PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A01

TN ERFO FS CHRKE804 2020-2(1)

KEY MAP
STATE OF TENNESSEE

70 0 70
SCALE IN MILES

Schedule	Description	Station to Station	Length (miles)	Lane Miles
A	Briar Creek Road (FS 188)	2+20 to 249+61	4.70	9.40
B	Paint Mountain Road (FS 54)	0+61.66 to 1+95.32	0.07	0.14
		0+91 to 1+25	0.01	0.02
C	Flatwoods Road (FS 57)	0+01.02 to 3+46.60	0.03	0.06

U.S. DEPARTMENT OF AGRICULTURE
U.S. FOREST SERVICE

CHEROKEE NATIONAL FOREST

PLANS FOR PROPOSED PROJECT

TN ERFO FS CHRKE804 2020-2(1)

REPAIR OF VARIOUS DAMAGED SITES ON PAINT MOUNTAIN ROAD (FS 54), BRIAR CREEK ROAD (FS 188), AND FLATWOODS ROAD (FS 87)
UNAKA AND WATAUGA RANGER DISTRICTS
GREENE, SULLIVAN, AND WASHINGTON COUNTIES, TN

INDEX TO SHEETS

SHEET NO	DESCRIPTION
A01	Title Sheet
A02 - A03	Symbols and Abbreviations
A04 - A06	Vicinity Map
A07	Location Map
A08 - A10	Survey Control Points
A11 - A15	Horizontal Alignment Information
B01 - B03	Typical Sections
C01 - C03	Tabulation of Quantities
C04 - C11	Summaries and Schedules
C12	Roadway Schedule
C13 - C15	Drainage Schedule
C16	Drainage Details
D01 - D14	Plans and Profiles
M01	Erosion and Sediment Control Narrative
M02 - M15	Erosion and Sediment Control Plan
N01 - N03	Temporary Traffic Control
S01 - S10	Standards and Details
T01 - T28	Cross Sections

DESCRIPTION OF PROJECT

IMPROVEMENT: Grading, roadway resurfacing, drain dip construction, replacement of drainage culverts, drainage culvert cleaning, ditch reconditioning, slope stabilization repairs, and other miscellaneous work.

PROJECT LENGTH: 4.81 miles

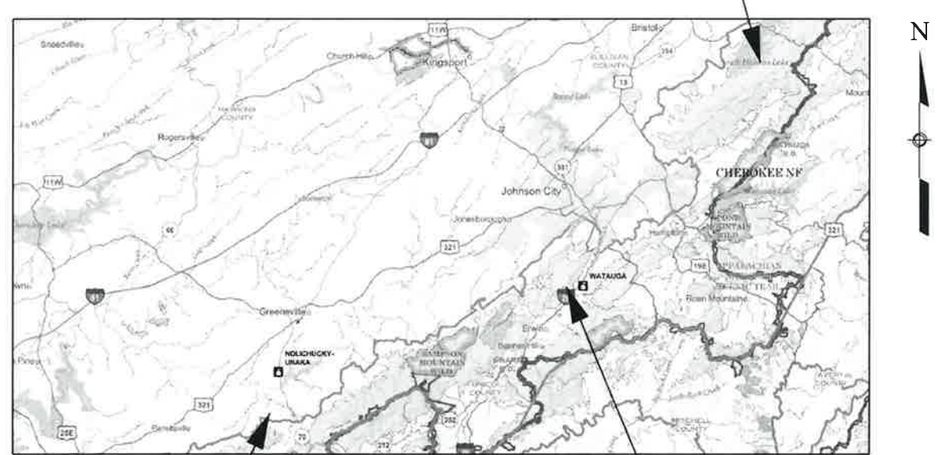
ROAD:	WIDTH	SURFACE	BASE	SUBGRADE
Paint Mountain Road (FS 54) (Existing) Greene County	14'-18'	Aggregate	N/A	N/A
Briar Creek Road (FS 188) Washington County (Existing)	14'-18'	Aggregate	N/A	N/A
Flatwoods Road (FS 87) Sullivan County (Existing)	18'	Aggregate	N/A	N/A

BRIDGE: N/A

DESIGN DESIGNATION:	FS 54	FS 188	FS 87
ADT (2011)	N/A	<400	N/A
ADT (2031)	N/A	<400	N/A
DHV	N/A	N/A	N/A
D	N/A	N/A	N/A
%Truck	N/A	N/A	N/A
V (MPH)	N/A	10	15
C/A	N/A	N/A	N/A
e(max)	N/A	N/A	N/A

SPECIFICATIONS:

"Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects", FP-24.



0 20 40
SCALE IN MILES

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REGISTERED ENGINEER
4/13/20
AGRICULTURE
COMMERCE
No. 129479
STATE OF TENNESSEE

Stantec

PLANS PREPARED BY
STANTEC CONSULTING SERVICES, LLC

PLANS PREPARED FOR
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
ASHBURN, VIRGINIA
FEBRUARY, 2026

DISASTER NOS. TN2020-1-FS AND TN2020-2-FS

Project Manager	Highway Design Manager	Lead Designer
Dan Weston	Rachel Wright	Stantec

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Δ	total central angle
Δc	curve central angle
Ø	diameter
θs	spiral central angle
abut.	abutment
ACP	asphalt concrete pavement
ADT	average daily traffic
Agg	aggregate
AH	ahead
AMD	amendment
appr.	approach
ASC	aggregate surface course
Asph	asphalt
BK	back
BL	baseline
bldg.	building
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
BW	broken white
cc or c. to c.	center to center
CL	centerline
CMP	corrugated metal pipe
col.	column
conc.	concrete
conn.	connection
constr. jt.	construction joint
cont.	continuous
CS	curve to spiral
ctrs.	centers
D	directional distribution factor
DHV	design hourly volume
dia.	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
drwg(s).	drawing(s)
DSY	double solid yellow
DW or DTW	dotted white
DY or DTY	dotted yellow
E	east
e	superelevation rate
elec.	electric
elev.	elevation
emb.	embankment
EOP	edge of pavement
EOS	edge of shoulder
EOT	edge of travel way
EQ or eq.	equation
ER	edge of road
ESAL	equivalent single axle load
EW	edge of water
ex. or exist.	existing
exc.	excavation
exp. jt.	expansion joint
fin.	finish
flg.	flange
ftg.	footing
ga.	gage (gauge)
GAB	graded aggregate base
galv.	galvanized
gnd or grnd	ground
hdwl.	headwall
hex.	hexagon
HLSD	headlight sight distance
HW	high water
ID	inside diameter
INF	infinite
inv.	invert
jt.	joint
K	K-Value
L	length of curve
lam.	lamination
lat.	latitude
LOD	Limits of Disturbance
long.	longitudinal
LPSM	lump sum
Ls	length of spiral
lt. or LT	left
LW	low water
ML	main line
MOD	modification
MP	mile post
max.	maximum
min.	minimum
mon.	monument
N	north
N/A	not applicable
NC	normal crown
NMSA	nominal maximum size aggregate
No.	number
o. c.	on center
ohwm	ordinary high water mark
o. to o.	out to out
OD	outside diameter
OG	original ground
PC	point of curve
PCC	point of compound curve
PCS	point of curve to spiral
PGL	profile grade line
PI	point of intersection
pl.	plate
POB	point of beginning
POC	point on curve
POE	point of ending
POS	point on spiral
POT	point on tangent
prop.	proposed
PS	point of tangent to spiral
PSC	point of spiral to curve
PST	point of spiral to tangent
PT	point of tangent
pvmt.	pavement
R	radius
R.	range
R/W	right-of-way
rdwy.	roadway
RECP	rolled erosion control product
reinf.	reinforcement
reqd.	required
rt. or RT	right
rte.	route
S	south
SADT	seasonal average daily traffic
SC	point of spiral to curve
sec.	section
shldr.	shoulder
spa.	spacing, spaces or spaced
sqft	square foot
sqyd	square yard
SRS	point of spiral to reverse spiral
SS	point of spiral to spiral (no curve)
SSD	stopping sight distance
ST	point of spiral to tangent
Sta.	station
std.	standard
stgr.	stringer
stiff.	stiffener
struc.	structural
STS	point of spiral to tangent spiral
SW or SDW	solid white
sym.	symmetrical
S/W	sidewalk
T	tangent distance
T.	township
TBM	temporary bench mark
thd.	thread
traf.	traffic
TS	point of tangent to spiral
Ts	tangent distance (spiraled curve)
typ.	typical
V	design speed
VC	vertical curve
var.	varies
vph	vehicles per hour
VPI	vertical point of intersection
W	west

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A02

Control Point (Terrestrial and GPS); Jump Hub — RBAR 3000; JH

National Boundary

State Boundary

County Boundary

City Boundary

Township or Range Line

Section Line

Section Corner (Found, Projected) — 36 31 1 6; 36 31 1 6

¼ Section Line

¼ Section Corner (Found, Projected) — 15 22; 15 22

1/16 Section Line

1/16 Section Corner (Found, Projected) — 1/16 SEC.; 1/16 SEC.

Property Line w/Found Property Corner — P/L; P/L

Parcel Number — 00000

National Park Boundary — NP; NP

National Forest Boundary

National Wildlife Refuge Boundary — NWR; NWR; NWR; NWR

BLM Lands Boundary

Indian Reservation Boundary

Existing Roadway (Road, Paved, Gravel)

Railroad

Trail

Intermittent Drainage or Small Creek

Large Creek or River

Lake, Pond or Reservoir

Spring or Seep

Treeline; Individual Trees

Material Source; Bore Hole; Test Pit — BH; TP

Spot Elevation; Coordinate Grid Tick — EL. 0.00; N 0; E 1

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

SYMBOLS AND ABBREVIATIONS

Sheet 1 of 2

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22 September 2025 3:07 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A03

North Arrow N

		EXISTING	PROPOSED
Slope Stake Limits	*Top of Cut*		
	Toe of Fill		
	Transition		
Fence			
Gate with Fence			
Cattleguard			
Guardrail			
Concrete Barrier			
Retaining Wall			
Signs (single, double post; portable)			
Delineators			
Pipe Culvert (arrow shows flow)			
Pipe Culvert with End Section			
Pipe Culvert with Headwall			
Pipe Culvert with Drop Inlet			DI
Box Culvert			
Underdrain		UD	UD
Overhead/Above Ground Utilities		P P	P P
Underground Utilities		W W	W W

FM = force main, FO = fiber optic, G = gas, IRR = irrigation, O = oil,
P = power, SA = sanitary sewer, SD = storm drain, SS = storm sewer,
STEAM = steam, T = telephone, TV = CATV, W = water

Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)

Miscellaneous Utility Features
EM = electric meter, T = telephone pedestal, TV = CATV pedestal,
UP = transformer or junction box, WF = water fountain

Building		
Right-of-Way Line with Monument	r/w	R/W
Permanent Easement	P/E	P/E
Construction Easement		TCE
Riprap		

AREA PATTERN

Pavement Removal / Roadway Obliteration

Full Depth Pavement

Sidewalk Asphalt/Concrete

Mill and Overlay

Overlay

Silt Fence SF

Diversion Berm DB

Drainage Divide

Check Dam

Limits of Disturbance LOD LOD LOD

Fiber Roll or Wattle

PROJECT SPECIFIC SYMBOLS AND ABBREVIATIONS:

Outlet Fiber Roll Check Dam

Inlet Fiber Roll Check Dam

Pipe Culvert Identifier P-FS27-#
Identifies As Pipe
Road No.
Pipe Culvert #

NO.	DATE	BY	REVISIONS

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CHEROKEE NATIONAL FOREST

SYMBOLS AND ABBREVIATIONS

Sheet 2 of 2

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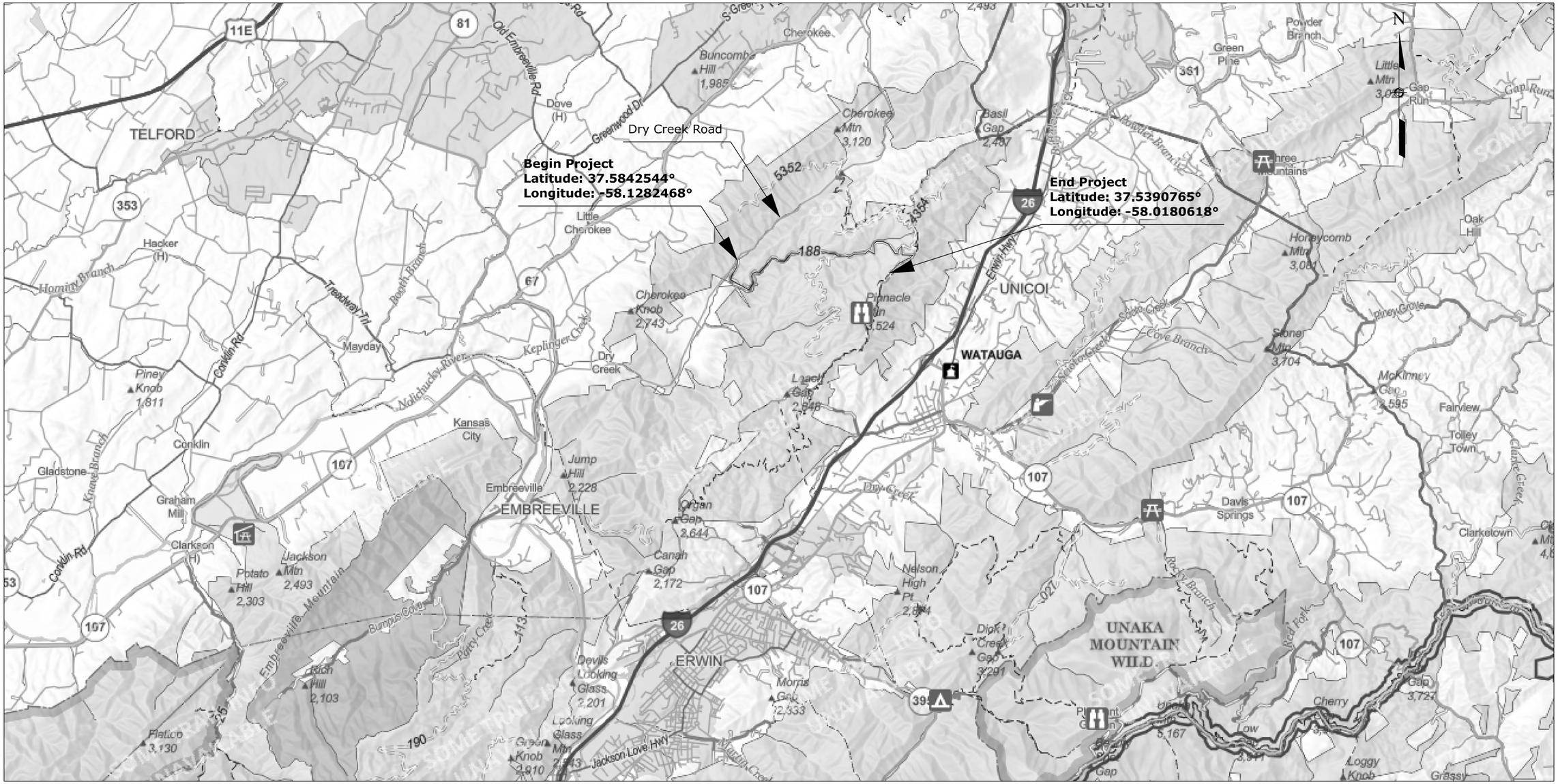
5 February 2026 2:09 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A04



