6	24	40	6:1	48
21	.064	16	8	6	27	43	6:1	66
24	.064	16	8	6	30	46	6:1	84
30	.109	12	12	9	36	60	6:1	120
36	.109	12	12	9	42	66	6:1	156
42	.109	12	16	12	48	80	6:1	192
48	.109	12	16	12	54	86	6:1	228
54	.109	12	16	12	60	92	6:1	264
60	.109	12	16	12	66	98	6:1	300

GENERAL NOTES:

Safety ends shall be fabricated from galvanized steel conforming to the requirements of the Standard Specifications.

Safety bars shall be fabricated from steel schedule 40 pipe in conformance with ASTM A53, grade B or HSS 3.5X.216 in conformance with ASTM A500, grade B.

Slotted holes for safety bar attachment shall be provided for all end sections.

Attachment to circular pipes 15" through 24" diameter shall be made with Type #1 straps. All other sizes shall be attached with Type #2 rods and lugs.

When stated in the plans, optional toe plate extension shall be punched and bolted to end section apron lip with ⅜" diameter galvanized bolts. Steel for toe plate extension shall be same gauge as end section. Dimensions shall be overall width less 6" by 8" high.

Installation shall be performed in accordance with the Standard Specifications.

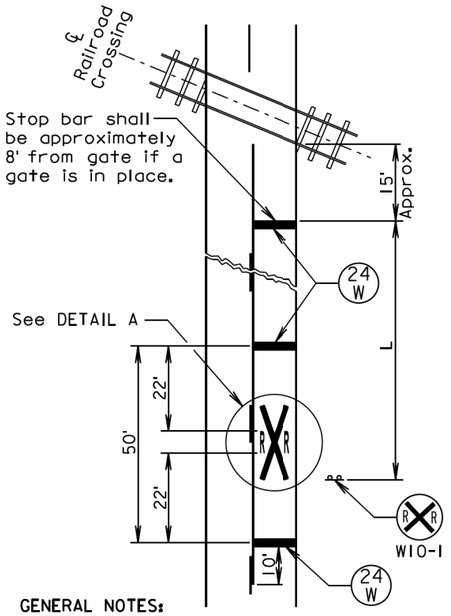
Cost of all work and materials required for fabrication and installation of safety ends shall be incidental to the bid items for the various sizes of safety ends.

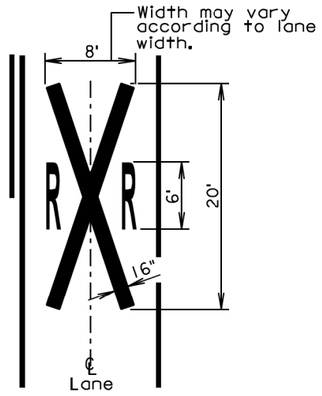
August 31, 2013

Published Date: 2nd Qtr. 2015	SDDOT	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 2 of 2

KEY	ITEM
24 W	24" White
RXR	White

Posted Speed Limit (M.P.H.)	L (Ft.)
≤ 30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550





DETAIL A

GENERAL NOTES:

The railroad crossing pavement markings shall be placed symmetrically about the centerline of the railroad crossing.

When pavement markings are used, a portion of the RXR symbol shall be placed directly opposite of the advance warning sign W10-1.

On multi-lane roads the transverse bands shall extend across all approach lanes and individual RXR symbols shall be placed in each approach lane.

