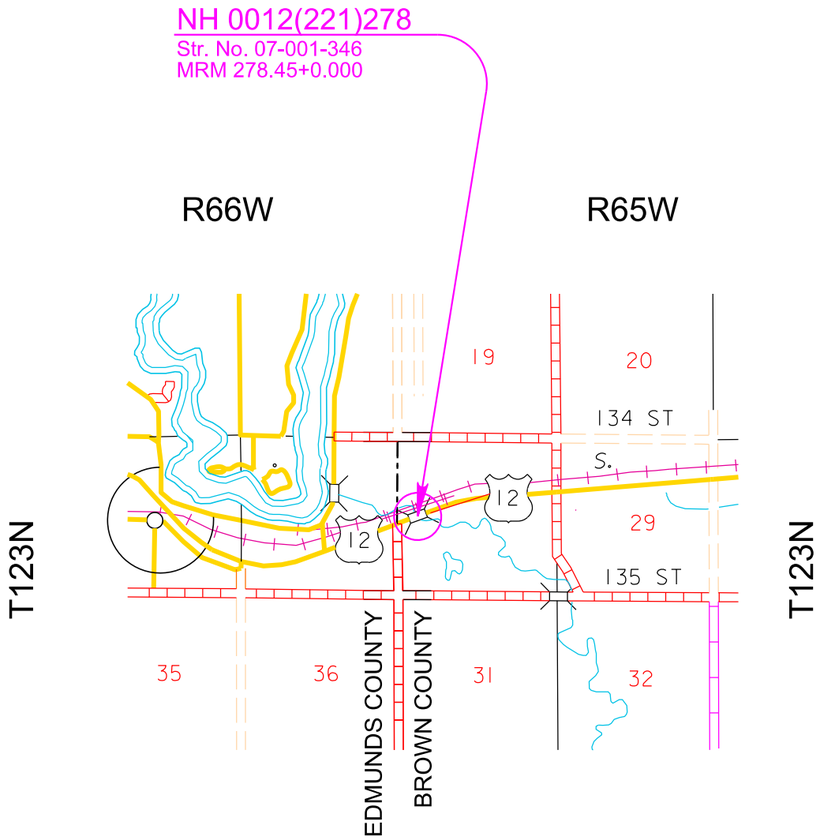
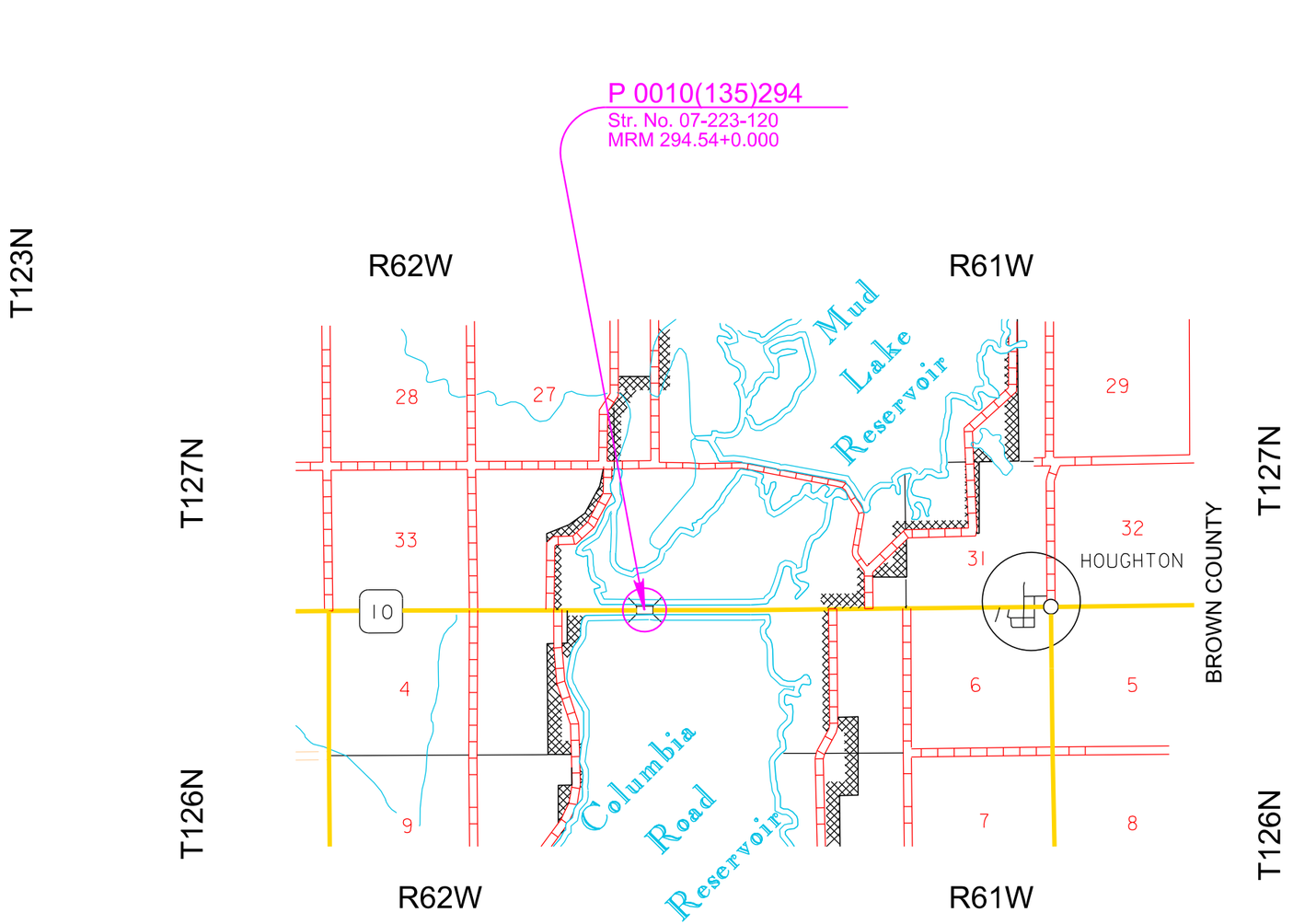
Section F: Surfacing Plans