Briar Creek Road
FS 188

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 3000 6000
Scale in Feet

CHEROKEE NATIONAL FOREST

VICINITY MAP

BRIAR CREEK ROAD
SCHEDULE A

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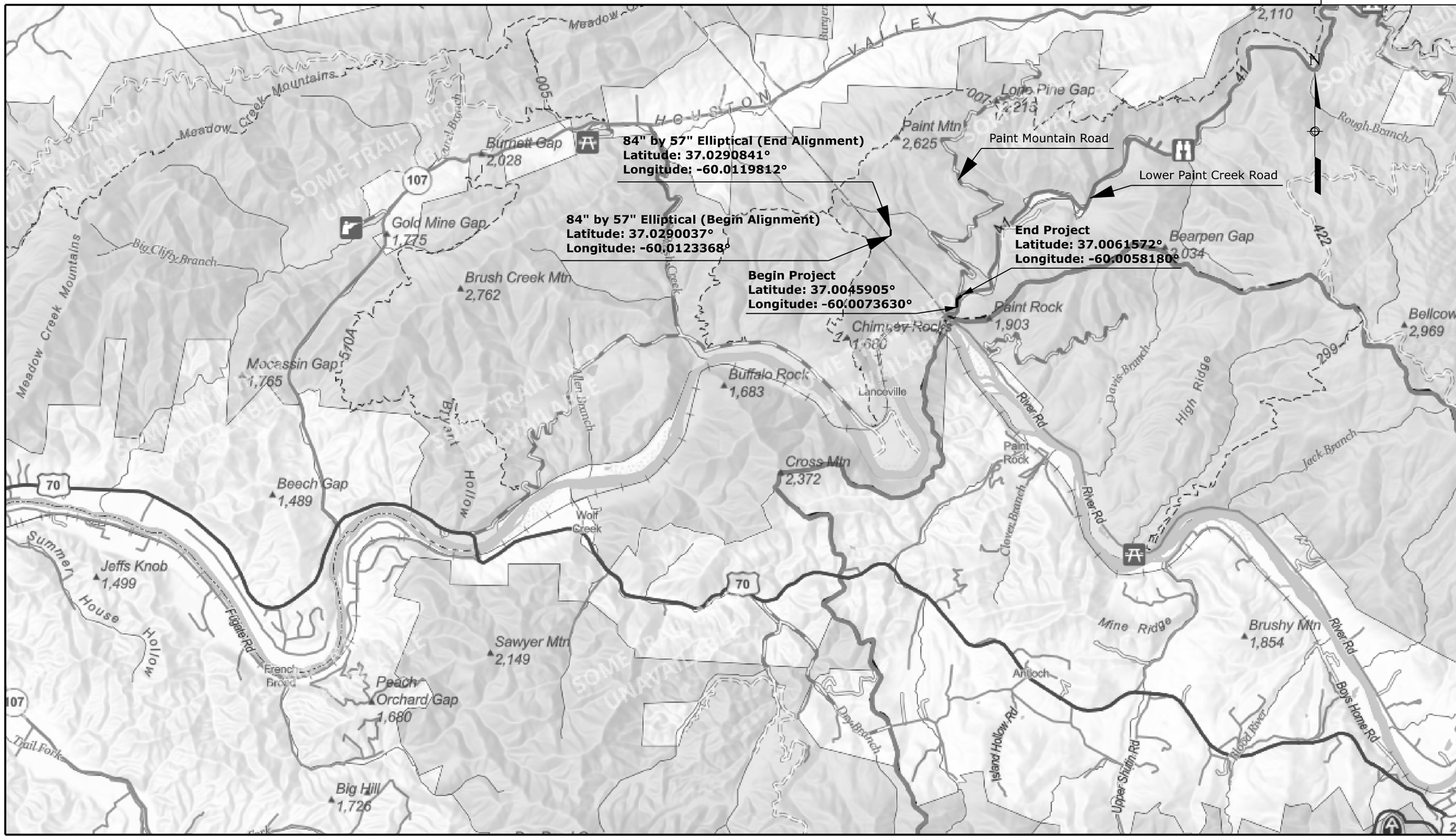
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A05



Paint Mountain Road
FS 54

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 2000 4000
Scale in Feet

CHEROKEE NATIONAL FOREST

VICINITY MAP

PAINT MOUNTAIN ROAD
SCHEDULE B

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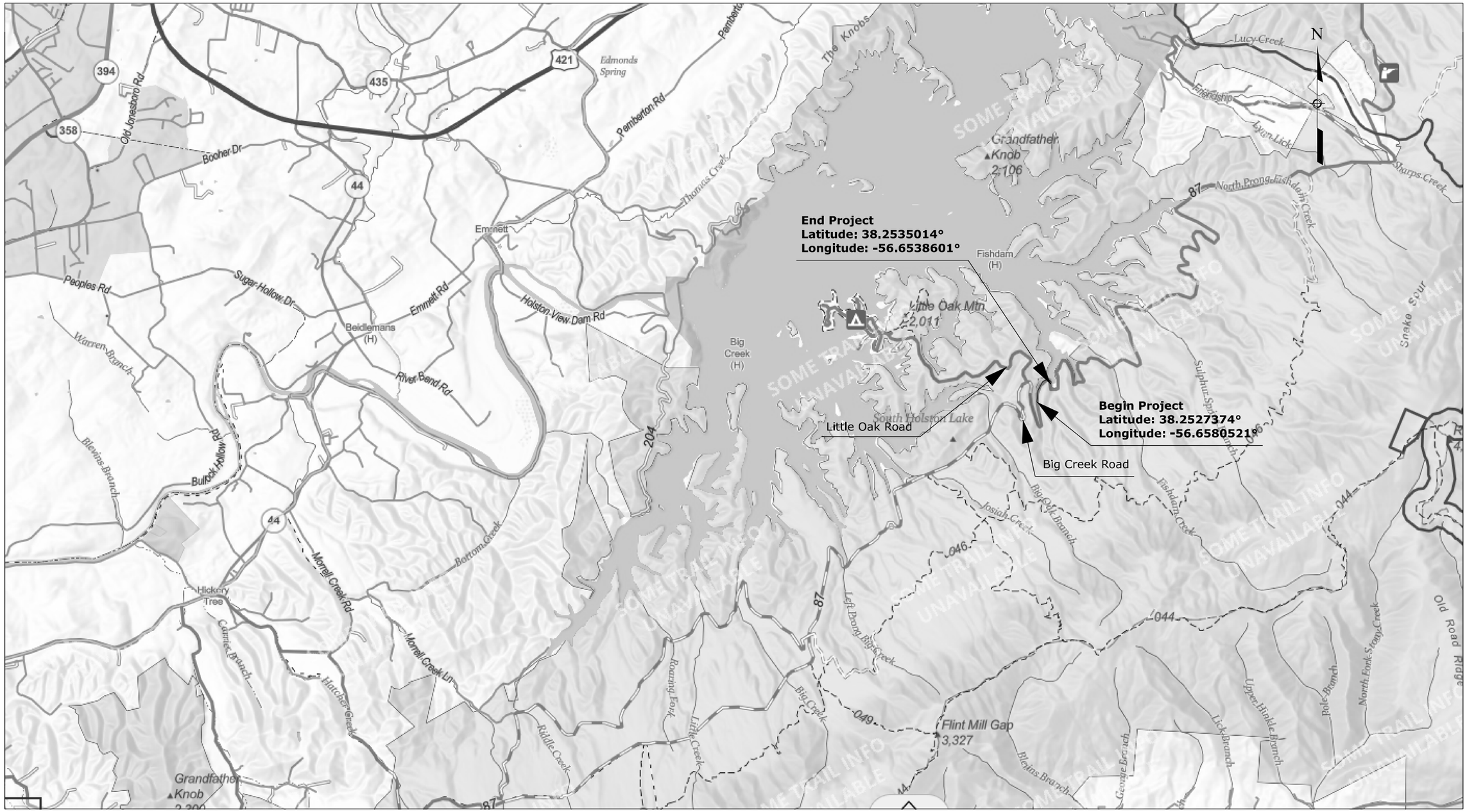
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A06



Flatwoods Road
FS 87

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 2000 4000
Scale in Feet

CHEROKEE NATIONAL FOREST

VICINITY MAP

FLATWOODS ROAD
SCHEDULE C

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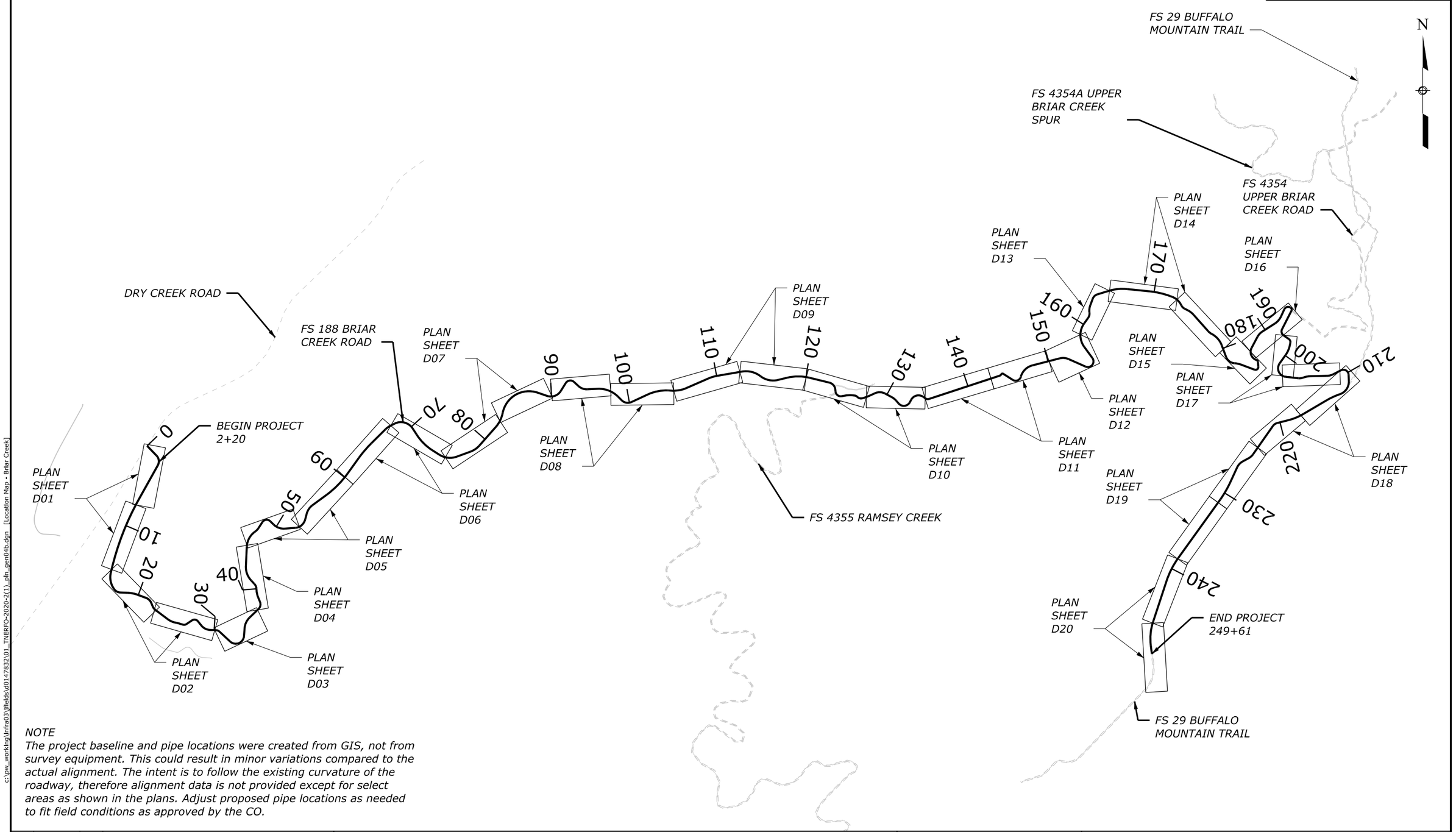
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A07