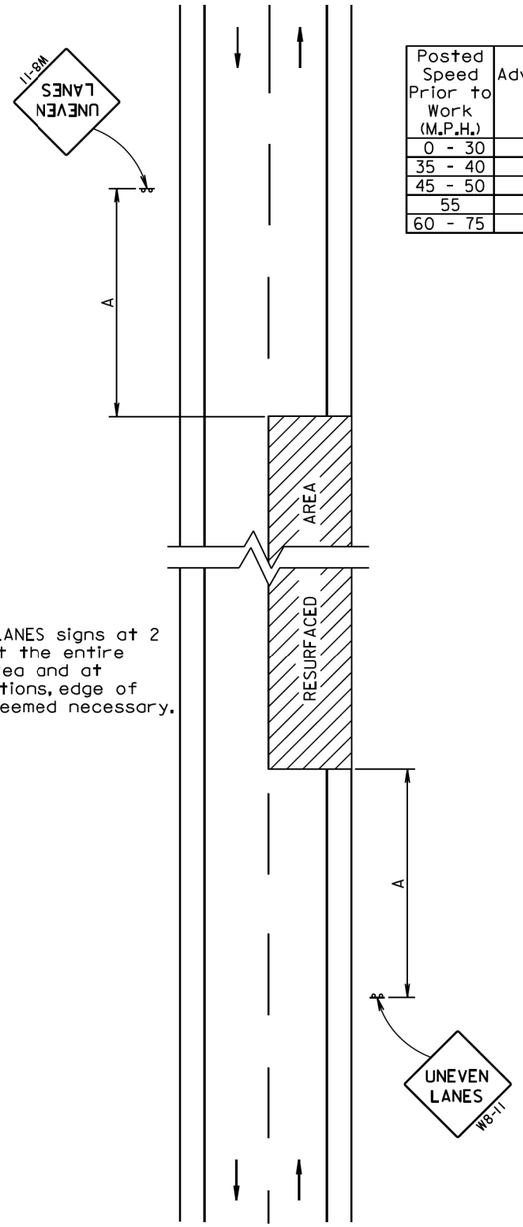
The railroad crossing pavement markings shall consist of all the transverse bands, stop bars, and RXR symbols.

When pavement marking paint is used for marking the railroad crossing, all costs for furnishing and painting the markings, materials, labor, and necessary equipment shall be incidental to the contract unit price per gallon for "Pavement Marking Paint, White".

When pavement marking tape is used for marking the railroad crossing, all costs for furnishing and placing the markings, materials, labor, and necessary equipment shall be incidental to the contract unit price per each for "Cold Applied Plastic Pavement Marking, Railroad Crossing".

June 26, 2013

Published Date: 2nd Qtr. 2015	SDDOT	PAVEMENT MARKINGS AT RAILROAD CROSSING	PLATE NUMBER 633.10
			Sheet 1 of 1



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

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.

July 1, 2005

Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
UNEVEN ROAD SURFACE

PLATE NUMBER 634.22

Sheet 1 of 1

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 - 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.

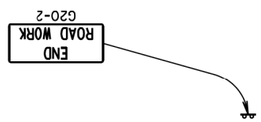
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

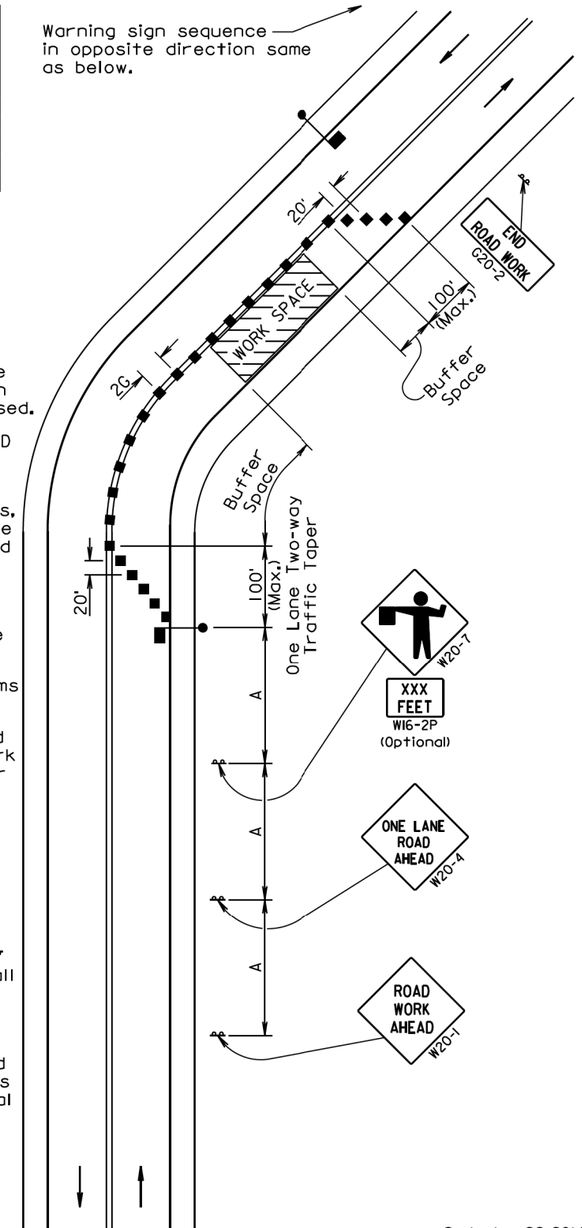
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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.