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(221)278 P 0010(135)294	F1	F9

Plotting Date: 02/28/2024

INDEX OF SHEETS





SECTION F – ESTIMATE OF QUANTITIES – 05V1

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	55.2	MGal
260E1010	Base Course	4,613.6	Ton
320E0008	PG 64-34 Asphalt Binder	104.4	Ton
320E1060	Class G Asphalt Concrete	1,813.3	Ton
320E1200	Asphalt Concrete Composite	485.5	Ton
320E3000	Compaction Sample	6	Each
320E4000	Hydrated Lime	18.0	Ton
330E0010	MC-70 Asphalt for Prime	6.8	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	3.6	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.1	Ton
330E1000	Blotting Sand for Prime	12.8	Ton
330E2000	Sand for Flush Seal	9.4	Ton

SECTION F – ESTIMATE OF QUANTITIES – 03AL

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	54.8	MGal
260E1010	Base Course	4,580.0	Ton
320E0008	PG 64-34 Asphalt Binder	104.4	Ton
320E1060	Class G Asphalt Concrete	1,813.3	Ton
320E1200	Asphalt Concrete Composite	485.5	Ton
320E3000	Compaction Sample	6	Each
320E4000	Hydrated Lime	18.0	Ton
330E0010	MC-70 Asphalt for Prime	6.8	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	3.6	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.1	Ton
330E1000	Blotting Sand for Prime	12.8	Ton
330E2000	Sand for Flush Seal	9.4	Ton

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates 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, the depth/quantity may be varied to achieve the required elevation.

ASPHALT CONCRETE COMPOSITE

Section 324 will apply except that Class G Asphalt Concrete as specified elsewhere in the plans may be used as Asphalt Concrete Composite.

Plans specified locations for Asphalt Concrete Composite will be paid for at the contract unit price per ton for “Asphalt Concrete Composite” regardless of the class of asphalt concrete used at such locations.

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Base Course and Class E Asphalt Concrete 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 ±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.

CLASS G ASPHALT CONCRETE

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

Two random locations on each lift of asphalt will be selected by the Engineer for density determination. The cutting and trimming of the cores to the appropriate lift thickness will be performed by the Contractor as per SD 315. Density determination of the cores will be performed by the Engineer as per SD 315. The density of each lift of asphalt will be the average of the two cores. All costs associated with the compaction cores will be incidental to the contract unit price per each for “Compaction Sample”.

