

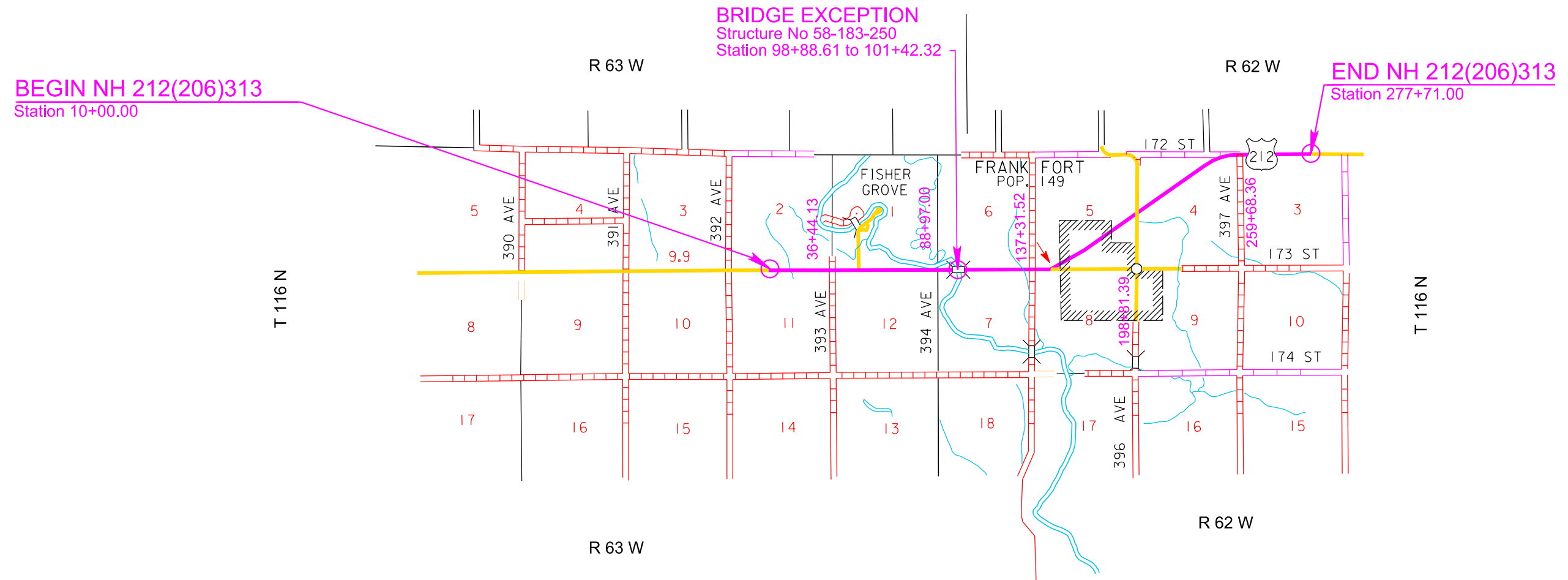
SECTION F: SURFACING PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F1	F12

Plotting Date: 10/24/2024

INDEX OF SHEETS

- F1 General Layout with Index
- F2-F5 Estimate with General Notes and Tables
- F6 In Place Typical Sections
- F7-F9 Typical Surfacing Sections
- F10 Guardrail Embankment
- F11 Surfacing Transitions Detail
- F12 Special Detail



SECTION F – ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F2	F12

Plotting Date: 10/24/2024

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	1,631.2	MGal
260E1030	Base Course, Salvaged	135,916.5	Ton
260E6000	Granular Material, Furnish	33,790.3	Ton
270E0220	Blend and Stockpile Granular Material	67,580.6	Ton
330E0010	MC-70 Asphalt for Prime	93.0	Ton
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	20.4	Ton
330E1000	Blotting Sand for Prime	434.8	Ton
330E3000	Sand for Fog Seal	10.0	Ton
332E0010	Cold Milling Asphalt Concrete	85,714	SqYd
360E0020	AE150S Asphalt for Surface Treatment	145.3	Ton
360E1050	Type 3 Cover Aggregate	1,956.4	Ton

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown in the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

BASE COURSE, SALVAGED

Base Course, Salvaged will be obtained from the stockpile site(s) provided by the Contractor and may be used without further gradation testing.

The Contractor will ensure that the Base Course, Salvaged material produced by Blend and Stockpile Granular Material, contains no more than 50% salvaged asphalt mix material and at least 50% granular material.

All Base Course, Salvaged material will be blended to the satisfaction of the Engineer.

All other requirements for Base Course, Salvaged will apply.

COVER AGGREGATE

Cover Aggregate will conform to the requirements of the Specifications for Type 3 and will be furnished by the Contractor.

COLD MILLING ASPHALT CONCRETE

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 21. This value was obtained from testing during construction of the in-place asphalt concrete.

Cold milling asphalt concrete will be done to acquire 9,000 tons of salvaged asphalt to be stockpiled and used as RAP in the hot mixed asphalt concrete for PCN 06PQ. The depth of cold milling asphalt concrete should not exceed 2 inches. In areas where maintenance patches have raised and/or widened the road, additional asphalt concrete will be milled to provide a uniform typical section from centerline to the edge of the finished shoulder. These areas also include farm, residential, field entrances and intersecting roads. Milling will be daylighted to the outside edge of the roadway. The "Cold Milling Asphalt Concrete" plans quantity of 85,714 SqYd was computed based on the area required to produce the quantity of salvaged asphalt to be stockpiled by cold milling at a 2" depth.

Field conditions will vary from that given in the typical section(s). Therefore, the Contractor will be allowed to adjust the mill depth, as necessary, to provide the quantity of RAP specified by the plans, if approved by the Engineer.

The salvaged asphalt concrete material will be stockpiled within 1 mile of the project. It will be crushed to meet the requirements of Section 884.2 C.1 prior to stockpiling.