September 22, 2014

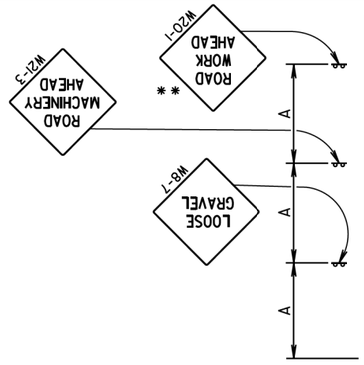
Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER 634.23

Sheet 1 of 1



Flagger

Type I or Type 2 Barricades

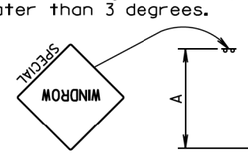
* Need for flagger to be determined by the Highway Authority.

** Signs not required if activity is within a construction zone.

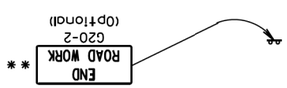
Work areas which are duplicated less than one mile apart, may be classified as one work area for purposes of sign installation.

Type I or 2 Barricades, KEEP RIGHT signs (as required) shall mark each windrow left overnight.

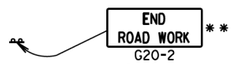
4"x4" delineators placed back-to-back shall be installed along the outside edge of roadway at 264 feet maximum spacing on tangent on alternating sides and 132 feet spacing on outside of curves greater than 3 degrees.

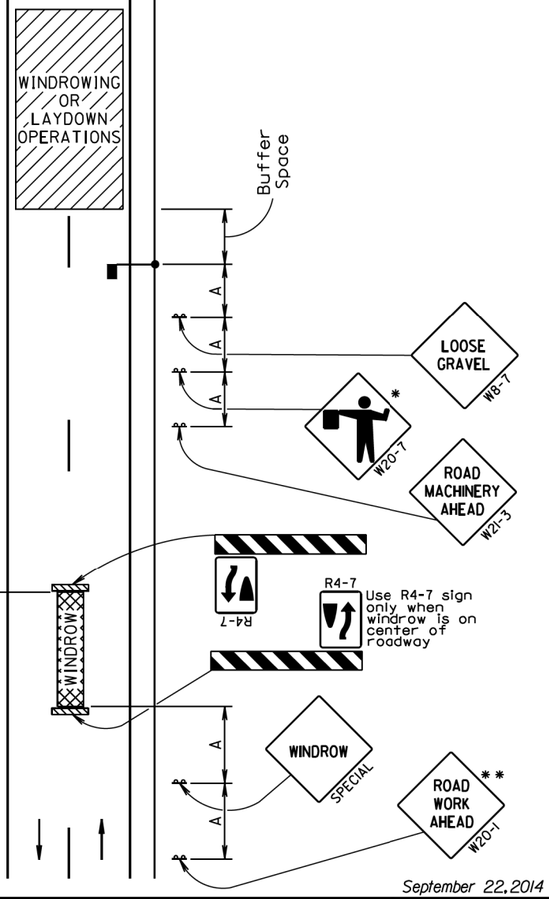


The length of A may be adjusted to fit field conditions.