All other requirements for Class G will apply.

BLOTTING SAND FOR PRIME

Included in the Estimate of Quantities are 5 tons of Blotting Sand for Prime to be used on US12 where necessary for maintenance of traffic as directed by the Engineer. (Rate = 10 pounds per square yard)

RATES OF MATERIALS

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

US 12
Sta. 752+00 to 756+17.34
Sta. 758+05.34 to 763+50

BASE COURSE 354.94 tons.

Water for Granular Material at the rate of 4.26 M. Gallons.

MC-70 Asphalt for Prime at the Rate of 0.63 ton applied 48 feet wide (Rate = 0.30 gallon per square yard).

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

CLASS G ASPHALT CONCRETE – 1st Lift

Crushed Aggregate		49.97 Tons
PG 64-34 Asphalt Binder		3.08 Tons
	Total Mix	53.05 Tons
Hydrated Lime		0.53 Tons
Total Mix with Hydrated Lime		53.58 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.13 tons applied 47 feet wide (Rate = 0.06 gallon per square yard).

CLASS G ASPHALT CONCRETE – 2nd Lift

Crushed Aggregate		69.72 Tons
PG 64-34 Asphalt Binder		4.29 Tons
	Total Mix	74.01 Tons
Hydrated Lime		0.74 Tons
Total Mix with Hydrated Lime		74.75 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.13 tons applied 47 feet wide (Rate = 0.06 gallon per square yard).

CLASS G ASPHALT CONCRETE – 3rd Lift

Crushed Aggregate		49.97 Tons
PG 64-34 Asphalt Binder		3.08 Tons
	Total Mix	53.05 Tons
Hydrated Lime		0.53 Tons
Total Mix with Hydrated Lime		53.58 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.13 tons applied 47 feet wide (Rate = 0.06 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.11 ton applied 46 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 0.98 ton applied 22 feet wide (Rate = 8.0 lbs. per square yard).

SD 10
Sta. 12+26 to 20+07.07
Sta. 22+69.07 to 30+56

BASE COURSE 325.03 tons.

Water for Granular Material at the rate of 3.90 M. Gallons.

MC-70 Asphalt for Prime at the Rate of 0.58 ton applied 44 feet wide (Rate = 0.30 gallon per square yard).

Blotting Sand for Prime at the rate of 1.66 tons applied 24 feet wide (Rate = 10 lbs. per square yard).

CLASS G ASPHALT CONCRETE – 1st Lift

Crushed Aggregate		44.48 Tons
PG 64-34 Asphalt Binder		2.74 Tons
	Total Mix	47.22 Tons
Hydrated Lime		0.47 Tons
Total Mix with Hydrated Lime		47.69 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.12 tons applied 43 feet wide (Rate = 0.06 gallon per square yard).

CLASS G ASPHALT CONCRETE – 2nd Lift

Crushed Aggregate		45.16 Tons
PG 64-34 Asphalt Binder		2.78 Tons
	Total Mix	47.94 Tons
Hydrated Lime		0.48 Tons
Total Mix with Hydrated Lime		48.42 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.12 tons applied 43 feet wide (Rate = 0.06 gallon per square yard).

CLASS G ASPHALT CONCRETE – 3rd Lift

Crushed Aggregate		45.32 Tons
PG 64-34 Asphalt Binder		2.79 Tons
	Total Mix	48.11 Tons
Hydrated Lime		0.48 Tons
Total Mix with Hydrated Lime		48.59 Tons

The exact proportions of this material will be determined on construction.

SS-1h or CSS-1h Asphalt for Tack at the rate of 0.12 tons applied 43 feet wide (Rate = 0.06 gallon per square yard).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 0.10 ton applied 42 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 0.98 ton applied 22 feet wide (Rate = 8.0 lbs. per square yard).