All costs for crushing, hauling, and stockpiling the salvaged asphalt concrete material produced by cold milling will be incidental to the contract unit price per ton for "Cold Milling Asphalt Concrete".

TABLE OF SALVAGED MATERIAL UTILIZATION

	RAP to be saved for future surfacing project	Base Course, Salvaged
	tons	tons
Cold Milling Asphalt Concrete	9,000.0	
Salvage and Stockpile Asphalt Mix and Granular Base Material		68,336.0
*Salvage and Stockpile Asphalt Mix		33,790.3
*Granular Material, Furnished		33,790.3
Total =	9,000.0	135,916.5

* Salvaged Asphalt Concrete Mix and Granular Material, Furnish will be blended at a rate of 50% salvaged asphalt mix material and at least 50% granular material and will be used as Base Course, Salvaged.

BLEND AND STOCKPILE GRANULAR MATERIAL

An Estimated 33,790.3 tons (for informational purposes only) of Salvaged Asphalt Mix Material will be blended with 33,790.3 tons of Granular Material, Furnish and stockpiled at the Contractor's furnished stockpile site.

The Contractor will use a portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale to control the blending and weighing of the salvage material with Contractor furnished granular material.

The salvaged asphalt mix material will be crushed to meet the requirements of Section 884.2 D.2 prior to blending into the stockpile.

Salvaged asphalt mix material will be blended with Granular Material, Furnish at a rate of 50% salvaged asphalt mix material and 50% Granular Material, Furnish to obtain stockpile material. Material will be uniformly blended to the satisfaction of the Engineer.

No further gradation testing of the blended material will be required.

All costs for crushing the salvaged asphalt mix material, stockpiling, and blending the materials will be incidental to the contract unit price per ton for "Blend and Stockpile Granular Material".

STOCKPILE SITE FOR SALVAGED ASPHALT MIX MATERIAL

The Contractor will acquire a stockpile site within 1 mile of the project for placing in a separate pile 9,000 tons of salvaged asphalt produced by cold milling to be used on a future asphalt concrete surfacing project, and for the temporary storage and handling of salvaged asphalt mix material from this project. Equipment will not be allowed on the stockpile.

The Contractor will secure transferable rights from the landowner for access, storage, handling, and retrieval of the salvaged material. The Contractor will provide and transfer these rights to the Department by completion of the salvaging and stockpiling operation.

Upon completion of the stockpile, the stockpile site and haul road to the site will be left in a neat and accessible condition as determined by the Engineer. At this time the Contractor will be released from any further work obligation regarding the stockpile site and haul road.

All costs associated with acquiring the site, including land rental and loss of production to the landowner through December 31, 2026, haul road restoration after completion of stockpiling, stripping of topsoil, and site preparation prior to stockpiling will be incidental to the contract unit price per ton for "Salvage and Stockpile Asphalt Mix Material". Stockpile cleanup, replacement of topsoil, reseeding, and final haul road restoration will be the responsibility of the Department.

Plot Scale - 1:200

Plotted From - TRPR15123

File - ...:\p7\spmk0808\Notes\SectionF.dgn

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Base Course, Salvaged spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor will compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor's calculations and spread charts. The station to station spread will be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day's shift, the Contractor will verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated,
- The amount of material wasted if any,
- Each day's ticket summary is marked with the corresponding 'computed by',
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item will be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor will correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor will be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of $\pm 1/2$ inch of the plan shown depth, the Contractor will correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer. All costs for providing the Contractor furnished checker and performing all related duties will be incidental to the contract lump sum price for the CHECKER. No allowances will be made to the contract lump sum price for CHECKER due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

GRANULAR MATERIAL, FURNISH

Granular material will be furnished by the Contractor for use in blending with the salvaged asphalt mix material from this project.

The granular material will be Base Course meeting the requirements of Section 882.

FOG SEAL

The fog seal will be placed following the completion of the asphalt surface treatment. Prior to the application of the fog seal, the Contractor will be required to broom the asphalt surface treatment. A CSS-1h or SS-1h emulsion will be used for the fog seal application. A water-to-emulsion rate of 1:1 should be used for the Fog Seal application.

The Contractor will fog seal the entire asphalt surface treatment surface.

The Contractor will plan the fog seal operation to allow adequate cure time for the fog seal and to minimize/eliminate the need to apply Sand for Fog Seal.

If adequate cure time for the Fog Seal is not available, to facilitate traffic, the Contractor will be allowed to place a minimum sufficient amount of blotting sand on the fog seal to allow traffic to cross the uncured portion of the fog seal, as permitted by the Engineer.

Sand for Fog Seal is only intended to be placed for accesses to businesses, intersection crossings, and as determined by the Engineer to facilitate traffic movements. Sand for Fog Seal will not be placed to accelerate the Contractor's schedule.

Sand that is applied will be broomed off the surface of the roadway once the fog seal has sufficiently cured as determined by the Engineer.

Sand for Fog Seal will conform to Section 879.1.B.

Prior to hauling, Sand for Fog Seal will be screened to minimize segregation, eliminate oversize, and effectively breakup or discard material bonded into chunks. All costs for supplying, hauling, placing, and brooming the blotting sand will be incidental to the contract unit price per ton for "Sand for Fog Seal".

SAND FOR FOG SEAL

Included in the Estimate of Quantities are 10 tons of Sand for Fog Seal to be used where necessary for maintenance of traffic as directed by the Engineer. Sand for Fog Seal will be furnished by the Contractor.

BLOTTING SAND FOR PRIME

Included in the Estimate of Quantities are 10 tons of Blotting Sand for Prime to be used where necessary for maintenance of traffic as directed by the Engineer. (Rate = 10 pounds per square yard)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F3	F12

Plotting Date: 10/24/2024

RATES OF MATERIALS

The Estimate of Surfacing Quantities is based on the following quantities of materials per mile.

Section 2

- Sta. 10+00 to 98+88
- Sta. 101+42 to 144+00
- Sta. 151+77 to 188+64
- Sta. 210+34 to 277+71

BASE COURSE, SALVAGED

Salvaged Material 23,368 tons.