NOTE
The project baseline and pipe locations were created from GIS, not from survey equipment. This could result in minor variations compared to the actual alignment. The intent is to follow the existing curvature of the roadway, therefore alignment data is not provided except for select areas as shown in the plans. Adjust proposed pipe locations as needed to fit field conditions as approved by the CO.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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OFFICE OF FEDERAL LANDS HIGHWAY

0 500 1000
Scale in Feet

CHEROKEE NATIONAL FOREST

LOCATION MAP

BRIAR CREEK ROAD (FS 188)

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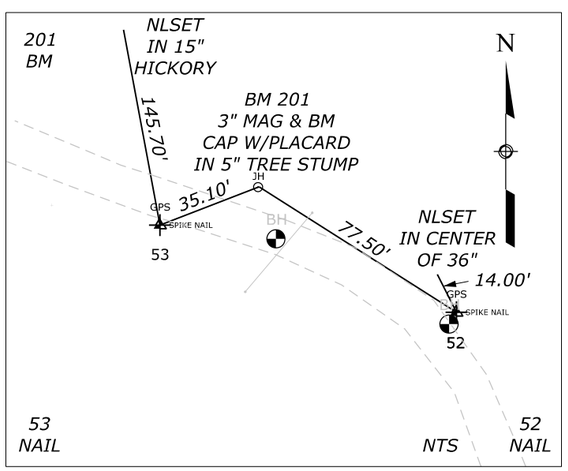
5 February 2026 2:21 PM

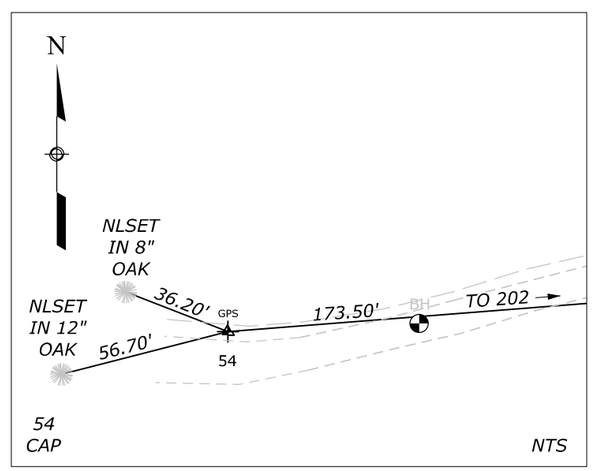
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A08

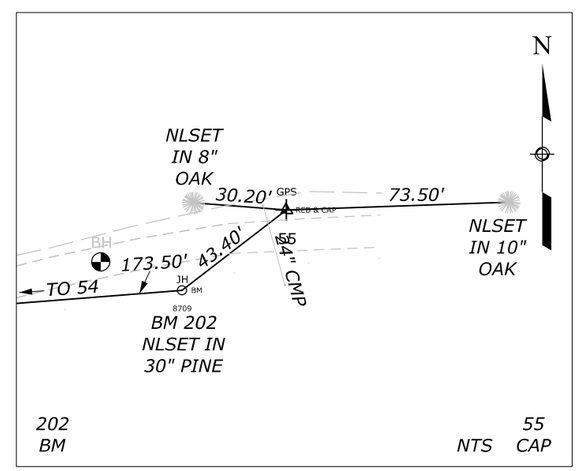
PROJECT DATUM
COORDINATE SYSTEM : US STATE PLANE 1983
ZONE : TENNESSEE 4100
HOR. DATUM : NAD 1983 (CONUS)
VERT. DATUM : NAVD 1988
GEOID MODEL : GEOID12B (CONUS)
SITE : BRIAR CREEK ROAD (FS 188) MP 599 & MP 633

COORDINATE LISTING

POINT NUMBER	NORTHING	EASTING	ELEVATION	REMARKS
52	707592.841	3029584.873	2075.037	NAIL
53	707621.606	3029487.037	2066.086	NAIL
54	709976.877	3036349.137	2424.859	CAP
55	710017.045	3036556.642	2417.336	CAP







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NOT TO SCALE

CHEROKEE NATIONAL FOREST

SURVEY CONTROL POINTS

BRIAR CREEK ROAD (FS 188)

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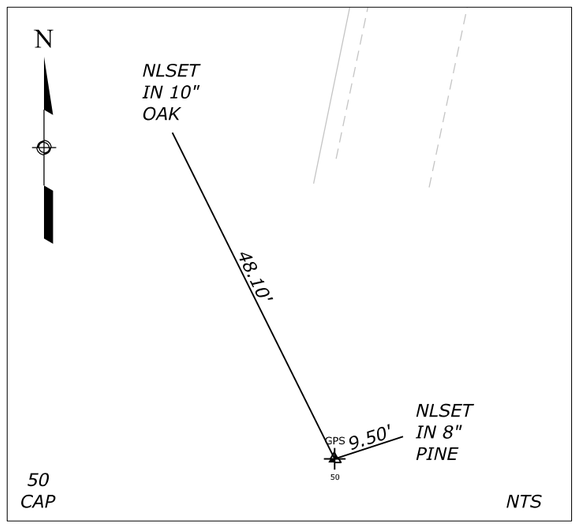
5 February 2026 2:23 PM

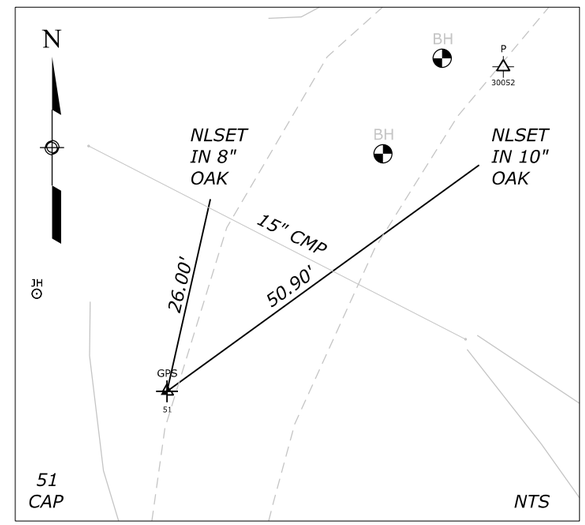
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A09

PROJECT DATUM
COORDINATE SYSTEM : US STATE PLANE 1983
ZONE : TENNESSEE 4100
HOR. DATUM : NAD 1983 (CONUS)
VERT. DATUM : NAVD 1988
GEOID MODEL : GEOID12B (CONUS)
SITE : PAINT MOUNTAIN ROAD (FS 54)

COORDINATE LISTING

POINT NUMBER	NORTHING	EASTING	ELEVATION	REMARKS
50	601827.362	2886765.890	1322.563	CAP
51	601978.589	2886786.067	1320.129	CAP





NO.	DATE	BY	REVISIONS

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NOT TO SCALE

CHEROKEE NATIONAL FOREST

SURVEY CONTROL POINTS

PAINT MOUNTAIN ROAD (FS 54)

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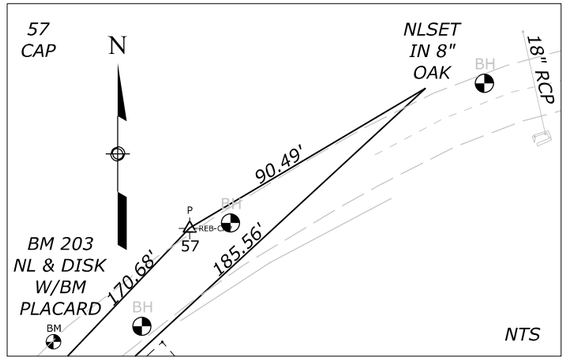
5 February 2026 2:23 PM

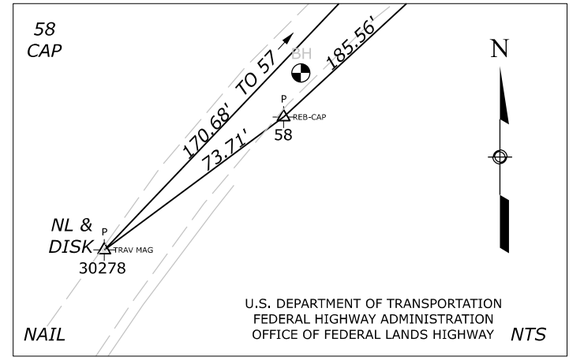
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A10

PROJECT DATUM
COORDINATE SYSTEM : US STATE PLANE 1983
ZONE : TENNESSEE 4100
HOR. DATUM : NAD 1983 (CONUS)
VERT. DATUM : NAVD 1988
GEOID MODEL : GEOID12B (CONUS)
SITE : FLATWOODS ROAD (FS 87) MP 659 & MP 660

COORDINATE LISTING

POINT NUMBER	NORTHING	EASTING	ELEVATION	REMARKS
57	817598.606	3132276.243	1774.849	CAP
58	817518.934	3132217.709	1776.447	CAP





NO.	DATE	BY	REVISIONS

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FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

NOT TO SCALE

CHEROKEE NATIONAL FOREST

SURVEY CONTROL POINTS

FLATWOODS ROAD (FS 87)

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5 February 2026 2:23 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A11

Flatwoods Road MP 659 & 660

Alignment Name: Flatwoods_BL

		Station	Northing	Easting
Element: Linear				
START	( )	0+00.00	817632.8000	3132466.8000
PC	( )	0+05.76	817635.8810	3132461.9327
	Tangential Direction:	N57°40'00"W		
	Tangential Length:	5.7605		
Element: Circular				
PC	( )	0+05.76	817635.8810	3132461.9327
HPI	( )	0+50.96	817660.0558	3132423.7411
CC	( )		817559.8354	3132413.7967
PT	( )	0+89.54	817643.8576	3132381.5436
	Radius:	90		
	Delta:	53°20'00.00" Left		
	Degree of Curvature (Arc):	63°39'43.12"		
	Length:	83.7758		
	Tangent:	45.1997		
	Chord:	80.7839		
	Middle Ordinate:	9.5731		
	External:	10.7125		
	Back Tangent Direction:	N57°40'00"W		
	Back Radial Direction:	N32°20'00"E		
	Chord Direction:	N84°20'00"W		
	Ahead Radial Direction:	N21°00'00"W		
	Ahead Tangent Direction:	S69°00'00"W		
Element: Linear				
PT	( )	0+89.54	817643.8576	3132381.5436
PC	( )	0+97.81	817640.8929	3132373.8201
	Tangential Direction:	S69°00'00"W		
	Tangential Length:	8.273		
Element: Circular				
PC	( )	0+97.81	817640.8929	3132373.8201
HPI	( )	2+33.24	817592.3574	3132247.3810
CC	( )		817220.7817	3132535.0857
PT	( )	3+60.92	817482.0980	3132168.7337
	Radius:	450		
	Delta:	33°30'00.00" Left		
	Degree of Curvature (Arc):	12°43'56.62"		
	Length:	263.1084		

Flatwoods Road MP 659 & 660 (Continued)

Alignment Name: Flatwoods_BL

		Station	Northing	Easting
	Tangent:	135.4346		
	Chord:	259.3766		
	Middle Ordinate:	19.0929		
	External:	19.9389		
	Back Tangent Direction:	S69°00'00"W		
	Back Radial Direction:	N21°00'00"W		
	Chord Direction:	S52°15'00"W		
	Ahead Radial Direction:	N54°30'00"W		
	Ahead Tangent Direction:	S35°30'00"W		
Element: Linear				
PT	( )	3+60.92	817482.0980	3132168.7337
END	( )	4+08.65	817443.2420	3132141.0180
	Tangential Direction:	S35°30'00"W		
	Tangential Length:	47.7278		

NO.	DATE	BY	REVISIONS

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CHEROKEE NATIONAL FOREST

HORIZONTAL ALIGNMENT INFORMATION

FLATWOODS ROAD (FS 87)

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5 February 2026 2:31 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A12

Briar Creek Road MP 633

Alignment Name: Briar Creek_633

		Station	Northing	Easting
Element: Circular				
PC	( )	116+00.00	709968.3705	3036285.8447
HPI	( )	116+47.23	709960.0841	3036332.3391
CC	( )		710189.7502	3036325.2996
PT	( )	116+93.10	709971.2025	3036378.2388
	Radius:	224.8681		
	Delta:	23°43'18.74" Left		
	Degree of Curvature (Arc):	25°28'47.04"		
	Length:	93.1009		
	Tangent:	47.227		
	Chord:	92.4374		
	Middle Ordinate:	4.8011		
	External:	4.9058		
	Back Tangent Direction:	S79°53'41"E		
	Back Radial Direction:	S10°06'19"W		
	Chord Direction:	N88°14'40"E		
	Ahead Radial Direction:	S13°37'00"E		
	Ahead Tangent Direction:	N76°23'00"E		
Element: Linear				
PT	( )	116+93.10	709971.2025	3036378.2388
PC	( )	117+93.06	709994.7346	3036475.3858
	Tangential Direction:	N76°23'00"E		
	Tangential Length:	99.9565		
Element: Circular				
PC	( )	117+93.06	709994.7346	3036475.3858
HPI	( )	118+97.92	710019.4214	3036577.3000
CC	( )		709489.8949	3036597.6740
PT	( )	120+00.00	710002.6384	3036680.8097
	Radius:	519.4396		
	Delta:	22°49'34.70" Right		
	Degree of Curvature (Arc):	11°01'49.10"		
	Length:	206.9417		
	Tangent:	104.8615		
	Chord:	205.5759		
	Middle Ordinate:	10.2715		
	External:	10.4787		
	Back Tangent Direction:	N76°23'00"E		
	Back Radial Direction:	S13°37'00"E		
	Chord Direction:	N87°47'48"E		
	Ahead Radial Direction:	S09°12'35"W		
	Ahead Tangent Direction:	S80°47'25"E		

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BRIAR CREEK ROAD (FS 188)