TABLE OF ADDITIONAL QUANTITIES – 05V1

Location-Description	Water for Granular Material	Base Course	Asphalt Concrete Composite	CLASS G Asphalt Concrete	PG 64-34 Asphalt Binder	MC-70 Asphalt for Prime	Hydrated Lime	SS-1h or CSS-1h Asphalt for Tack	Asphalt for Flush Seal
	Mgal	Ton		Ton	Ton	Ton	Ton	Ton	Ton
Guardrail – Str. # 07-223-120									
West end – left side	1.3	109.6		13.8	0.8	0.2	0.1	--	--
West end – right side	1.6	136.8		17.2	1.0	0.2	0.2	--	--
East end – left side	1.6	137.0		17.2	1.0	0.2	0.2	--	--
East end – right side	1.5	121.0		15.2	0.9	0.2	0.2	--	--
Traffic Diversion	8.2	694.7	485.5						
TOTAL	14.2	1,199.1	485.5	63.4	3.7	0.8	0.7		

Application Rates: PG 64-34 Asphalt Binder at 5.8%
SS-1h or CSS-1h Asphalt for Tack rate = 0.06 gallon per square yard

TABLE OF ADDITIONAL QUANTITIES – 03AL

Location-Description	Water for Granular Material	Base Course	CLASS G Asphalt Concrete (1st / 2nd / 3rd Lift)	PG 64-34 Asphalt Binder (1st / 2nd / 3rd Lift)	MC-70 Asphalt for Prime	Blotting Sand for Prime	Hydrated Lime (1st / 2nd / 3rd Lift)	SS-1h or CSS-1h Asphalt for Tack (1st / 2nd / 3rd Lift)	Asphalt for Flush Seal	Sand for Flush Seal
	Mgal	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton
Mainline – SD 10										
Sta. 12+26 to 12+76	2.0	162.5	22.9 / 21.7 / 23.1	1.3 / 1.2 / 1.3	0.3	0.7	0.2 / 0.2 / 0.2	0.1 / 0.1 / 0.1	0.1	0.5
Sta. 30+06 to 30+56	2.0	162.5	22.9 / 21.7 / 23.1	1.3 / 1.2 / 1.3	0.3	0.7	0.2 / 0.2 / 0.2	0.1 / 0.1 / 0.1	0.1	0.5
Guardrail – Str. # 07-223-120										
West end – left side	1.1	91.0	12.2	0.7	0.1		0.1	--	--	
West end – right side	1.1	91.0	12.2	0.7	0.1		0.1	--	--	
East end – left side	1.1	91.0	12.2	0.7	0.1		0.1	--	--	
East end – right side	1.1	91.0	12.2	0.7	0.1		0.1	--	--	
TOTAL	8.4	689.0	184.2	10.4	1.0	1.4	1.6	0.6	0.2	1.0

Application Rates: PG 64-34 Asphalt Binder at 5.8%
SS-1h or CSS-1h Asphalt for Tack rate = 0.06 gallon per square yard

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(221)278 P 0010(135)294	F5	F9

Plotting Date: 02/28/2024

SUMMARY OF CLASS G ASPHALT CONCRETE COMPACTION – PCN 05V1

Location	Compaction With Specified Density (1st / 2nd / 3rd Lift)	Compaction Without Specified Density
	Ton	Ton
Mainline – US 12		
Sta. 752+00 to 756+17.34	221.4 / 308.9 / 221.4	--
Sta. 758+05.34 to 763+50	288.9 / 403.1 / 288.9	--
Guardrail	--	63.4
TOTAL	1,732.6	63.4

SUMMARY OF CLASS G ASPHALT CONCRETE COMPACTION – PCN 03AL

Location	Compaction With Specified Density (1st / 2nd / 3rd Lift)	Compaction Without Specified Density
	Ton	Ton
Mainline – US 12		
Sta. 12+26 to 12+76	22.7 / 21.4 / 22.8	--
Sta. 12+76 to 20+07.07	345.2 / 350.5 / 351.7	--
Sta. 22+69.07 to 30+06	348.0 / 353.3 / 354.5	--
Sta. 30+06 to 30+56	22.7 / 21.4 / 22.8	--
Guardrail	--	48.0
TOTAL	2,237.0	48.0

Plot Scale - 1:200

Plotted From - TRPR15123

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TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(221)278 P 0010(135)294	F6	F9