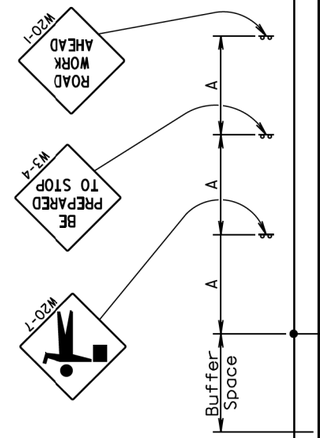
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000





September 22,2014

Published Date: 2nd Qtr. 2015	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WINDROWING OR LAYDOWN OPERATION	PLATE NUMBER 634.27
			Sheet 1 of 1

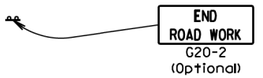


Conditions represented are for work that requires closings during daytime hours only.

This application is intended for a planned temporary closing not to exceed 15 to 20 minutes.

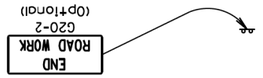
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000

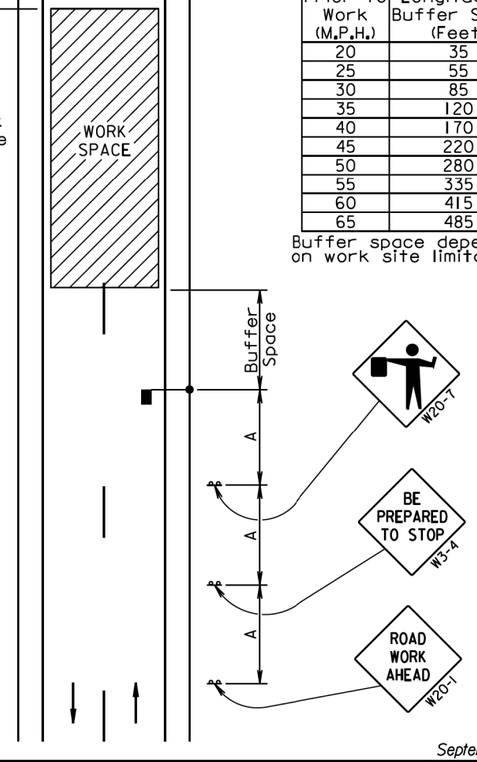
Flagger



Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485

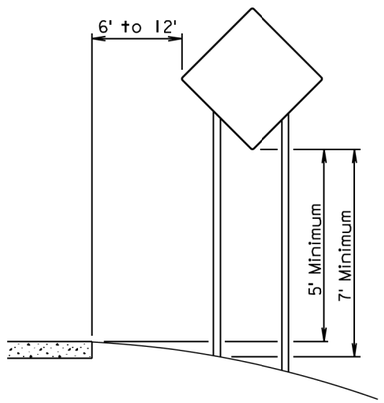
Buffer space dependent on work site limitations.



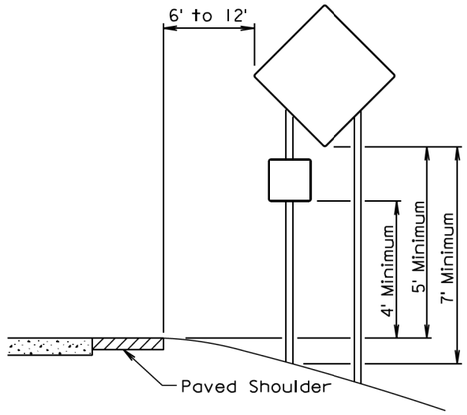


September 22,2014

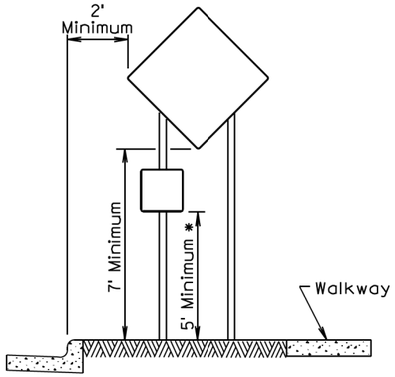
Published Date: 2nd Qtr. 2015	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES TEMPORARY ROAD WORK	PLATE NUMBER 634.30
			Sheet 1 of 1