Water for Granular Material at the rate of 284.0 M. Gallons.

MC-70 Asphalt for Prime at the Rate of 16.3 ton applied 47 feet wide (Rate = 0.15 gallon per square yard).

Blotting Sand for Prime at the rate of 70 tons applied 24 feet wide (Rate = 10 lbs. per square yard).

ASPHALT SURFACE TREATMENT

Asphalt for Surface Treatment AE150S at the rate of 24.4 tons applied 28 feet wide (Rate = 0.35 gallon per square yard).

Cover Aggregate at the rate of 329 Tons applied 28 feet wide (Rate = 40 lbs. per square yard).

FOG SEAL

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 3.5 ton applied 28 feet wide (Rate = 0.05 gallon per square yard).

RATES OF MATERIALS

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

Section 3

- Sta. 145+19 to 151+77

BASE COURSE, SALVAGED

Salvaged Material 553.41 tons.

Water for Granular Material at the rate of 6.64 M. Gallons.

MC-70 Asphalt for Prime at the Rate of 0.39 ton applied 59 feet wide (Rate = 0.15 gallon per square yard).

Blotting Sand for Prime at the rate of 2.00 tons applied 36 feet wide (Rate = 10 lbs. per square yard).

ASPHALT SURFACE TREATMENT

Asphalt for Surface Treatment AE150S at the rate of 0.66 tons applied 40 feet wide (Rate = 0.35 gallon per square yard).

Cover Aggregate at the rate of 8.89 Tons applied 40 feet wide (Rate = 40 lbs. per square yard).

FOG SEAL

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.09 ton applied 40 feet wide (Rate = 0.05 gallon per square yard).

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F4	F12

Plotting Date: 10/24/2024

Plot Scale - 1:200

Plotted From - TRPR15123

File - ...ap7\spmk0808\NotesSectionF.dgn

TABLE OF ADDITIONAL QUANTITIES

Location-Description	Water for Granular Material	Base Course, Salvaged	MC-70 Asphalt for Prime	Blotting Sand for Prime	AE150S Asphalt for Surface Treatment	Type 3 Cover Aggregate	SS-1h or CSS-1h Asphalt for Fog Seal
	MGal	Ton	Ton	Ton	Ton	Ton	Ton
Mainline							
Sta. 144+00 to Sta. 145+19	7.1	595.0	0.4	2.0	0.7	9.0	0.1
Sta. 188+64 to Sta. 210+34	224.6	18,715.7	9.0	48.0	15.8	210.9	2.2
Vertical Transitions							
Sta. 10+00 to 12+00	1.6	131.3					
Sta. 96+88.61 to 98+88.61	1.6	131.3					
Sta. 101+42.32 to 103+42.32	1.6	131.3					
Sta. 275+71 to 277+71	1.6	131.3					
Guardrail – Str. # 58-183-250							
West end – left side	1.2	103.0	0.1	1.0	0.2	2.0	--
West end – right side	1.8	150.0	0.1	1.0	0.2	3.0	--
East end – left side	1.7	142.0	0.1	1.0	0.2	3.0	--
East end – right side	1.3	111.0	0.1	1.0	0.2	2.0	--
Miscellaneous Areas							
XR151 Sta. 0+25 to 6+18	11.1	926.3	1.3	7.9	2.5	34.3	0.4
XR198 Sta. 10+00 to 29+11	44.4	3,701.9	5.3	25.3	8.8	119.1	1.3
Farm Entrances – 14	8.5	693.0					
Double Farm Entrances – 4	3.2	260.0					
Fisher Lane	0.6	50.0	0.1	1.0	0.4	5.0	0.1
Intersecting Roads – 8	4.3	357.0	1.0	9.0	2.5	34.0	--
Historical Turnout	3.5	294.0	0.2	2.0	0.6	7.0	0.1
	319.7	26,624.1	17.7	99.2	32.1	429.3	4.2

Application Rates: MC-70 Asphalt for Prime rate = 0.15 gallon per square yard
 Blotting Sand for Prime rate = 10 lbs. per square yard.
 AE 150S Asphalt for Surface Treatment rate = 0.35 gallon per square yard.
 Type 3 Cover Aggregate rate = 40 lbs. per square yard.
 SS-1h or CSS-1h Asphalt for Fog Seal rate = 0.05 gallon per square yard.

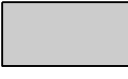
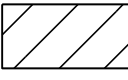
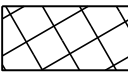


TABLE OF MATERIAL QUANTITIES

Location-Description	Water for Granular Material	Base Course, Salvaged	MC-70 Asphalt for Prime	Blotting Sand for Prime	AE150S Asphalt for Surface Treatment	Type 3 Cover Aggregate	SS-1h or CSS-1h Asphalt for Fog Seal	Sand for Fog Seal
	MGal	Ton	Ton	Ton	Ton	Ton	Ton	Ton
Section 2 – Rates of Materials	1,267.8	105,651.6	72.7	312.4	108.9	1,468.6	15.6	
Section 3 – Rates of Materials	43.7	3,640.8	2.6	13.2	4.3	58.5	0.6	
Additional Quantities Table	319.7	26,624.1	17.7	99.2	32.1	429.3	4.2	
Quantities from Notes				10.0				10.0
TOTAL	1,631.2	135,916.5	93.0	434.8	145.3	1,956.4	20.4	10.0