Plotting Date: 02/28/2024
Revised: 28Feb24, LLR

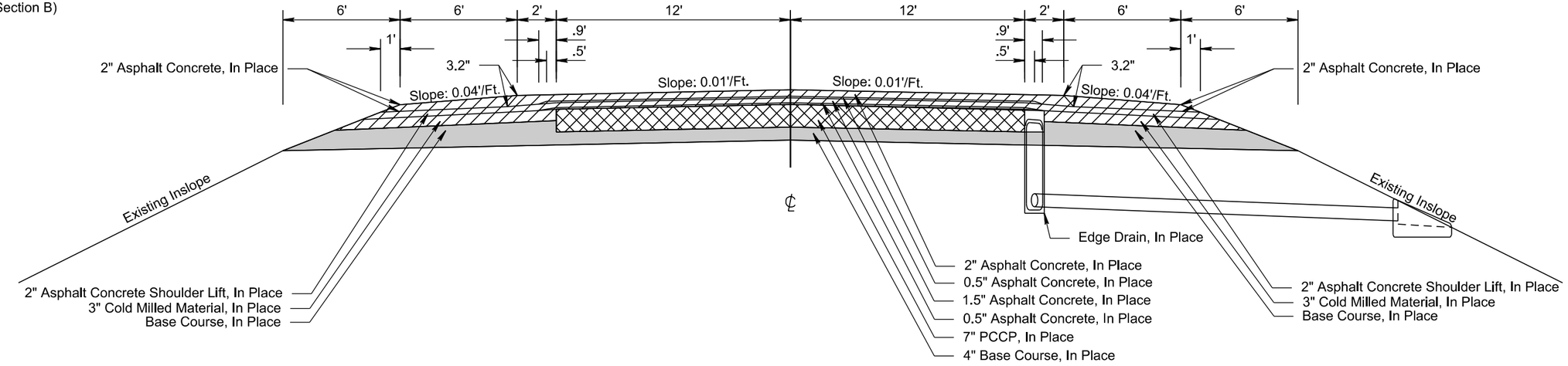
Remove Asphalt Concrete
(See Section B)

Remove PCC Pavement
(See Section B)

Unclassified Excavation
(See Section B)

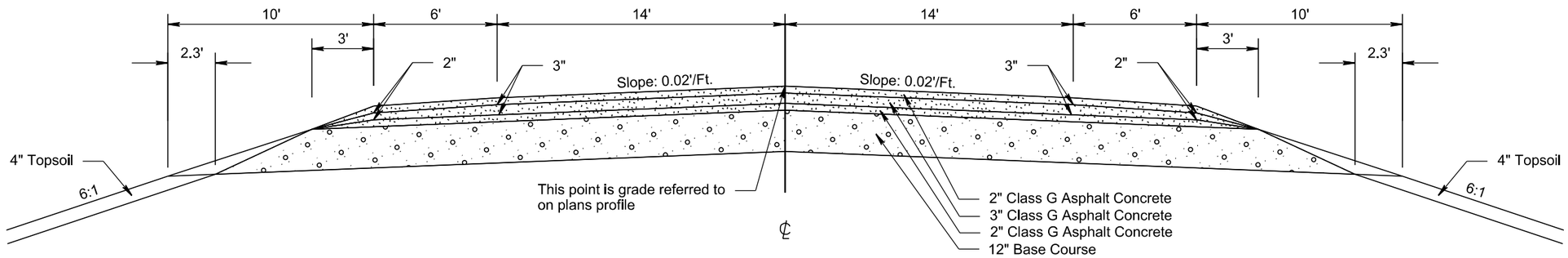
US 12
Str. No. 07-001-346

Sta. 752+00 to Sta. 756+17.34
Sta. 758+05.34 to Sta. 763+50

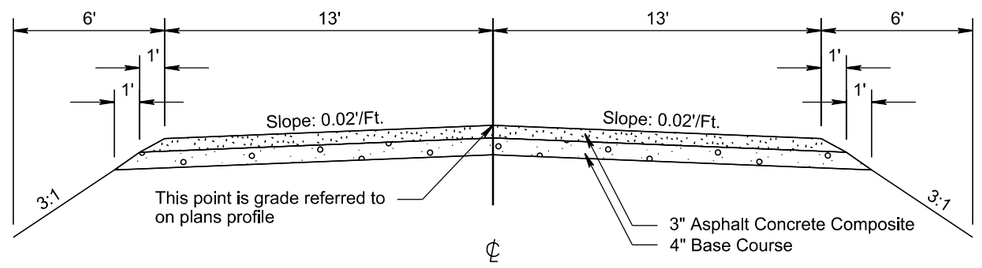


US 12
Str. No. 07-001-346

Sta. 752+00 to Sta. 756+17.34
Sta. 758+05.34 to Sta. 763+50



Traffic Diversion
Div757 - Sta. 752+47.96 to Sta. 762+20.16 - Mainline
(Sta. 0+00 to Sta. 10+21.65 - Diversion)