RURAL DISTRICT

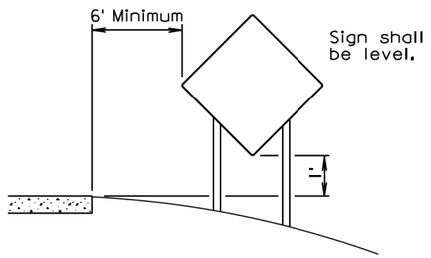


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

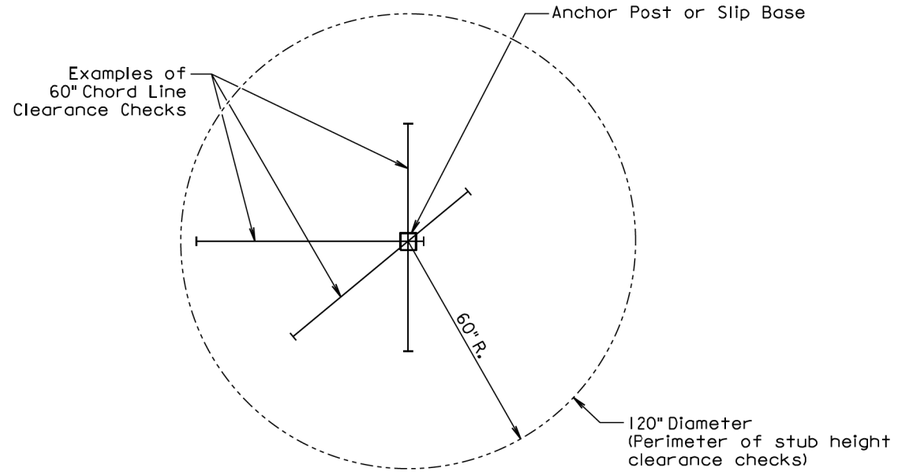
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



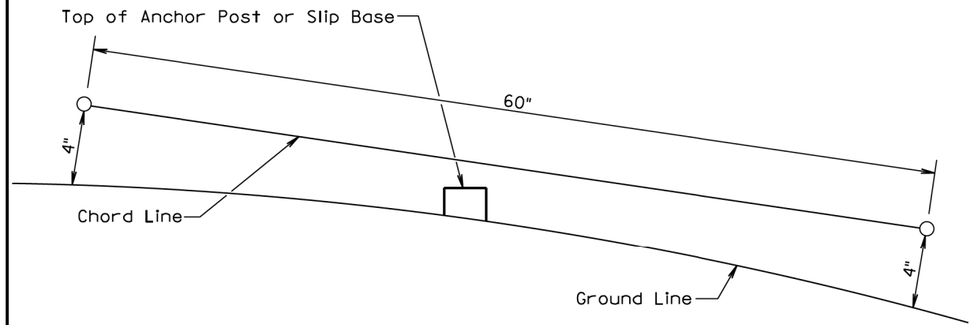
RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22,2014

Published Date: 2nd Qtr. 2015	SDDOT	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: 2nd Qtr. 2015	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