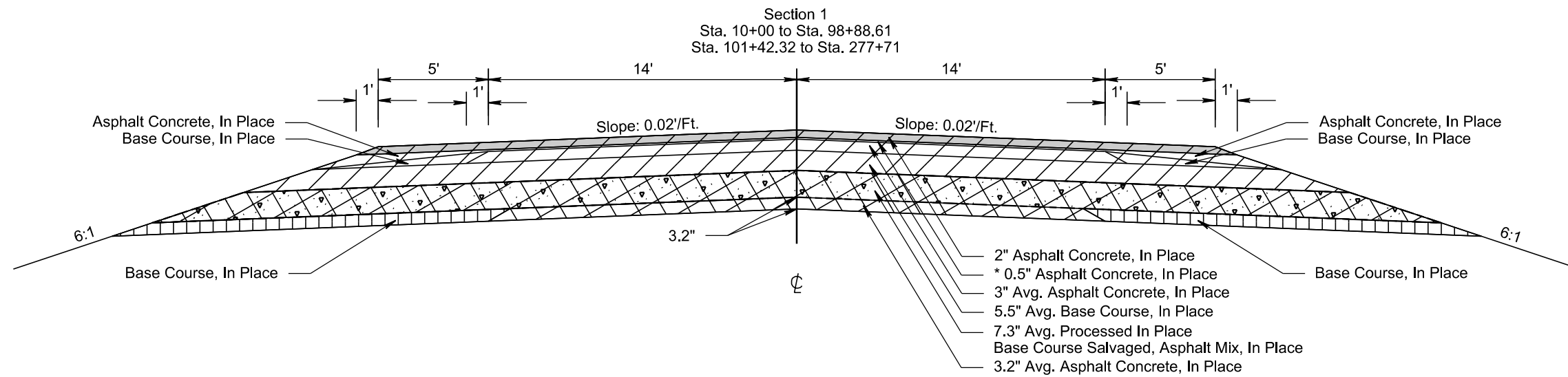
IN PLACE TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F6	F12

Plotting Date: 10/24/2024

-  Cold Milling Asphalt Concrete (9,000 tons)
-  Salvage & Stockpile Asphalt Mix and Granular Base Material (Quantity in Section B)
-  Remove Asphalt Concrete Pavement (Quantity in Section B)
-  Salvage & Stockpile Asphalt Mix Material for Blending to use as Base Course, Salvaged (Quantity in Section B)
-  Unclassified Excavation (Quantity in Section B)

Bridge:
Sta. 98+88.61 to Sta. 101+42.32



PLOT SCALE - 1+6.00001

PLOTTED FROM - TRPR15123

PLOT NAME - 6

FILE - ... \0808.TYPICAL SECTIONS.DGN

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT NH 0212(206)313	SHEET F7	TOTAL SHEETS F12
-----------------------	----------------------------	-------------	---------------------

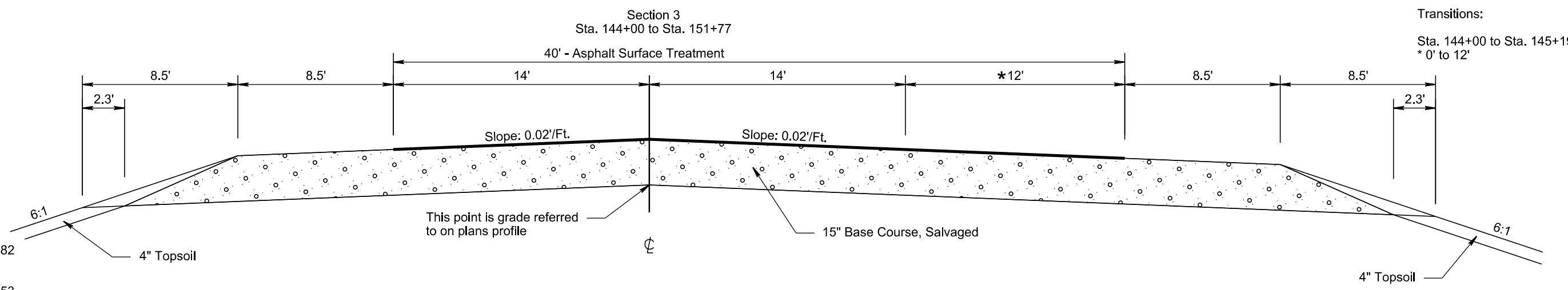
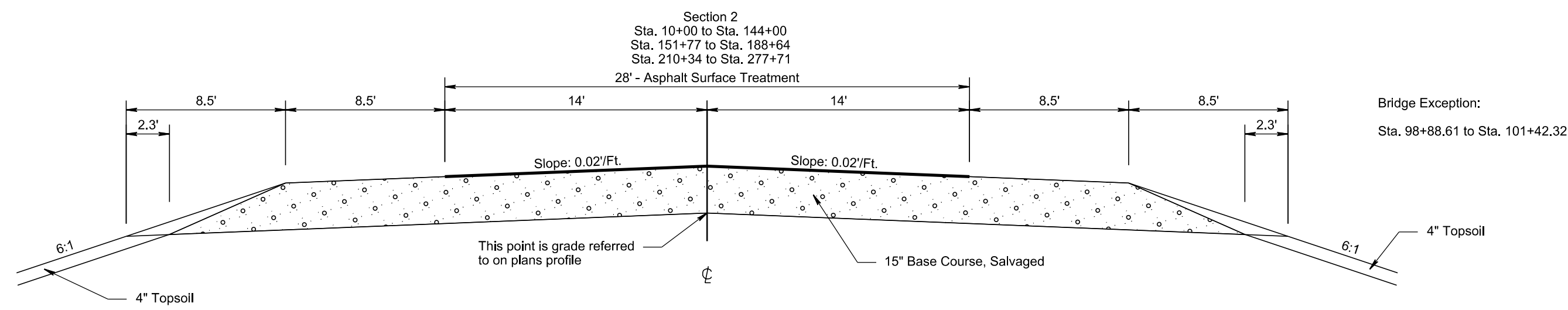
Plotting Date: 10/24/2024