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5 February 2026 2:31 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	A13

Briar Creek Road MP 598 & 599

Alignment Name: Briar Creek_598-599
Alignment Description:
Alignment Style: Alignment\Baseline

		Station	Northing	Easting
Element: Circular				
PC	( )	19+00.00	707665.5843	3029351.2473
HPI	( )	19+43.50	707661.4483	3029394.5511
CC	( )		707326.2514	3029318.8367
PT	( )	19+86.53	707646.5695	3029435.4283
	Radius:	340.8772		
	Delta:	14°32'41.68" Right		
	Degree of Curvature (Arc):	16°48'30.00"		
	Length:	86.5339		
	Tangent:	43.5008		
	Chord:	86.3018		
	Middle Ordinate:	2.7422		
	External:	2.7645		
	Back Tangent Direction:	S84°32'39"E		
	Back Radial Direction:	S05°27'21"W		
	Chord Direction:	S77°16'18"E		
	Ahead Radial Direction:	S20°00'03"W		
	Ahead Tangent Direction:	S69°59'57"E		
Element: Linear				
PT	( )	19+86.53	707646.5695	3029435.4283
PC	( )	20+88.47	707611.7023	3029531.2206
	Tangential Direction:	S69°59'57"E		
	Tangential Length:	101.9406		
Element: Circular				
PC	( )	20+88.47	707611.7023	3029531.2206
HPI	( )	21+31.03	707597.1458	3029571.2125
CC	( )		707520.3525	3029497.9705
PT	( )	21+68.70	707557.8874	3029587.6449
	Radius:	97.213		
	Delta:	47°17'11.34" Right		
	Degree of Curvature (Arc):	58°56'18.25"		
	Length:	80.2303		
	Tangent:	42.5587		
	Chord:	77.9727		
	Middle Ordinate:	8.16		
	External:	8.9077		
	Back Tangent Direction:	S69°59'57"E		
	Back Radial Direction:	S20°00'03"W		
	Chord Direction:	S46°21'21"E		
	Ahead Radial Direction:	S67°17'14"W		
	Ahead Tangent Direction:	S22°42'46"E		

Briar Creek Road MP 598 & 599

Alignment Name: Briar Creek_598-599
Alignment Description:
Alignment Style: Alignment\Baseline

Element: Linear				
PT	( )	21+68.70	707557.8874	3029587.6449
PC	( )	22+14.13	707515.9822	3029605.1851
	Tangential Direction:	S22°42'46"E		
	Tangential Length:	45.4281		
Element: Circular				
PC	( )	22+14.13	707515.9822	3029605.1851
HPI	( )	22+35.20	707496.5506	3029613.3186
CC	( )		707546.1834	3029677.3386
PT	( )	22+55.29	707483.8316	3029630.1105
	Radius:	78.2192		
	Delta:	30°08'43.38" Left		
	Degree of Curvature (Arc):	73°15'01.10"		
	Length:	41.1539		
	Tangent:	21.0652		
	Chord:	40.6809		
	Middle Ordinate:	2.691		
	External:	2.7869		
	Back Tangent Direction:	S22°42'46"E		
	Back Radial Direction:	S67°17'14"W		
	Chord Direction:	S37°47'07"E		
	Ahead Radial Direction:	S37°08'31"W		
	Ahead Tangent Direction:	S52°51'29"E		
Element: Linear				
PT	( )	22+55.29	707483.8316	3029630.1105
END	( )	23+00.00	707456.8347	3029665.7525
	Tangential Direction:	S52°51'29"E		
	Tangential Length:	44.7123		

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CHEROKEE NATIONAL FOREST

HORIZONTAL ALIGNMENT INFORMATION

BRIAR CREEK ROAD (FS 188)

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Paint Mountain Road (MP 590)

Alignment Name: Paint Mountain_BL1

		Station	Northing	Easting
Element: Linear				
START	( )	0+00.00	601863.9616	2886766.0848
PC	( )	1+03.08	601964.9766	2886786.6365
	Tangential Direction:	N11°30'00"E		
	Tangential Length:	103.0845		
Element: Circular				
PC	( )	1+03.08	601964.9766	2886786.6365
HPI	( )	1+39.52	602000.6794	2886793.9003
CC	( )		601940.0556	2886909.1271
PT	( )	1+73.99	602026.8879	2886819.2096
	Radius:	125		
	Delta:	32°30'00.00" Right		
	Degree of Curvature (Arc):	45°50'11.84"		
	Length:	70.904		
	Tangent:	36.4342		
	Chord:	69.9573		
	Middle Ordinate:	4.9938		
	External:	5.2016		
	Back Tangent Direction:	N11°30'00"E		
	Back Radial Direction:	S78°30'00"E		
	Chord Direction:	N27°45'00"E		
	Ahead Radial Direction:	S46°00'00"E		
	Ahead Tangent Direction:	N44°00'00"E		
Element: Linear				
PT	( )	1+73.99	602026.8879	2886819.2096
PC	( )	1+94.76	602041.8325	2886833.6414
	Tangential Direction:	N44°00'00"E		
	Tangential Length:	20.7754		
Element: Circular				
PC	( )	1+94.76	602041.8325	2886833.6414
HPI	( )	1+98.26	602044.3475	2886836.0702
CC	( )		602076.5654	2886797.6744
PT	( )	2+01.75	602047.1761	2886838.1253
	Radius:	50		
	Delta:	08°00'00.00" Left		
	Degree of Curvature (Arc):	114°35'29.61"		
	Length:	6.9813		

Paint Mountain Road MP 590 (Continued)

Alignment Name: Paint Mountain_BL1

		Station	Northing	Easting
	Tangent:	3.4963		
	Chord:	6.9756		
	Middle Ordinate:	0.1218		
	External:	0.1221		
	Back Tangent Direction:	N44°00'00"E		
	Back Radial Direction:	S46°00'00"E		
	Chord Direction:	N40°00'00"E		
	Ahead Radial Direction:	S54°00'00"E		
	Ahead Tangent Direction:	N36°00'00"E		
Element: Linear				
PT	( )	2+01.75	602047.1761	2886838.1253
END	( )	2+27.73	602068.2000	2886853.4000
	Tangential Direction:	N36°00'00"E		
	Tangential Length:	25.9869		

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CHEROKEE NATIONAL FOREST

HORIZONTAL ALIGNMENT INFORMATION

PAINT MOUNTAIN ROAD (FS 54)

Paint Mountain Road MP 589

Alignment Name: Paint_MP580

		Station	Northing	Easting
Element: Linear				
START	( )	0+00.000	604281.265	2885652.688
PC	( )	0+47.388	604321.301	2885627.336
	Tangential Direction:	N32.343°W		
	Tangential Length:	47.388		
Element: Circular				
PC	( )	0+47.388	604321.301	2885627.336
HPI	( )	1+31.597	604392.446	2885582.284
CC	( )		604341.631	2885659.44
PT	( )	1+34.552	604379.155	2885665.438
	Radius:	38		
	Delta:	131.425° Right		
	Degree of Curvature (Arc):	150.778°		
	Length:	87.164		
	Tangent:	84.209		
	Chord:	69.273		
	Middle Ordinate:	22.37		
	External:	54.386		
	Back Tangent Direction:	N32.343°W		
	Back Radial Direction:	N57.657°E		
	Chord Direction:	N33.369°E		
	Ahead Radial Direction:	S9.081°W		
	Ahead Tangent Direction:	S80.919°E		
Element: Linear				
PT	( )	1+34.552	604379.155	2885665.438
END	( )	1+46.054	604377.339	2885676.796
	Tangential Direction:	S80.919°E		
	Tangential Length:	11.502		

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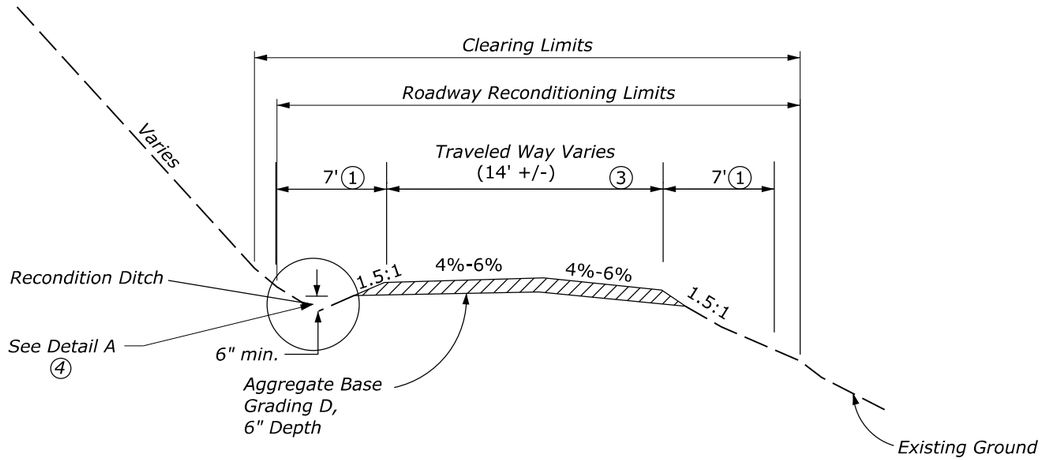
CHEROKEE NATIONAL FOREST

HORIZONTAL ALIGNMENT INFORMATION

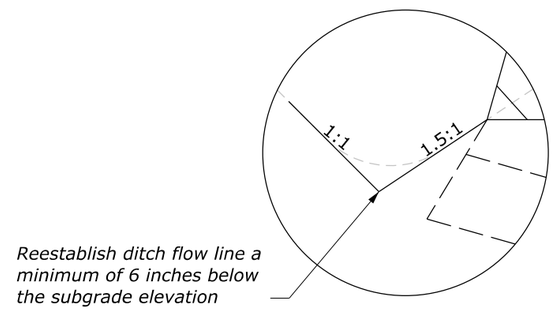
PAINT MOUNTAIN ROAD (FS 54)

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	B01

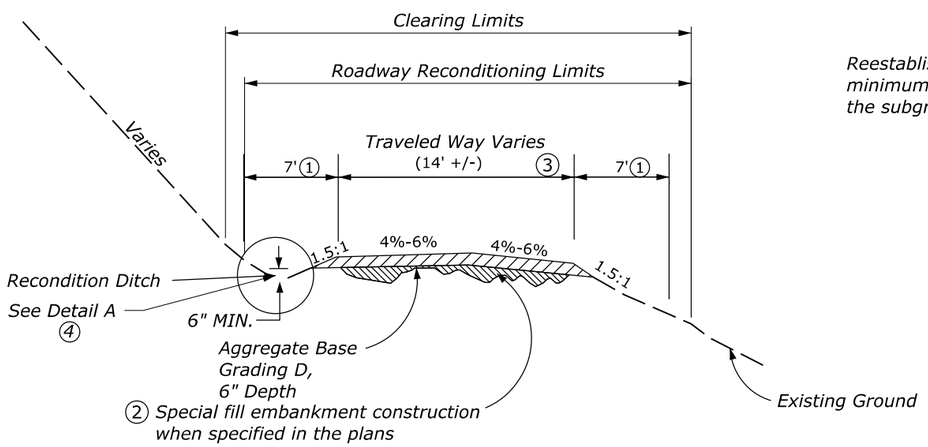


TYPICAL SECTION

2+20 TO 249+61



Detail A



TYPICAL SECTION WITH SPECIAL FILL CONDITION

2+20 TO 30+50
80+00 TO 90+20
124+25 TO 127+90
136+31 TO 145+00
159+69 TO 161+19
204+93 TO 206+93

NOTES:

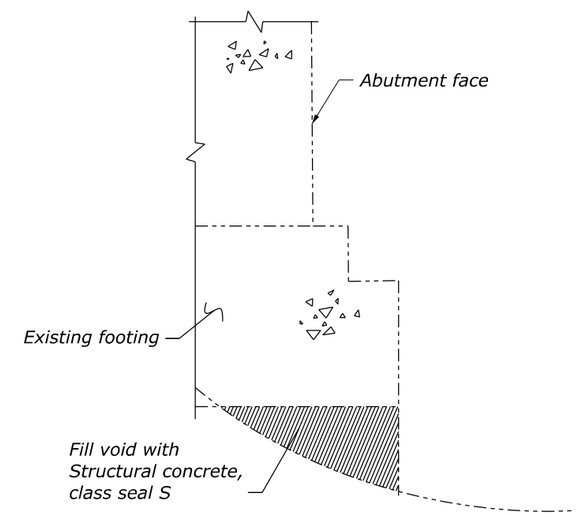
① *Clearing Limits*
Do not clear trees greater than 8 inches in diameter on stream side of road when road edge is less than 100 feet from a stream course unless tree is specifically marked for removal. Trim tree limbs by sawing as near flush with the trunk as practicable and to a height of 14 feet above the proposed roadway surface.

② *Embankment construction*
Reconstruct roadbed to reestablish roadway cross slopes and provide a minimum cover of 6 inches from bottom of road aggregate to large rocks. Remove protruding rocks as necessary or as directed by the CO.

③ *Traveled way widths.*
Place aggregate within traveled way. Match existing travel way width. Travel way includes shoulders, curve widening, turnouts, and other road structure variations.

④ *Ditch reconditioning*
Regrade all existing roadway ditches to the limits shown in the plans or as directed by the CO.

⑤ *AOP Foundation Repair*
Clean up debris and grade to drain. Grout underneath to restabilize foundation to prevent undermining.