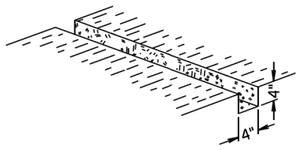
PLOT SCALE - 1:200

PLOTTED FROM - TRMIINT15

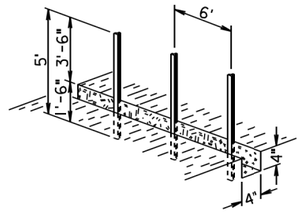
PLOT NAME - 7

FILE - ...\HUCH13R3\STD PLATES I3R3.DGN

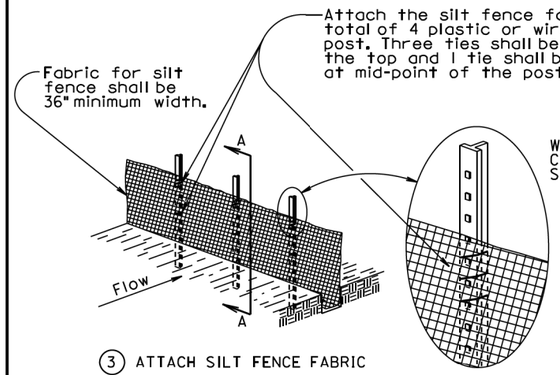
MANUAL HIGH FLOW SILT FENCE INSTALLATION



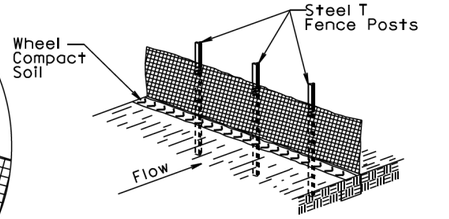
(1) EXCAVATE TRENCH



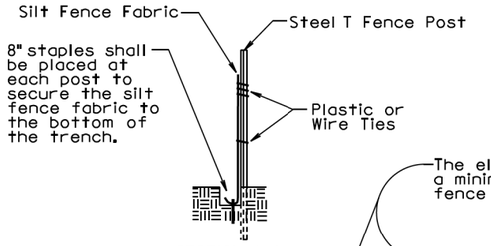
(2) DRIVE STEEL T FENCE POSTS



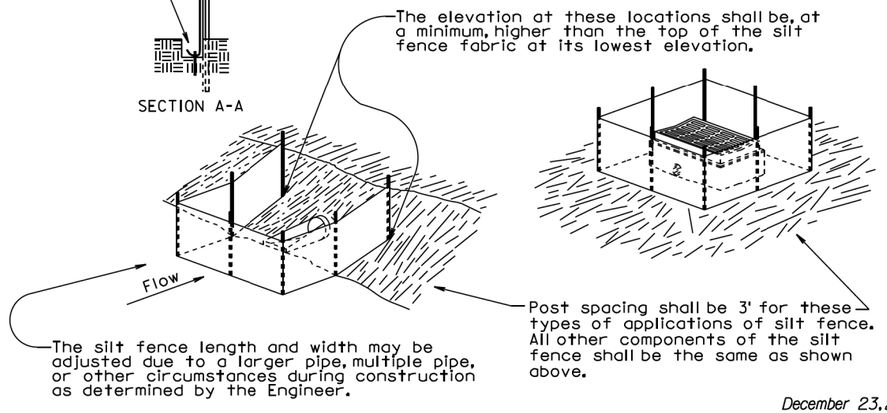
(3) ATTACH SILT FENCE FABRIC



(4) BACKFILL TRENCH AND WHEEL COMPACT SOIL



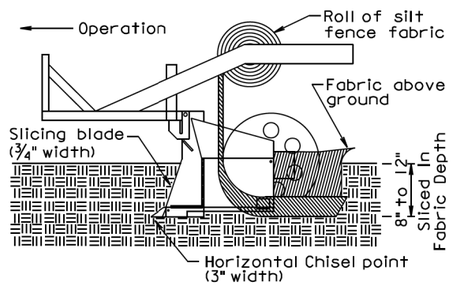
SECTION A-A



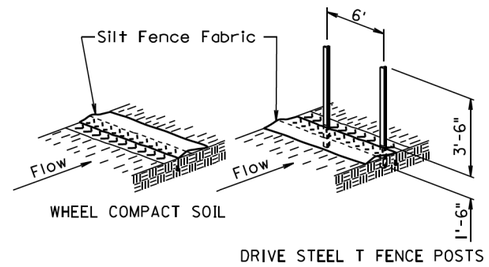
December 23,2003

Published Date: 2nd Qtr. 2015	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

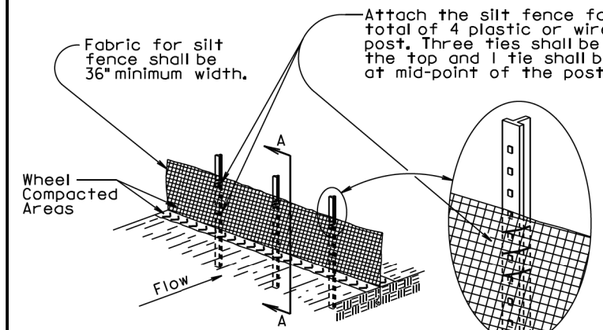
MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