PLOT SCALE - 1+6.00001

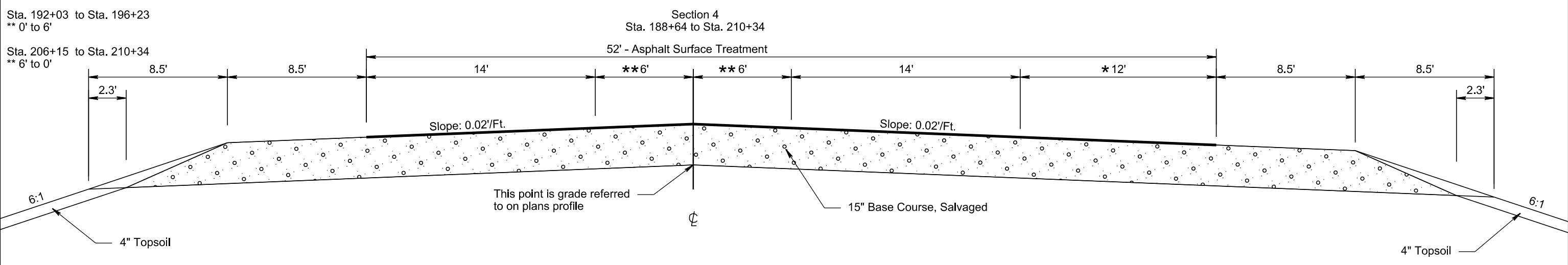
PLOT NAME - 7

FILE - ... \0808.TYPICAL SECTIONS.DGN

PLOTTED FROM - TRPR15123



- Transitions:
- Sta. 188+64 to Sta. 189+82
* 0' to 12'
 - Sta. 189+82 to Sta. 198+53
* 12' to 24'
 - Sta. 198+86 to Sta. 210+34
* 0'
 - Sta. 188+64 to Sta. 192+03
** 0'
 - Sta. 192+03 to Sta. 196+23
** 0' to 6'
 - Sta. 206+15 to Sta. 210+34
** 6' to 0'



TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F8	F12

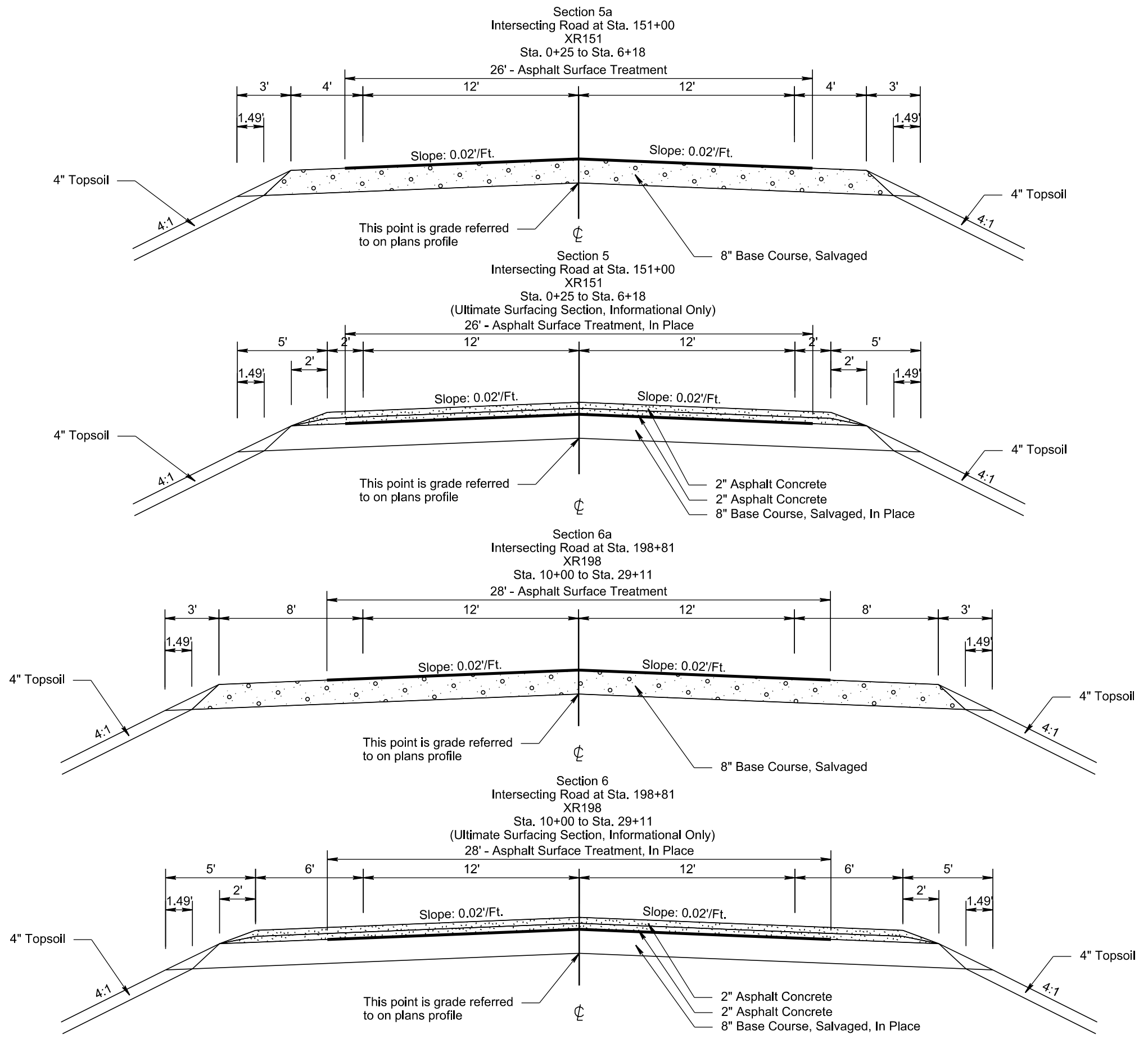
Plotting Date: 10/24/2024

PLOT SCALE - 1+6.00001

PLOT NAME - 8

FILE - ... \0808.TYPICAL SECTIONS.DGN

PLOTTED FROM - TRPR15123

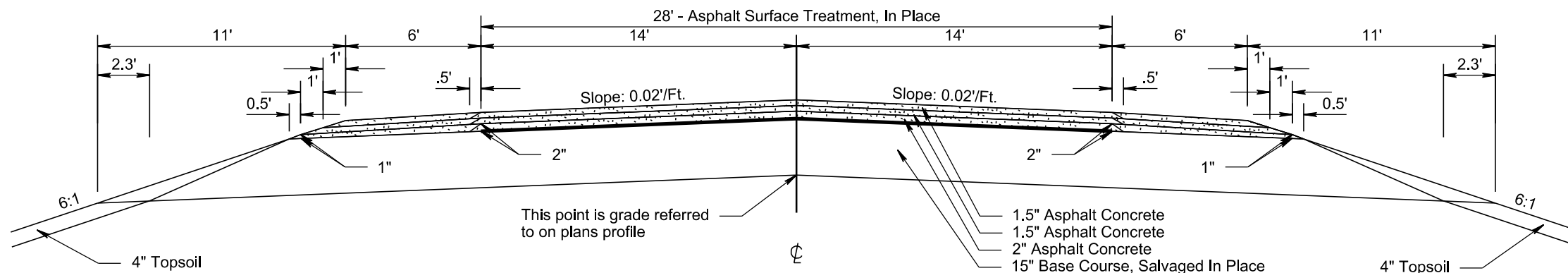


TYPICAL SURFACING SECTIONS

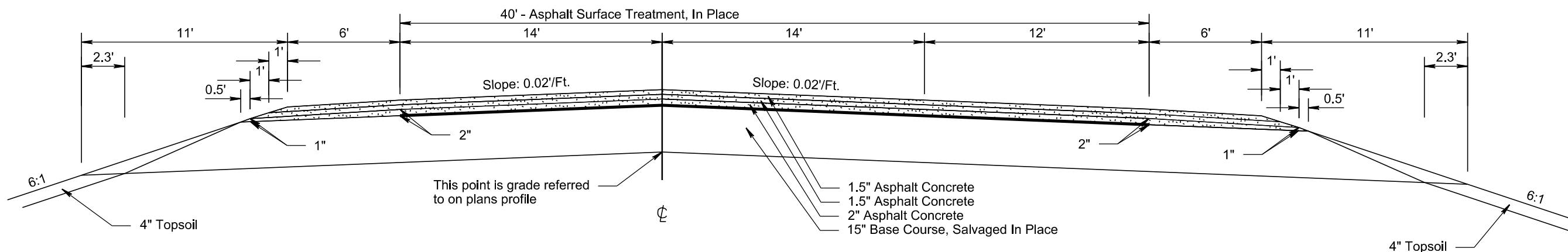
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F9	F12

Plotting Date: 10/24/2024

Section 7
 Sta. 10+00 to Sta. 144+00
 Sta. 151+77 to Sta. 188+64
 Sta. 210+34 to Sta. 277+71
 (Ultimate Surfacing Section, Informational Only)



Section 8
 Sta. 144+00 to Sta. 151+77
 (Ultimate Surfacing Section, Informational Only)



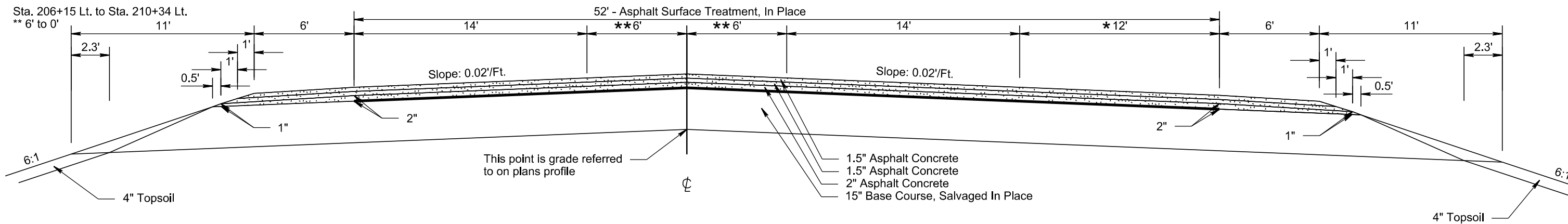
Transitions:

- Sta. 184+64 to Sta. 188+64
* 0'
- Sta. 188+64 to Sta. 189+81
* 0' to 20'
- Sta. 189+82 to Sta. 198+53
* 12' to 24'
- Sta. 192+03 Lt. to Sta. 196+23 Lt.
** 0' to 6'
- Sta. 206+15 Lt. to Sta. 210+34 Lt.
** 6' to 0'

Transitions

- Sta. 192+03 Rt. to Sta. 196+23 Rt.
** 0' to 6'
- Sta. 206+15 Rt. to Sta. 210+34 Rt.
** 6' to 0'

Section 9
 Sta. 188+64 to Sta. 210+34
 (Ultimate Surfacing Section, Informational Only)