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PLOTTED FROM - TRPR15123
PLOT NAME - 6
FILE - ...\05V1_TYPICAL SECTIONS.DGN

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(221)278 P 0010(135)294	F7	F9

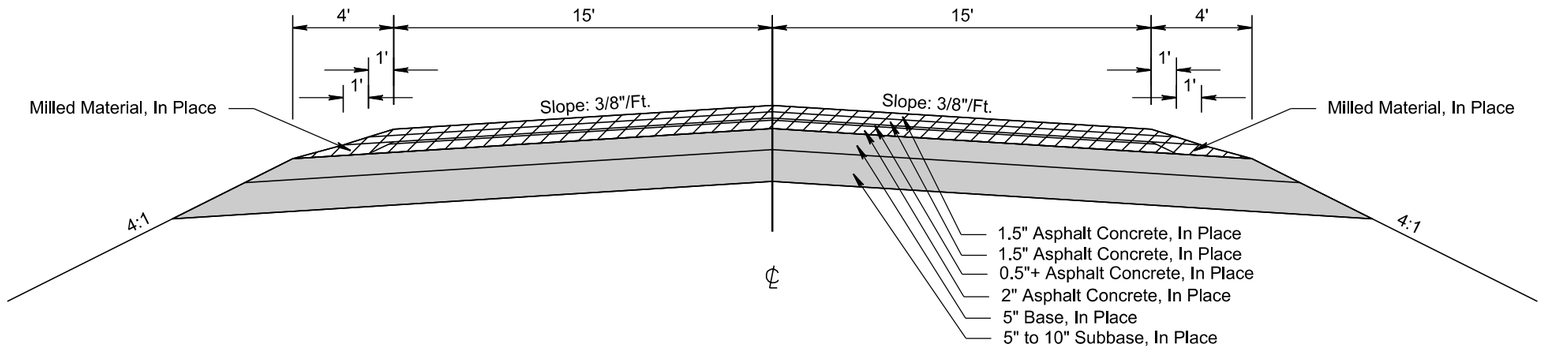
Plotting Date: 02/28/2024
Revised: 28Feb24, LLR

Remove Asphalt Concrete
(See Section B)

Unclassified Excavation
(See Section B)

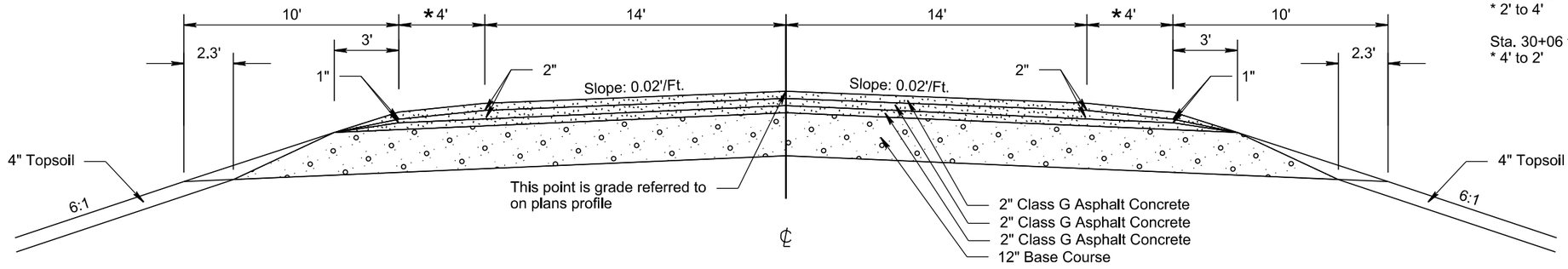
SD 10
Str. No. 07-223-120

Sta. 12+26 to Sta. 20+07.07
Sta. 22+69.07 to Sta. 30+56



SD 10
Str. No. 07-223-120

Sta. 12+26 to Sta. 20+07.07
Sta. 22+69.07 to Sta. 30+56



Transitions:

Sta. 12+26 to Sta. 12+76
* 2' to 4'

Sta. 30+06 to Sta. 30+56
* 4' to 2'

PLOT SCALE - 1:6.00001

PLOT NAME - 7

FILE ...\05V1_TYPICAL SECTIONS.DGN

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GUARDRAIL EMBANKMENT

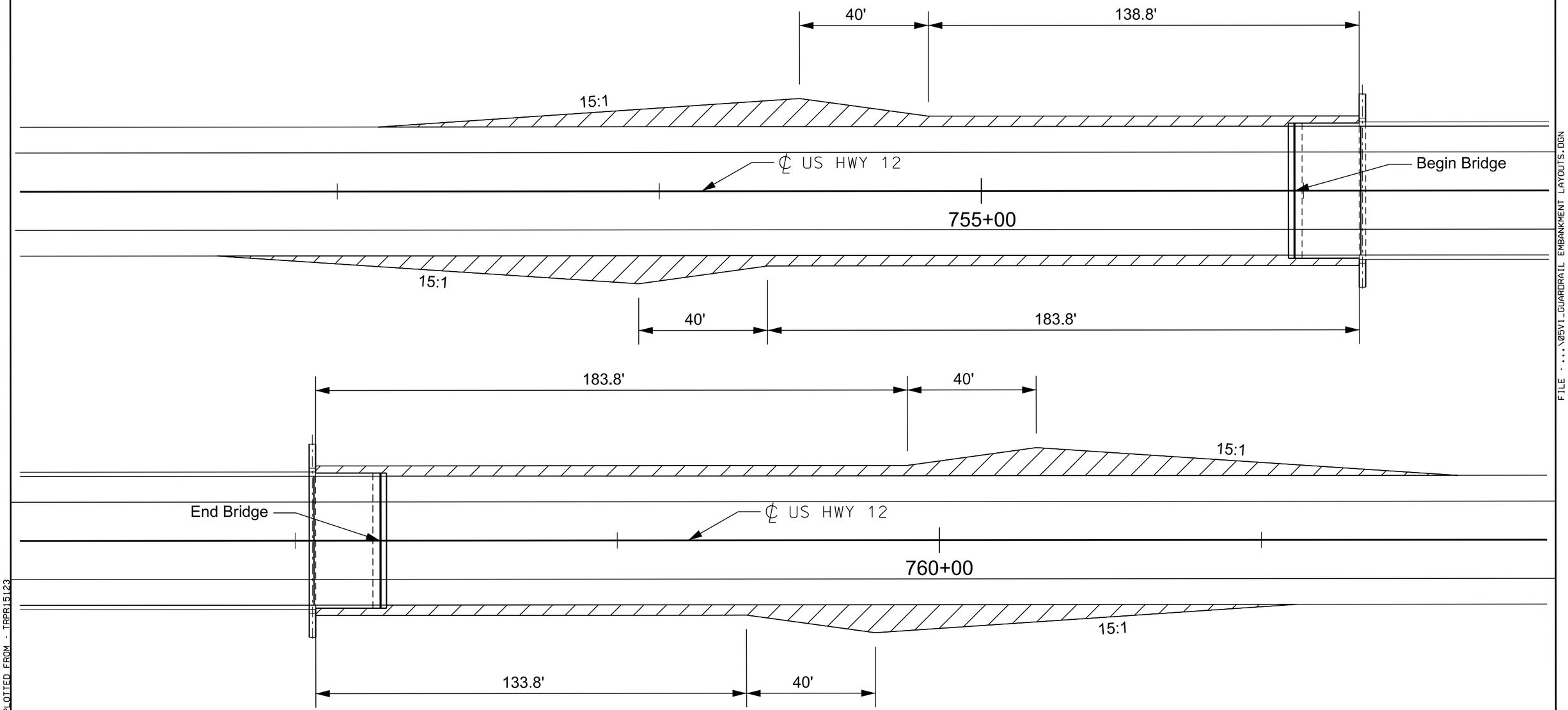
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(221)278 P 0010(135)294	F8	F9