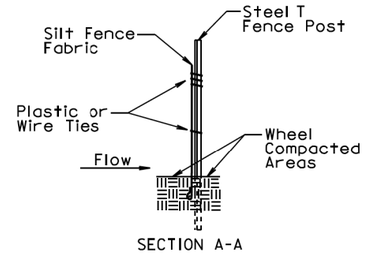
(1) INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



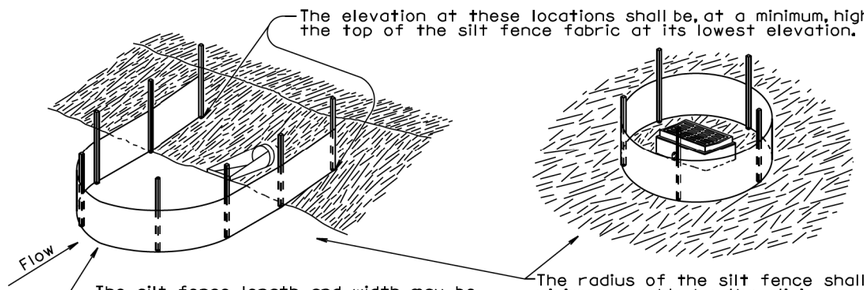
(2) WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



(3) ATTACH SILT FENCE FABRIC



SECTION A-A



GENERAL NOTE:

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

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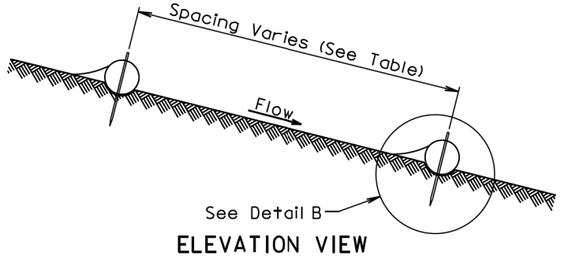
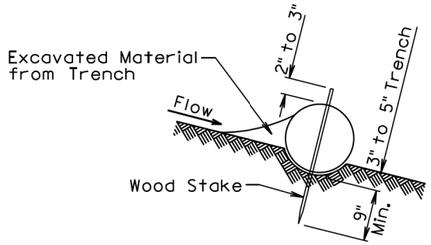
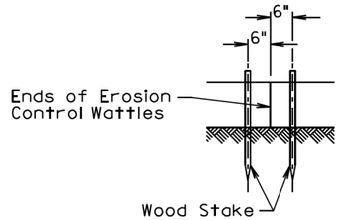


ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

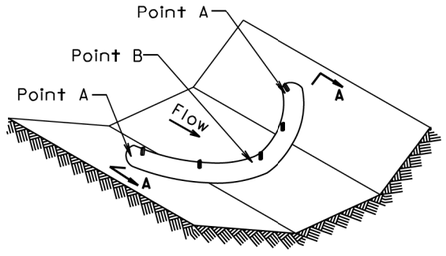
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40



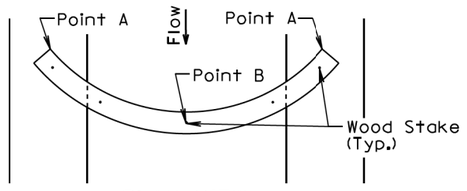
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C

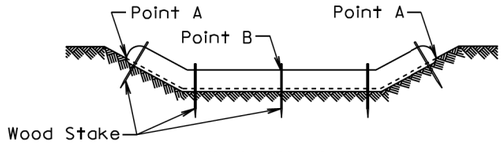


ISOMETRIC VIEW
DITCH INSTALLATION



PLAN VIEW
DITCH INSTALLATION

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



SECTION A-A

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GENERAL NOTES:

At cut or fill slope installations, wattles shall 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 shall 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 shall 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 shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

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

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than ½". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall 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 shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

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

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