PLOT SCALE - 1+6.00001

PLOTTED FROM - TRPR15123

PLOT NAME - 9

FILE - ... \0808.TYPICAL SECTIONS.DGN

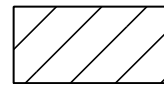
GUARDRAIL SURFACING

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0212(206)313	F10	F12

Plotting Date: 10/24/2024

Scale 1 Inch = 40 Feet
Sheet 1 of 1

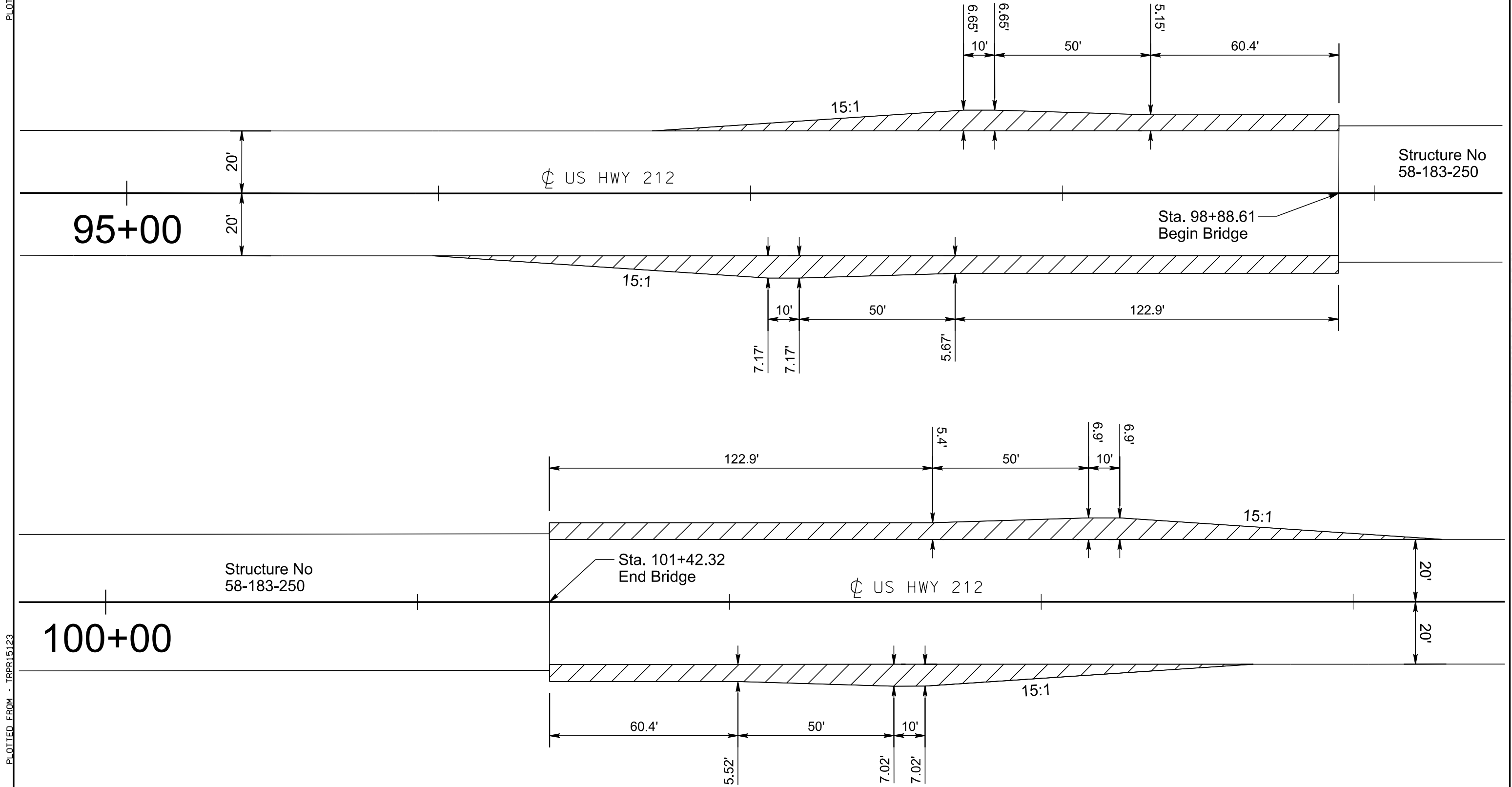
Structure No 58-183-250

 Variable depth (15" - 20") Base Course, Salvaged

PLOT SCALE - 1:30.0391

PLOT NAME - 10

FILE - ... \0808_GUARDRAIL_EMBANKMENT.DGN



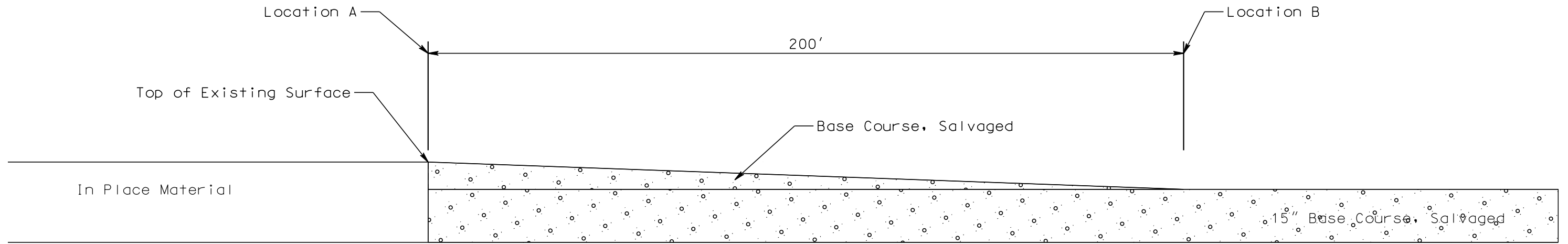
PLOTTED FROM - IRP15123

DETAILS FOR SURFACING TRANSITIONS

NOT TO SCALE

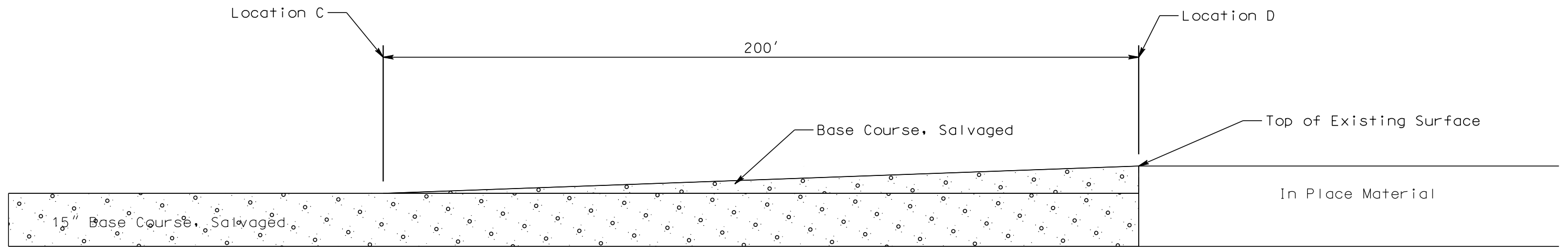
STATE OF SOUTH DAKOTA	PROJECT NH 0212(206)313	SHEET F11	TOTAL SHEETS F12
-----------------------	----------------------------	--------------	---------------------