AOP FOUNDATION REPAIR

124+25

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TYPICAL SECTIONS

BRIAR CREEK ROAD (FS 188)

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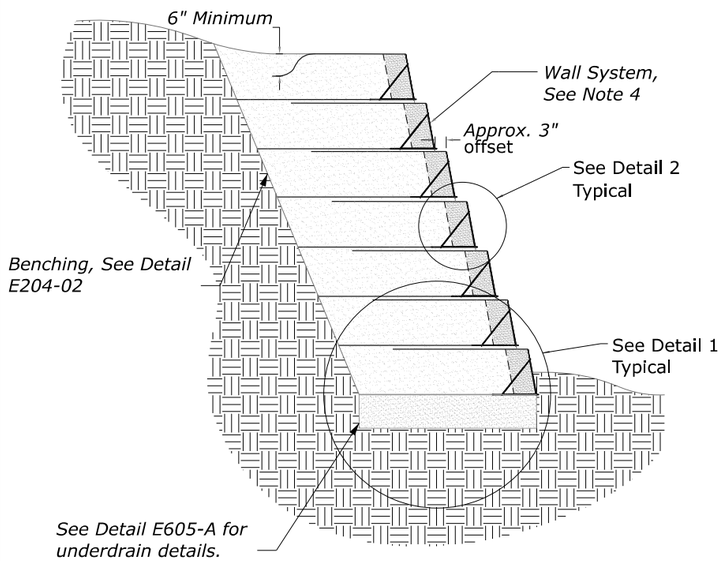
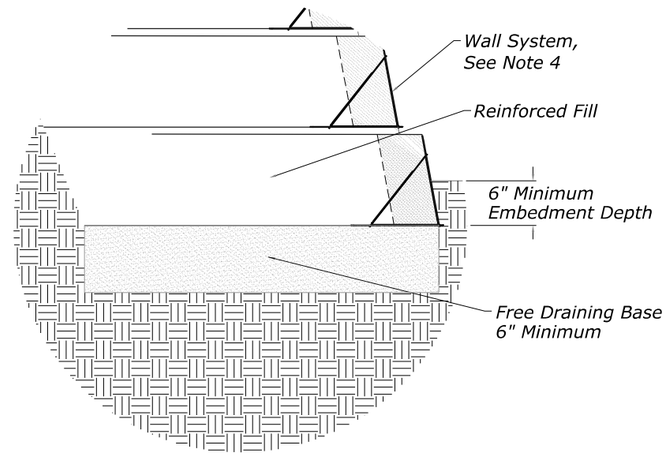
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	B02



Elevation 1: Installation



Detail 1: Foundation

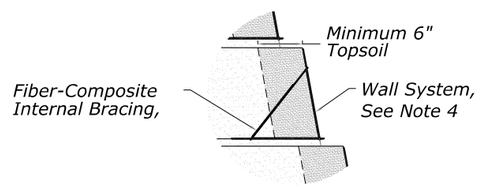
Construction Steps:

1. *Excavate according to Section 209.*
2. *Prepare the foundation by roughly leveling the base of the excavation.*
3. *Install free draining granular base to create a level working platform.*
4. *Install MSE wall in accordance with Section 255 and details 1 and 2 on this sheet.*
5. *Vegetate the new wall system according to Detail 2.*
6. *Place and compact embankment fill, where required, above the MSE wall system to match existing roadway elevation.*

NOTE: Design the MSE wall according to Section 257 and submit it for review and approval.

Soil Fill Type	Unit Weight (pcf)	Short Term/Long Term	
		Friction Angle (Φ')	Cohesion (c')
Bedrock	160	40	4000
Embankment Fill	120	32	0
Reinforced Fill	120	34	0
Retained Fill	120	30	0
Free Draining Base	120	34	0

NOTE: Gabion Walls are prohibited on this project.

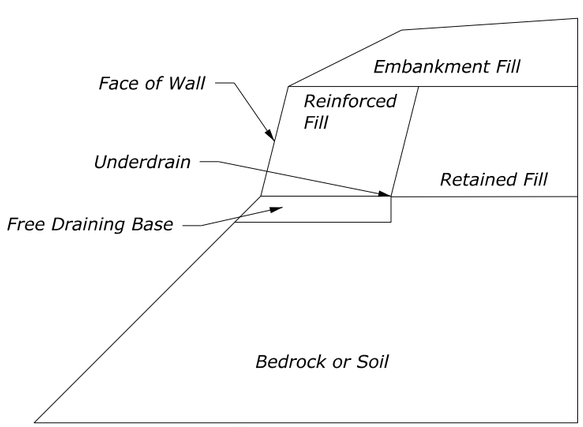


Detail 2: Vegetation Establishment

Summary of External Stability Analysis - Static

MSE Wall Analysis Condition		Sliding	Limiting Eccentricity	Bearing	Global Stability
Wall Location & Backslope	Approx. Height & Reinforcement Length (L)	CDR ≥ 1	e/L ≤ 0.333	CDR ≥ 1	FOS ≥ 1.3
MP 633	Wall Height: 12 ft L=12 ft	2.16	0.0052	3.96 a	1.36
MP 660	Wall Height: 12 ft L=10 ft	1.78	0.0271	3.67 a	1.56
MP 590	Wall Height: 17 ft L=12 ft	1.58	0.0658	2.56 a	1.85

a - Bearing required the use of limit equilibrium bearing analysis.



Typical Section

NOTE: All MSE walls are expected to be founded on soil.
Any bedrock encountered on site is considered acceptable and suitable.

Summary of External Stability Analysis - Seismic

MSE Wall Analysis Condition		Sliding	Limiting Eccentricity	Bearing	Global Stability
Wall Location & Backslope	Approx. Height & Reinforcement Length (L)	CDR ≥ 1	e/L ≤ 0.333	CDR ≥ 1	FOS ≥ 1.3
MP 633	Wall Height: 12 ft L=12 ft	1.86	0.0911	1.31	1.10
MP 660	Wall Height: 12 ft L=10 ft	1.54	0.1401	4.58 a	1.31
MP 590	Wall Height: 17 ft L=12 ft	1.29	0.2004	2.42 a	1.43

a - Bearing required the use of limit equilibrium bearing analysis.

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TYPICAL SECTIONS

MSE Wall

BRIAR CREEK ROAD (FS 188)
FLATWOODS ROAD (FS 87)
PAINT MOUNTAIN ROAD (FS 54)

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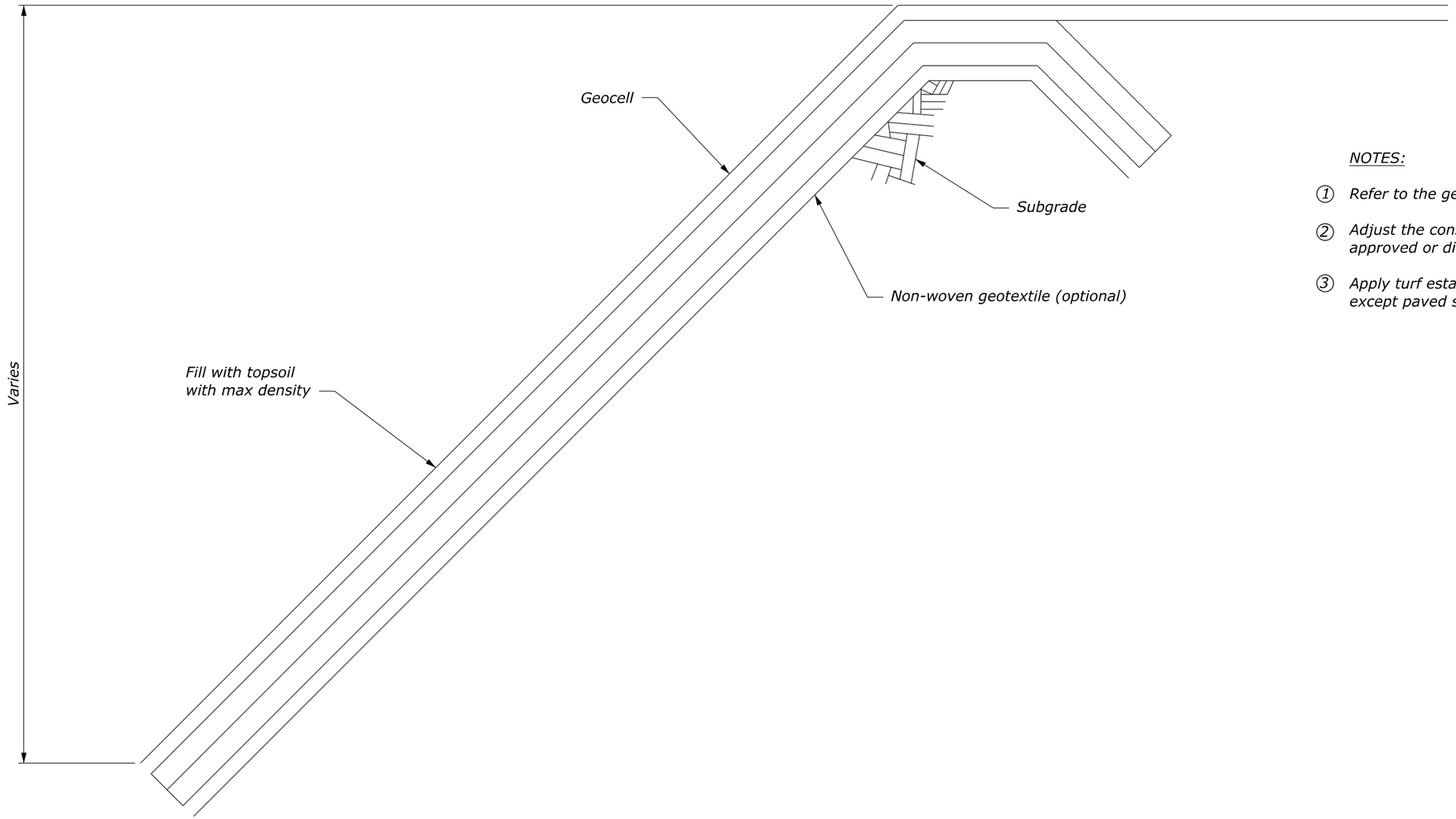
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	B03



NOTES:

1. *Refer to the geotechnical report for site conditions.*
2. *Adjust the construction limits to fit field conditions as approved or directed by the CO.*
3. *Apply turf establishment to all disturbed area except paved surfaces, traveled way, or rock face.*

GENERALIZED CELLULAR CONFINEMENT SYSTEM SECTION

2+30 to 3+10
20+50 to 21+50

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CHEROKEE NATIONAL FOREST

TYPICAL SECTIONS

CELLULAR CONFINEMENT SYSTEM
BRIAR CREEK ROAD (FS 188)
FLATWOODS ROAD (FS 87)

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C01

SUMMARY OF QUANTITIES - SCHEDULE A

Line Item No.	Pay Item Number	Pay Item Description	Unit	Plan Quantity	Contingency	Estimated Quantities Bid Schedule	Remarks and/or Determination of Estimated Quantity
A0020	15101-0000	MOBILIZATION	LPSM	ALL		ALL	
A0040	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM	ALL		ALL	
A0060	15401-0000	CONTRACTOR TESTING	LPSM	ALL		ALL	
A0080	15701-0000	SOIL EROSION CONTROL	LPSM	ALL		ALL	
A0100	20101-0000	CLEARING AND GRUBBING	ACRE	0.5	0.1	0.6	
A0120	20104-0000	CLEARING	ACRE	8.0	0.8	8.8	
A0140	20301-1200	REMOVAL OF HEADWALL	EACH	6	1	7	
A0160	20301-1900	REMOVAL OF PIPE CULVERT	EACH	25	4	29	
A0180	20420-0000	EMBANKMENT CONSTRUCTION	CUYD	2,612	131	2,743	EMBANKMENT CONSTRUCTION IN SEVERELY ERODED AREAS AS IDENTIFIED ON THE TYPICAL SECTION.
A0200	20425-1000	DITCH, EXCAVATION	LNFT	40	6	46	
A0220	20443-0000	BERMS	LNFT	10	1	11	
A0240	25101-0200	PLACED RIPRAP, CLASS 2	CUYD	245	49	294	INSTALL AT ALL NEW PIPE LOCATIONS AND PIPES TO BE REPLACED. SEE RIPRAP DETAIL SHEET.
A0260	25101-0300	PLACED RIPRAP, CLASS 3	CUYD	13	3	16	INSTALL AT ALL NEW PIPE LOCATIONS AND PIPES TO BE REPLACED. SEE RIPRAP DETAIL SHEET.
A0280	25101-0400	PLACED RIPRAP, CLASS 4	CUYD	237	48	285	
A0300	25501-0000	MECHANICALLY STABILIZED EARTH WALL	SQFT	2,400	480	2,880	
A0320	25701-0000	CONTRACTOR PROVIDED RETAINING STRUCTURE DESIGN	LPSM	ALL		ALL	
A0340	30101-2000	AGGREGATE BASE GRADING D	TON	12,123	2,425	14,548	
A0380	30301-6000	ROADWAY RECONDITIONING	MILE	4.69	0.23	4.92	
A0400	30302-1000	DITCH RECONDITIONING	LNFT	50	3	53	AOP FOUNDATION
A0420	55201-1200	STRUCTURAL CONCRETE, CLASS S (SEAL)	CUYD	2		2	ALL PROPOSED PIPES ARE TO BE CMP. SEE THE DRAINAGE SCHEDULE. THE PIPE LENGTHS SHOWN ON THE DRAINAGE SCHEDULE ARE ESTIMATES. FIELD VERIFY AND ADJUST LENGTHS AS APPROVED BY THE CO.
A0440	60201-0800	24-INCH PIPE CULVERT	LNFT	684	103	787	ALL PROPOSED PIPES ARE TO BE CMP. SEE THE DRAINAGE SCHEDULE. THE PIPE LENGTHS SHOWN ON THE DRAINAGE SCHEDULE ARE ESTIMATES. FIELD VERIFY AND ADJUST LENGTHS AS APPROVED BY THE CO.
A0460	60201-0900	30-INCH PIPE CULVERT	LNFT	32	5	37	ALL PROPOSED PIPES ARE TO BE CMP. SEE THE DRAINAGE SCHEDULE. THE PIPE LENGTHS SHOWN ON THE DRAINAGE SCHEDULE ARE ESTIMATES. FIELD VERIFY AND ADJUST LENGTHS AS APPROVED BY THE CO.
A0480	60201-1100	42-INCH PIPE CULVERT	LNFT	50	8	58	ALL PROPOSED PIPES ARE TO BE CMP. SEE THE DRAINAGE SCHEDULE. THE PIPE LENGTHS SHOWN ON THE DRAINAGE SCHEDULE ARE ESTIMATES. FIELD VERIFY AND ADJUST LENGTHS AS APPROVED BY THE CO.
A0500	60201-1200	48-INCH PIPE CULVERT	LNFT	100	15	115	ALL PROPOSED PIPES ARE TO BE CMP. SEE THE DRAINAGE SCHEDULE. THE PIPE LENGTHS SHOWN ON THE DRAINAGE SCHEDULE ARE ESTIMATES. FIELD VERIFY AND ADJUST LENGTHS AS APPROVED BY THE CO.
A0520	60201-1300	54-INCH PIPE CULVERT	LNFT	100	15	115	ALL PROPOSED PIPES ARE TO BE CMP. SEE THE DRAINAGE SCHEDULE. THE PIPE LENGTHS SHOWN ON THE DRAINAGE SCHEDULE ARE ESTIMATES. FIELD VERIFY AND ADJUST LENGTHS AS APPROVED BY THE CO.
A0540	60201-1400	60-INCH PIPE CULVERT	LNFT	70	11	81	SEE THE "TYPE 3" DRAINAGE CONSTRUCTION DETAIL SHEET.
A0560	60704-0000	CLEANING CULVERT IN PLACE	EACH	23	1	24	
A0580	62501-0000	TURF ESTABLISHMENT	ACRE	0.36	0.04	0.40	
A0600	62903-0000	CELLULAR CONFINEMENT SYSTEM	SQYD	301	15	316	
A0620	63501-0000	TEMPORARY TRAFFIC CONTROL	LPSM	ALL		ALL	
A0640	63701-0000	FIELD OFFICE	EACH	1		1	