Plotting Date: 02/28/2024

Scale 1 Inch = 40 Feet
Sheet 1 of 2 Sheets

2" Class G Asphalt Concrete &
17" Base Course

Str. No. 07-001-346



GUARDRAIL EMBANKMENT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(221)278 P 0010(135)294	F9	F9

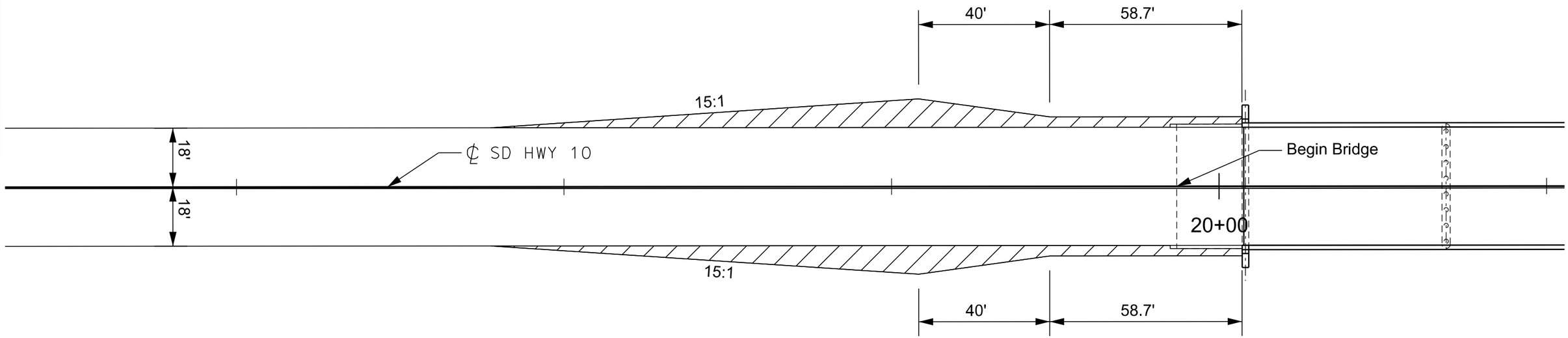
Plotting Date: 02/28/2024

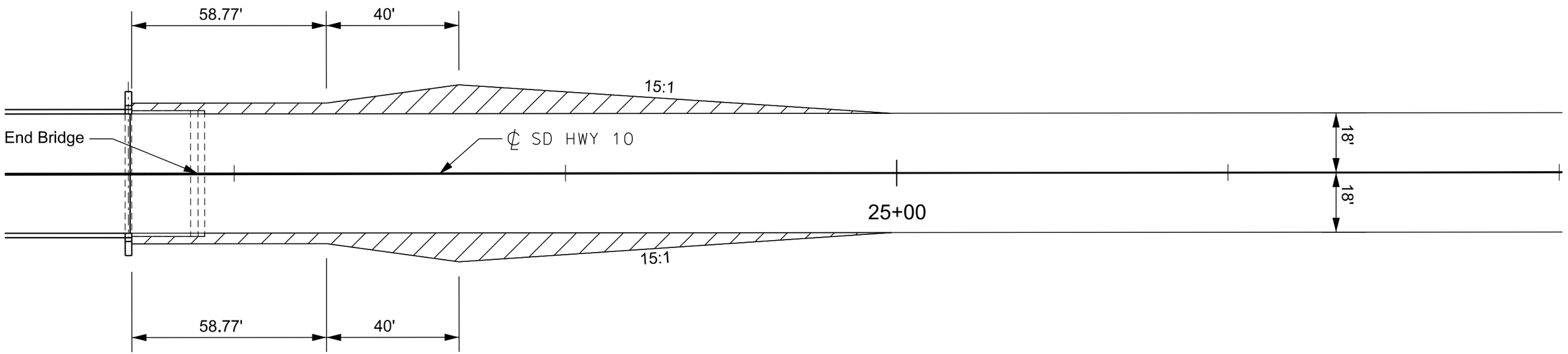
Revised: 28Feb24, LLR

Scale 1 Inch = 40 Feet
Sheet 2 of 2 Sheets

2" Class G Asphalt Concrete &
16" Base Course

Str. No. 07-223-120





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PLOT NAME - 9

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