Plotting Date: 10/24/2024



Location A	Location B	Depth Transition
Sta. 10+00	Sta. 12+00	5.0" to 0"
Sta. 101+42	Sta. 103+42	5.0" to 0"

Location C	Location D	Depth Transition
Sta. 96+88	Sta. 98+88	0" to 5.0"
Sta. 275+71	Sta. 277+71	0" to 5.0"



PLOT SCALE - 1:24

PLOT NAME - 11

FILE - ... \SURFACING TRANSITION DETAIL.DGN

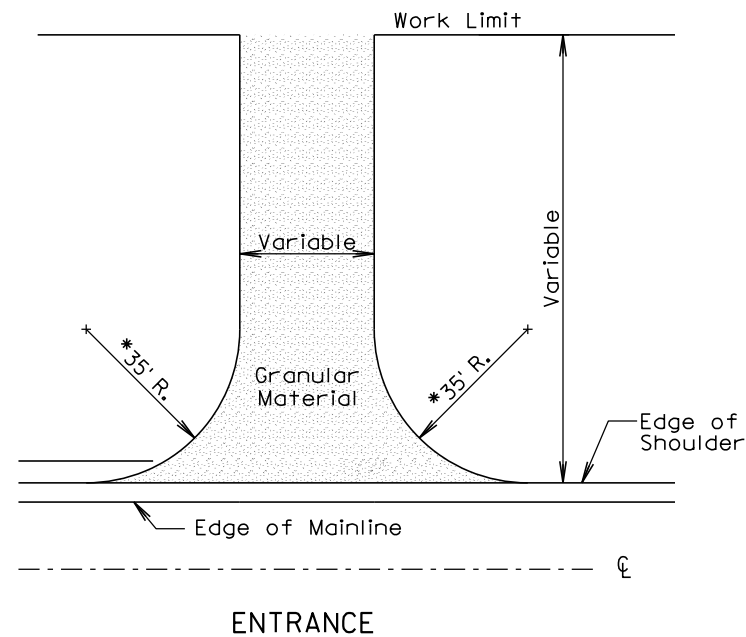
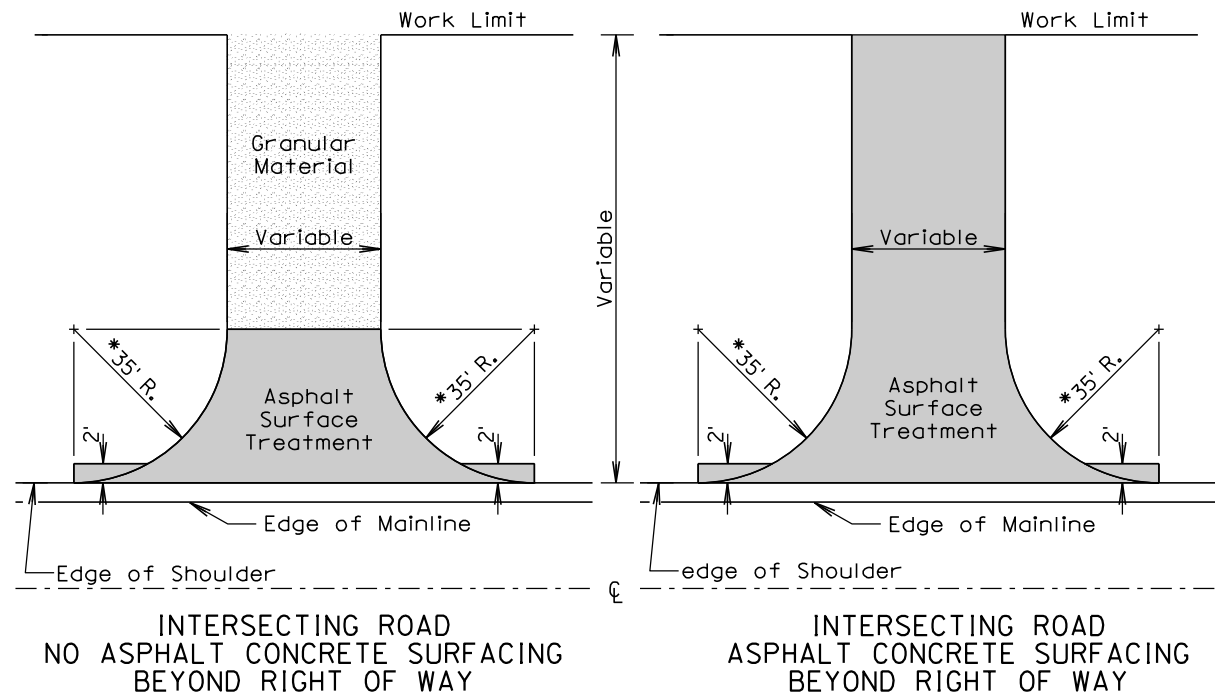
PLOTTED FROM - TRP15123

SPECIAL DETAILS

STATE OF SOUTH DAKOTA	PROJECT NH 0212(206)313	SHEET F12	TOTAL SHEETS F12
-----------------------	----------------------------	--------------	---------------------

Plotting Date:
10/24/2024

INTERIM SURFACING OF INTERSECTING ROADS AND ENTRANCES



GENERAL NOTES:

The details shown are provided as a guide for surfacing. The precise construction limits for situations other than the standards shown will be determined by the Engineer during construction.

*35' Radius except as noted elsewhere in plans.

PLOT SCALE - 1:200

PLOTTED FROM - TRP15123

PLOT NAME - 12

FILE - ... \INT RDS AND ENTS SPECIAL DETAIL.DGN