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

TABULATION OF QUANTITIES

BRIAR CREEK ROAD (FS 188)

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4 March 2026 2:00 PM

SUMMARY OF QUANTITIES - SCHEDULE B

Line Item No.	Pay Item Number	Pay Item Description	Unit	PLAN QUANTITY	Contingency	Estimated Quantities	Remarks and/or Determination of Estimated Quantity
						Bid Schedule	
B0020	15101-0000	MOBILIZATION	LPSM	ALL		ALL	
B0040	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM	ALL		ALL	
B0060	15401-0000	CONTRACTOR TESTING	LPSM	ALL		ALL	
B0080	15701-0000	SOIL EROSION CONTROL	LPSM	ALL		ALL	
B0100	20101-0000	CLEARING AND GRUBBING	ACRE	0.2	0.1	0.3	
B0120	20301-1900	REMOVAL OF PIPE CULVERT	EACH	1		1	
B0140	25101-0200	PLACED RIPRAP, CLASS 2	CUYD	5	1	6	
B0160	25101-0400	PLACED RIPRAP, CLASS 4	CUYD	151	30	181	
B0180	25501-0000	MECHANICALLY STABILIZED EARTH WALL	SQFT	850	170	1,020	
B0200	25701-0000	CONTRACTOR PROVIDED RETAINING STRUCTURE DESIGN	LPSM	ALL		ALL	
B0220	60201-0800	24-INCH PIPE CULVERT	LNFT	30	5	35	
B0240	60202-1200	72-INCH EQUIVALENT DIAMETER ARCH OR ELLIPTICAL PIPE CULVERT	LNFT	36	5	41	
B0260	62501-0000	TURF ESTABLISHMENT	ACRE	0.12	0.01	0.13	
B0280	63501-0000	TEMPORARY TRAFFIC CONTROL	LPSM	ALL		ALL	

SUMMARY OF QUANTITIES - SCHEDULE C

Line Item Number	Pay Item Number	Pay Item Description	Unit	Plan Quantity	Contingency	Estimated Quantities	Remarks and/or Determination of Estimated Quantity
						Bid Schedule	
C0020	15101-0000	MOBILIZATION	LPSM	ALL		ALL	
C0040	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM	ALL		ALL	
C0060	15401-0000	CONTRACTOR TESTING	LPSM	ALL		ALL	
C0080	15701-0000	SOIL EROSION CONTROL	LPSM	ALL		ALL	
C0100	20101-0000	CLEARING AND GRUBBING	ACRE	0.6	0.1	0.7	
C0120	25501-0000	MECHANICALLY STABILIZED EARTH WALL	SQFT	2,880	576	3,456	
C0140	25701-0000	CONTRACTOR PROVIDED RETAINING STRUCTURE DESIGN	LPSM	ALL		ALL	
C0160	62501-0000	TURF ESTABLISHMENT	ACRE	0.48	0.05	0.53	
C0180	62903-0000	CELLULAR CONFINEMENT SYSTEM	SQYD	663	34	697	
C0200	63501-0000	TEMPORARY TRAFFIC CONTROL	LPSM	ALL		ALL	

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C04

CLEARING AND REMOVALS SUMMARY

Sheet	ROUTE NAME	STATION TO STATION			SIDE	Schedule A Pay Item 20101-0000 CLEARING AND GRUBBING ACRE	Schedule A Pay Item 20104-0000 CLEARING ACRE	REMARKS
M02	Briar Creek Road	2+20	to	30+00	CL	0.22	0.89	MP 599
M03	Briar Creek Road	30+00	to	60+00	CL		0.96	
M04	Briar Creek Road	60+00	to	90+00	CL		0.96	
M05	Briar Creek Road	90+00	to	120+00	CL	0.25	0.96	MP 633
M06	Briar Creek Road	120+00	to	150+00	CL		0.96	
M07	Briar Creek Road	150+00	to	180+00	CL		0.96	
M08	Briar Creek Road	180+00	to	207+00	CL		0.87	
M09	Briar Creek Road	207+00	to	240+00	CL		1.06	
M10	Briar Creek Road	240+00	to	249+61	CL		0.37	Additional area for cul-de-sac
					Subtotal this sheet	0.5	8.0	
					Rounded Total	0.6	8.8	

SOIL EROSION CONTROL SUMMARY

Sheet	ROUTE NAME	STATION TO STATION			SIDE	Schedule A Section 157 SOIL EROSION CONTROL, FIBER ROLL LNFT	Schedule A Pay Item 62501-0000 TURF ESTABLISHMENT ACRE	REMARKS
M02	Briar Creek Road	2+20	to	30+00	CL	280	0.16	MP 599
M03	Briar Creek Road	30+00	to	60+00	CL			
M04	Briar Creek Road	60+00	to	90+00	CL			
M05	Briar Creek Road	90+00	to	120+00	CL	432	0.20	MP 633
M06	Briar Creek Road	120+00	to	150+00	CL			
M07	Briar Creek Road	150+00	to	180+00	CL			
M08	Briar Creek Road	180+00	to	207+00	CL			
M09	Briar Creek Road	207+00	to	240+00	CL			
M10	Briar Creek Road	240+00	to	249+61	CL			Additional area for cul-de-sac
					Subtotal this sheet	712	0.36	
					Rounded Total	748	0.40	

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

SUMMARIES AND SCHEDULES
SCHEDULE A

BRIAR CREEK ROAD (FS 188)

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PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C05

EARTHWORK SUMMARY

SHEET	ROUTE NAME	STATION TO STATION			Schedule A	Schedule A	Schedule A	Schedule A	Schedule A	Schedule A	Schedule A	Schedule A	Schedule A	REMARKS
					Pay Item	Pay Item	Pay Item	Pay Item	Pay Item	Pay Item	Pay Item	Pay Item	Pay Item	
					20420-0000	20425-1000	20443-0000	25501-0000	30101-2000	30301-6000	30302-1000	55201-1200	62903-0000	
					EMBANKMENT CONSTRUCTION	DITCH, EXCAVATION	BERMS	MECHANICALLY STABILIZED EARTH WALL	AGGREGATE BASE GRADING D	ROADWAY RECONDITIONING	DITCH RECONDITIONING	STRUCTURAL CONCRETE, CLASS S (SEAL)	CELLULAR CONFINEMENT SYSTEM	
					CUYD	LNFT	LNFT	SQFT	TON	MILE	LNFT	CUYD	SQYD	
D01	Briar Creek Road	2+20	to	30+00	1,467				1,362	0.53				MP 599 - Cellular Confinement System
D02	Briar Creek Road	30+00	to	60+00		40			1,470	0.57				
D03	Briar Creek Road	60+00	to	90+00	321				1,470	0.57	50			
D04	Briar Creek Road	90+00	to	120+00			5	2,400	1,470	0.57				MP 633
D05	Briar Creek Road	120+00	to	150+00	640		5		1,470	0.57		2		Structural Concrete for AOP Foundation Repair
D06	Briar Creek Road	150+00	to	180+00	80				1,470	0.57				
D07	Briar Creek Road	180+00	to	207+00	104				1,323	0.51				
D08	Briar Creek Road	207+00	to	240+00					1,617	0.63				
D09	Briar Creek Road	240+00	to	249+61					471	0.18				Additional area for cul-de-sac
D01	Briar Creek Road	19+92	to	21+95									301	MP 599 - Cellular Confinement System
D04	Briar Creek Road	116+37	to	118+90										MP 633
Subtotal this Sheet					2,612	40	10	2,400	12,123	4.69	50	2	301	
Rounded Total					2,743	46	11	2,880	14,548	4.92	53	2	317	

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FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

SUMMARIES AND SCHEDULES
SCHEDULE A

BRIAR CREEK ROAD (FS 188)

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C06

DRAINAGE SUMMARY

SHEET	ROUTE NAME	STATION TO STATION	SIDE	Schedule A Pay Item 20301-1200 REMOVAL OF HEADWALL EACH	Schedule A Pay Item 20301-1900 REMOVAL OF PIPE CULVERT EACH	Schedule A Pay Item 25101-0200 PLACED RIPRAP, CLASS 2 CUYD	Schedule A Pay Item 25101-0300 PLACED RIPRAP, CLASS 3 CUYD	Schedule A Pay Item 25101-0400 PLACED RIPRAP, CLASS 4 CUYD	Schedule A Pay Item 60201-0800 24-INCH PIPE CULVERT LNFT	Schedule A Pay Item 60201-0900 30-INCH PIPE CULVERT LNFT	Schedule A Pay Item 60201-1100 42-INCH PIPE CULVERT LNFT	Schedule A Pay Item 60201-1200 48-INCH PIPE CULVERT LNFT	Schedule A Pay Item 60201-1300 54-INCH PIPE CULVERT LNFT	Schedule A Pay Item 60201-1400 60-INCH PIPE CULVERT LNFT	Schedule A Pay Item 60704-0000 CLEANING CULVERT IN PLACE EACH	REMARKS
D01	Briar Creek Road	00+00 to 30+00	CL		3	68			82						5	See Drainage Schedule
D02	Briar Creek Road	30+00 to 60+00	CL		6	60			206						3	See Drainage Schedule
D03	Briar Creek Road	60+00 to 90+00	CL	5	6	76		81	174						6	See Drainage Schedule
D04	Briar Creek Road	90+00 to 120+00	CL	1	3	32		50	92			100			4	See Drainage Schedule
D05	Briar Creek Road	120+00 to 150+00	CL		3	10	13	39	58	32	50		50	70	3	See Drainage Schedule
D06	Briar Creek Road	150+00 to 180+00	CL		2			67	32							See Drainage Schedule
D07	Briar Creek Road	180+00 to 207+00	CL		1	5			40						1	See Drainage Schedule
D08	Briar Creek Road	207+00 to 240+00	CL		1	5										See Drainage Schedule
D09	Briar Creek Road	240+00 to 249+61	CL												1	See Drainage Schedule
			Subtotal this Sheet	6	25	245	13	237	684	32	50	100	100	70	23	
			Rounded Total	7	29	294	16	285	787	37	58	115	115	81	25	

NOTE: Refer to Drainage Schedule for quantity breakdown.

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FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

SUMMARIES AND SCHEDULES
SCHEDULE A

BRIAR CREEK ROAD (FS 188)

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C07

CONSTRUCTION SIGN SUMMARY

SCHEDULE	SHEET	ROUTE NAME	MUTCD NO.	SIGN TEXT	PANEL SIZE			COLOR COMBINATION	QUANTITY	Schedule A Section 635 TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	Schedule A Section 635 TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	REMARKS
					Width (in)	Height (in)	Area (sqft)			(SQFT)	(SQFT)	
A	N01	Briar Creek Road	R11-2	ROAD CLOSED	48	30	6.5	Black on White	4	26	2	
A	N01	Briar Creek Road	CUSTOM	BRIAR CREEK ROAD (FS 188) WILL BE CLOSED FOR X MILES BEGINNING ON MM/DD	48	24	8	Black on Orange	3	24		
									*Subtotal this Sheet	50.0	2.0	

NOTE: Construct and erect all signs in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.

* All quantities in this table are for information only

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
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CHEROKEE NATIONAL FOREST

SUMMARIES AND SCHEDULES
SCHEDULE A
BRIAR CREEK ROAD (FS 188)

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PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C08

SOIL EROSION CONTROL SUMMARY

Sheet	ROUTE NAME	STATION TO STATION			SIDE	Schedule B Section 157 SOIL EROSION CONTROL, FIBER ROLL LNFT	Schedule B Pay Item 62501-0000 TURF ESTABLISHMENT ACRE	REMARKS
M14	Paint Mountain Road	0+62	to	1+95	CL	111	0.09	MP 590
M15	Paint Mountain Road	0+91	to	1+25	CL	251	0.02	MP 589
Subtotal this sheet						362	0.12	
Rounded Total						381	0.13	

CLEARING AND REMOVALS SUMMARY

Sheet	ROUTE NAME	STATION TO STATION			SIDE	Schedule B Pay Item 20101-0000 CLEARING AND GRUBBING ACRE	REMARKS
M14	Paint Mountain Road	0+62	to	1+95	CL	0.1	MP 590
M15	Paint Mountain Road	0+91	to	1+25	CL	0.1	MP 589
Subtotal this sheet						0.20	
Rounded Total						0.30	

EARTHWORK SUMMARY

SHEET	ROUTE NAME	STATION TO STATION			Schedule B Pay Item 25501-0000 MECHANICALLY STABILIZED EARTH WALL SQFT	REMARKS
D13	Paint Mountain Road	0+98	to	1+48	850	
Subtotal this Sheet					850	
Rounded Total					1,020	

DRAINAGE SUMMARY

SHEET	ROUTE NAME	STATION TO STATION			SIDE	Schedule B Pay Item 20301-1900 REMOVAL OF PIPE CULVERT EACH	Schedule B Pay Item 25101-0200 PLACED RIPRAP, CLASS 2 CUYD	Schedule B Pay Item 25101-0400 PLACED RIPRAP, CLASS 4 CUYD	Schedule B Pay Item 60201-0800 24-INCH PIPE CULVERT LNFT	Schedule B Pay Item 60202-1200 72-INCH EQUIVALENT DIAMETER ARCH OR ELLIPTICAL PIPE CULVERT LNFT	REMARKS
D14	Paint Mountain Road	1+01	to	1+01	CL	1		151		36	MP 589, See Drainage Schedule
D14	Paint Mountain Road	+8	to	+8	CL		5		30		
Subtotal this Sheet						1	5	151		36	
Rounded Total						1	6	181	35	41	

NOTE: Refer to Drainage Schedule for quantity breakdown.

NO.	DATE	BY	REVISIONS

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CHEROKEE NATIONAL FOREST

SUMMARIES AND SCHEDULES SCHEDULE B

PAINT MOUNTAIN ROAD (FS 54)

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CONSTRUCTION SIGN SUMMARY

SCHEDULE	SHEET	ROUTE NAME	MUTCD NO.	SIGN TEXT	PANEL SIZE			COLOR COMBINATION	QUANTITY	Schedule B Section 635 TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	Schedule B Section 635 TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	REMARKS
					Width (in)	Height (in)	Area (sqft)			SQFT	LNFT	
B	N02	Paint Mountain Road	W20-3	ROAD CLOSED AHEAD	30	30	6.25	Black on Orange	2	12.5		
B	N02	Paint Mountain Road	W20-3	ROAD CLOSED 1000 FT	30	30	6.25	Black on Orange	2	12.5		
B	N02	Paint Mountain Road	W20-3	ROAD CLOSED 500 FT	30	30	6.25	Black on Orange	2	12.5		
B	N02	Paint Mountain Road	R11-3A	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY	60	30	12.50	Black on White	3	38	3	
B	N02	Paint Mountain Road	R11-2	ROAD CLOSED	48	30	10	Black on White	4	40	2	
B	N02	Paint Mountain Road	CUSTOM	PAINT MOUNTAIN ROAD (FS 54) WILL BE CLOSED FOR X MILES BEGINNING ON MM/DD	48	24	8	Black on Orange	3	24		
									*Subtotal this Sheet	139.0	5.0	

NOTE: Construct and erect all signs in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.

* All quantities in this table are for information only

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

SUMMARIES AND SCHEDULES
SCHEDULE B
PAINT MOUNTAIN ROAD (FS 54)

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C10

CLEARING AND REMOVALS SUMMARY

Sheet	ROUTE NAME	STATION TO STATION			SIDE	Schedule C Pay Item 20101-0000 CLEARING AND GRUBBING ACRE	REMARKS
M13	Flatwoods Road	0+01	to	3+47		0.6	MP 659 & MP 660
				Subtotal this sheet		0.6	
				Rounded Total		0.7	

SOIL EROSION CONTROL SUMMARY

Sheet	ROUTE NAME	STATION TO STATION			SIDE	Schedule C Section 157 SOIL EROSION CONTROL, FIBER ROLL LNFT	Schedule C Pay Item 20101-0000 CLEARING AND GRUBBING ACRE	Schedule C Pay Item 62501-0000 TURF ESTABLISHMENT ACRE	REMARKS
M13	Flatwoods Road	0+01	to	3+47		437	0.6	0.48	MP 659 & MP 660
					Subtotal this sheet	437	0.6	0.48	
					Rounded Total	459	0.7	0.53	

EARTHWORK SUMMARY

SHEET	ROUTE NAME	STATION TO STATION			Schedule C Pay Item 25501-0000 MECHANICALLY STABILIZED EARTH WALL SQFT	Schedule C Pay Item 62903-0000 CELLULAR CONFINEMENT SYSTEM SQYD	REMARKS
D12	Flatwoods Road	0+05	to	2+40	2,880		MP 660
D12	Flatwoods Road	2+30	to	3+10		663	MP 659 - Cellular Confinement System
				Subtotal this Sheet	2,880	663	
				Rounded Total	3,456	697	

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

SUMMARIES AND SCHEDULES
SCHEDULE C

FLATWOODS ROAD (FS 87)

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CONSTRUCTION SIGN SUMMARY

SCHEDULE	SHEET	ROUTE NAME	MUTCD NO.	SIGN TEXT	PANEL SIZE			COLOR COMBINATION	QUANTITY	Schedule C Section 635 TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	Schedule C Section 635 TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	REMARKS
					Width (in)	Height (in)	Area (sqft)			SQFT	LNFT	
C	N03	Flatwoods Road	W20-3	ROAD CLOSED AHEAD	30	30	6.25	Black on Orange	2	12.50		
C	N03	Flatwoods Road	W20-3	ROAD CLOSED 1000 FT	30	30	6.25	Black on Orange	2	12.50		
C	N03	Flatwoods Road	W20-3	ROAD CLOSED 500 FT	30	30	6.25	Black on Orange	2	12.50		
C	N03	Flatwoods Road	R11-3A	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY	60	30	12.50	Black on White	2	25	2	
C	N03	Flatwoods Road	R11-2	ROAD CLOSED	48	30	10	Black on White	4	40	2	
C	N03	Flatwoods Road	CUSTOM	FLATWOODS ROAD (FS 87) WILL BE CLOSED FOR X MILES BEGINNING ON MM/DD	48	24	8	Black on Orange	2	16		
									*Subtotal this Sheet	118.5	4.0	

NOTE: Construct and erect all signs in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.

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PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C12

	LOCATION			REMARKS
	STATION	LAT.	LONG.	
D01	2+20	36.22773	-82.40152	Roadway reconditioning from mile post 0.04 to 4.7. Add 6" aggregate base course (grading D) approx. 14' wide for entire length of project. Begin roadway special fill.
D02	30+50	36.22262	-82.39943	End roadway special fill.
D03	71+22	36.22812	-82.39190	Recondition ditch 50 LF down to next culvert.
D04	84+00	36.22893	-82.38866	Begin roadway special fill.
D05	90+20	36.22923	-82.38684	End roadway special fill.
D05	124+25	36.22919	-82.37663	Repair concrete foundation of ex. structural plate AOP structure. Begin special fill.
D05	127+90	36.22889	-82.37526	End roadway special fill.
D05	136+31	36.22883	-82.37282	Begin roadway special fill going uphill from this location.
D05	145+00	36.22927	-82.37003	End roadway special fill.
D06	159+69	36.23071	-82.36732	Begin special fill, special fill for 150 LF.
D06	161+19	36.23105	-82.36706	End special fill.
D07	204+93	36.22897	-82.35928	Begin roadway special fill.
D07	206+93	36.22899	-82.35861	End roadway special fill.
D09	249+61	36.22104	-82.36569	End roadway reconditioning; Include 60' dia. cul-de-sac turnaround.

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
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CHEROKEE NATIONAL FOREST

ROADWAY SCHEDULE

BRIAR CREEK ROAD (FS 188)

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PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C13

SHEET NUMBER	CULVERT ID	LOCATION					ITEM NO.	EX. SIZE (DIA.)	EX. LENGTH (FEET) (B)	PROP. SIZE (DIA.)	PROP. LENGTH (FEET)	DETAIL TYPE (A)	RIPRAP CLASS	REMARKS (C) (D)
		MASTER PIN	MILE POST	STATION	LAT.	LONG.								
D01	P-FSR188-1	592	0.039	2+20	36.22773	-82.401519		UNK.	UNK.			3	2	Clean pipe; Place 5LF x 10'W riprap at outfall.
D01	P-FSR188-2	593	0.065	3+28	36.22734	-82.401742		UNK.	UNK.			3		Clean ex. pipe.
D01	P-FSR188-3	594	0.18	9+45	36.22599	-82.402585		UNK.	UNK.	24 IN	28 LF	1	2	Remove & replace ex. pipe; Place 30 LF riprap at outfall.
D01	P-FSR188-4	595	0.23	12+25	36.22529	-82.402998		UNK.	UNK.	24 IN	24 LF	1	2	Remove & replace ex. pipe; Place 30 LF riprap at outfall.
D01	P-FSR188-5	596	0.35	18+30	36.22384	-82.402901		UNK.	UNK.			3		Clean ex. pipe.
D01	P-FSR188-6	598	0.40	20+81	36.22362	-82.402232		UNK.	UNK.			3	2	Clean ex. pipe; Place 30 LF riprap at outfall.
D01	P-FSR188-7	600	0.453	24+15	36.223	-82.401368		UNK.	UNK.	24 IN	30 LF	1	2	Remove & replace ex. pipe; Place 10 LF riprap at outfall.
D01	P-FSR188-8	602	0.518	27+45	36.22314	-82.400354		UNK.	UNK.			3	2	Clean ex. pipe; Place 20 LF riprap at outfall.
D02	P-FSR188-9	603	0.573	30+50	36.22261	-82.399454		UNK.	UNK.	24 IN	36 LF	1	2	Remove & replace ex. pipe; Place 20 LF riprap at outfall.
D02	P-FSR188-10	604	0.64	34+05	36.2224	-82.398515		UNK.	UNK.	24 IN	32 LF	1	2	Remove & replace ex. pipe.
D02	P-FSR188-11	605	0.684	36+40	36.223	-82.398279		UNK.	UNK.	24 IN	36 LF	1	2	Remove & replace ex. pipe; Place 30 LF riprap at outfall.
D02	P-FSR188-12	606	0.75	39+90	36.2238	-82.398065		UNK.	UNK.			3		Clean ex. pipe.
D02	P-FSR188-13	607	0.795	42+25	36.22438	-82.398269		UNK.	UNK.			3		Clean ex. pipe.
D02	P-FSR188-14	608	0.864	45+90	36.22533	-82.398146		UNK.	UNK.	24 IN	34 LF	1	2	Remove & replace ex. pipe; Place 20 LF riprap at outfall.
D02	P-FSR188-15	609	0.93	49+20	36.22579	-82.397397		UNK.	UNK.	24 IN	34 LF	1	2	Remove & replace ex. pipe; Place 15 LF riprap at outfall.
D02	P-FSR188-16	610	1.025	54+15	36.22601	-82.396119		UNK.	UNK.	24 IN	34 LF	3	2	Remove & replace ex. pipe; Cut new 40 LF ditch across old entrance.
D02	P-FSR188-17	611	1.077	56+95	36.22647	-82.395344		UNK.	UNK.			3	2	Clean ex. pipe; Place 20 LF riprap at outfall.
D03	P-FSR188-18	612	1.136	60+15	36.2271	-82.394587		UNK.	UNK.			3	2	Clean ex. pipe; Remove ex. inlet headwall; Use riprap at outfall; Reshape inlet area.
D03	P-FSR188-19	613	1.182	62+60	36.2276	-82.394053		UNK.	UNK.			3		Clean ex. pipe.
D03	P-FSR188-20	614	1.26	66+90	36.22842	-82.393007		UNK.	UNK.			3	2	Clean ex. pipe; Place 20 LF riprap at outfall.
D03	P-FSR188-21	615	1.30	69+20	36.22858	-82.392327		UNK.	UNK.			3	2	Clean ex. pipe; Place 15 LF riprap at outfall
D03	P-FSR188-22	616	1.311	70+10	36.22849	-82.392042		48 IN	36 LF	60 IN	70 LF	3	4	Remove & replace ex. pipe; Place 15' x 10' riprap at outfall; Place riprap up sideslope 20' W x 12' H. Place 70' length riprap apron up bank
D03	P-FSR188-23	618	1.35	71+70	36.22806	-82.391827		UNK.	UNK.			3	2	Clean ex. pipe; Place 10 LF riprap at outfall. Recondition ditch 50' to next culvert
D03	P-FSR188-24	619	1.392	74+10	36.22769	-82.391156		UNK.	UNK.			3		Clean ex. pipe; Remove debris around outlet.
D03	P-FSR188-25	620	1.45	76+60	36.22754	-82.390368		UNK.	UNK.	24 IN	36 LF	1	2	Remove & replace ex. pipe; Remove ex. inlet headwall; Use riprap at outfall; Reshape inlet area.
D03	P-FSR188-26	621	1.50	79+10	36.22781	-82.389572		UNK.	UNK.	24 IN	30 LF	1	2	Remove & replace ex. pipe; Remove ex. inlet headwall; Use riprap at outfall; Reshape inlet area.

NOTES:

(A) *See Drainage Details sheet.*

(B) *Exact measurements were not taken for existing pipes. Average pipe length is approximately 24 feet.*

(C) *Place riprap at the outfall of all Type 1 and Type 2 pipe installations according to Detail E251-01 for pipes up to 48".*

(D) *Proposed pipe lengths are estimates from field measurements, but may need to be adjusted for field conditions and to comply with the drainage details. Submit lengths and location of all pipes for approval prior to ordering any pipe culvert materials.*

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

DRAINAGE SCHEDULE

BRIAR CREEK ROAD (FS 188)

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23 February 2026 11:44 AM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C14

SHEET NUMBER	CULVERT ID	LOCATION					ITEM NO.	EX. SIZE (DIA)	EX. LENGTH (FEET) (B)	PROP. SIZE (DIA.)	PROP. LENGTH (FEET)	DETAIL TYPE (A)	RIPRAP CLASS	REMARKS (C) (D)
		MASTER PIN		STATION	LAT.	LONG.								
D03	P-FSR188-27	622	1.57	82+75	36.22862	-82.388821		UNK.	UNK.	24 IN	32 LF	1	2	Remove & replace ex. pipe; Place 10 LF riprap at outfall.
D03	P-FSR188-28	623	1.63	85+80	36.22922	-82.388212		UNK.	UNK.	24 IN	42 LF	1	2	Remove & replace ex. pipe; Remove ex. inlet headwall; Use riprap at outfall; Reshape inlet area.
D03	P-FSR188-29	624	1.68	88+60	36.22933	-82.387364		UNK.	UNK.	24 IN	34 LF	1	2	Remove & replace ex. pipe; Remove ex. inlet headwall; Use riprap at outfall; Reshape inlet area.
D04	P-FSR188-30	626	1.75	93+05	36.22964	-82.386142		Large Dia.	100 LF				4	Clean ex. pipe.
D04	P-FSR188-31	627	1.94	102+45	36.22915	-82.383249		UNK.	UNK.			3	2	Clean ex. pipe; Place 15' x 20' riprap at outfall.
D04	P-FSR188-32	628	1.97	104+50	36.22923	-82.382602		UNK.	UNK.	24 IN	32 LF	1	2	Remove & replace ex. pipe; Remove ex. inlet headwall; Use riprap at outfall; Reshape inlet area.
D04	P-FSR188-33	629	2.01	107+10	36.22943	-82.381764		UNK.	UNK.			3		Clean ex. pipe.
D04	P-FSR188-34	630	2.07	110+25	36.22964	-82.380739		UNK.	UNK.	24 IN	30 LF	1	2	Remove & replace ex. pipe.
D04	P-FSR188-35	631	0	113+05	36.22974	-82.379788		UNK.	UNK.	24 IN	30 LF	1	2	Remove & replace ex. pipe; Construct cutoff berm at inlet; Place 20 LF riprap at outfall.
D04	P-FSR188-36	634	2.24	118+65	36.22952	-82.378128		UNK.	UNK.			3		Clean ex. pipe.
D05	P-FSR188-37	636	2.35	124+25	36.22895	-82.37646		UNK.	UNK.			3		Clean ex. pipe.
D05	P-FSR188-38	637	2.396	126+70	36.22889	-82.375617		UNK.	UNK.	24 IN	28 LF	1	2	Remove & replace ex. pipe.
D05	P-FSR188-39	638	2.43	127+90	36.22894	-82.37527		UNK.	UNK.			3		Clean ex. pipe.
D05	P-FSR188-40	640	2.56	136+30	36.22883	-82.372824		N/A	N/A	24 IN	30 LF	2	2	Install new pipe; Construct cutoff berm at inlet.
D05	P-FSR188-41	641	2.62	138+65	36.22899	-82.37205		30 IN	26 LF	30 IN	32 LF	1	3	Remove & replace ex. pipe.
D05	P-FSR188-42	642	2.62	139+30	36.22913	-82.371894		UNK.	UNK.			3		Clean ex. pipe.
D05	P-FSR188-43	643	2.75	145+70	36.22923	-82.369842		42 IN	UNK.	54 IN	50 LF	1	4	Remove & replace ex. pipe. Outlet energy dissipater design will be dependent on field conditions.
D06	P-FSR188-44	645	2.92	154+30	36.22957	-82.367242		54 IN	50 LF	54 IN	50 LF	1	4	Remove & replace ex. pipe; Lower inlet invert if needed for cover. Outlet energy dissipater design will be dependent on field conditions.
D06	P-FSR188-45	647	3.04	160+75	36.23093	-82.367087		UNK.	UNK.	42 IN	50 LF	1	4	Remove & replace ex. pipe. Recondition dip
D07	P-FSR188-46	651	3.50	185+75	36.22933	-82.360937		UNK.	UNK.	24 IN	40 LF	1	2	Remove & replace ex. pipe; Increase skew of pipe to avoid trees.
D07	P-FSR188-47	652	3.51	189+90	36.22951	-82.360953		UNK.	UNK.			3		Clean ex. pipe.
D08	P-FSR188-48	655	3.96	209+95	36.22907	-82.357671		UNK.	UNK.	24 IN	32 LF	1	2	Remove & replace ex. pipe. Recondition outlet ditch 25 LF
D09	P-FSR188-49	657	4.582	243+65	36.22261	-82.365241		UNK.	UNK.			3		Clean ex. pipe.

NOTES:

(A) *See Drainage Details sheet.*

(B) *Exact measurements were not taken for existing pipes. Average pipe length is approximately 24 feet.*

(C) *Place riprap at the outfall of all Type 1 and Type 2 pipe installations according to Detail E251-01 for pipes up to 48".*

(D) *Proposed pipe lengths are estimates from field measurements, but may need to be adjusted for field conditions and to comply with the drainage details. Submit lengths and location of all pipes for approval prior to ordering any pipe culvert materials.*

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

DRAINAGE SCHEDULE

BRIAR CREEK ROAD (FS 188)

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5 February 2026 3:07 PM

SHEET NUMBER	CULVERT ID	LOCATION					ITEM NO.	EX. SIZE (DIA.)	EX. LENGTH (FEET) (B)	PROP. SIZE (DIA.)	PROP. LENGTH (FEET)	DETAIL (A) TYPE	RIPRAP CLASS	REMARKS (C) (D)
		MASTER PIN	MILE POST	STATION	LAT.	LONG.								
D14	P-FSR54-1	589	0	1+01	35.95372	-82.90078		UNK.	UNK.	72 IN	36 LF			Remove & replace ex. pipe. Place 15 CY of fill on inside of radius.
D13	P-FSR54-2	590	4.81	0+80	35.94700	-82.89713		15 IN	UNK.	24 IN	30 LF			Install new 24" pipe
D13	P-FSR54-3	590	4.81	1+36	35.94714	-82.89709		15 IN	58 LF					Backfill existing 15" CMP w/ non-shrink grout

NOTES:

(A) *See Drainage Details sheet.*

(B) *Exact measurements were not taken for existing pipes. Average pipe length is approximately 24 feet.*

(C) *Place riprap at the outfall of all Type 1 and Type 2 pipe installations according to Detail E251-01 for pipes up to 48".*

(D) *Proposed pipe lengths are estimates from field measurements, but may need to be adjusted for field conditions and to comply with the drainage details. Submit lengths and location of all pipes for approval prior to ordering any pipe culvert materials.*

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5 February 2026 3:07 PM

NO.	DATE	BY	REVISIONS

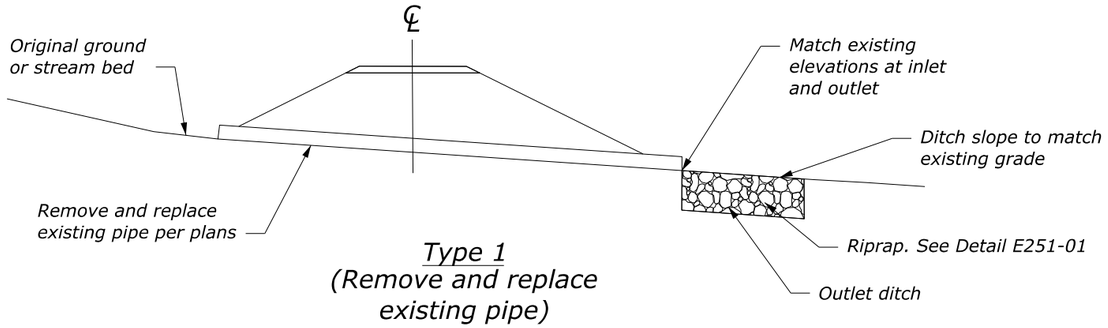
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

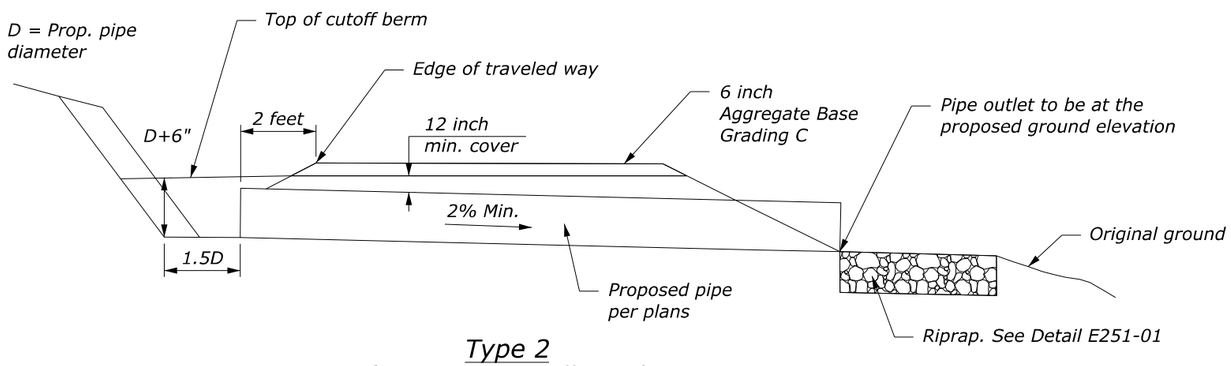
DRAINAGE SCHEDULE

PAINT MOUNTAIN (FS 54)

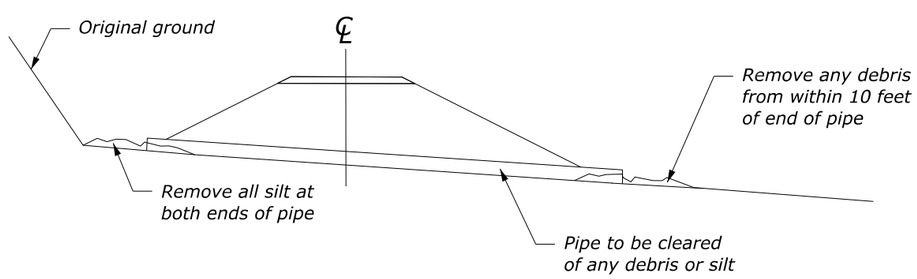
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	C16



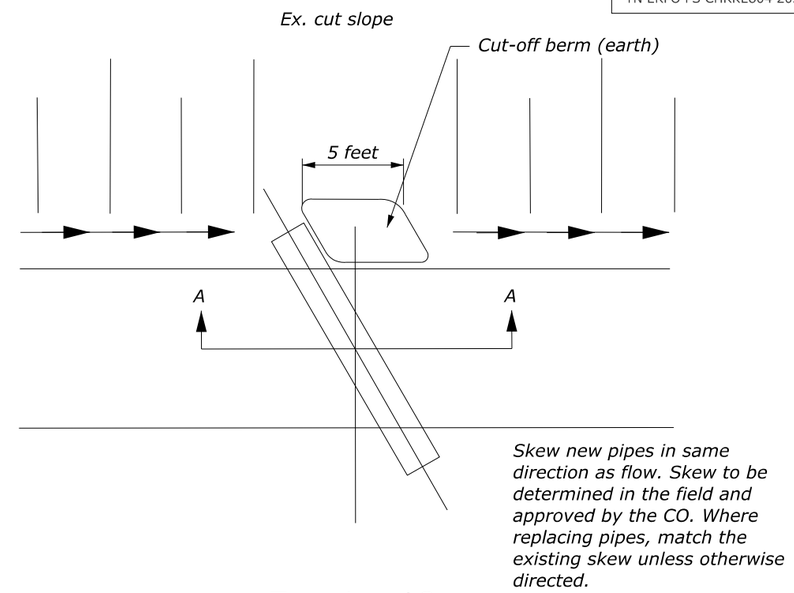
Type 1
(Remove and replace existing pipe)



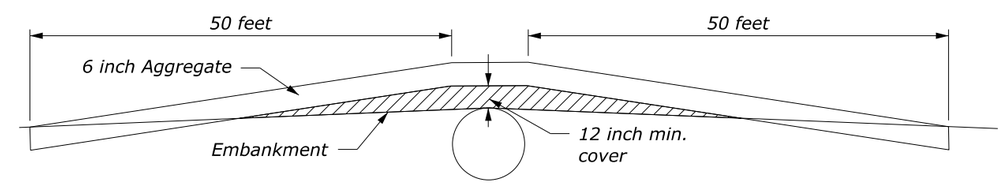
Type 2
(New pipe installation)



Type 3
(Clean pipe only)

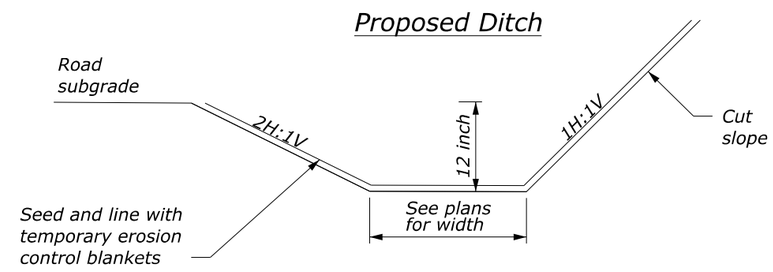


Type 1 and 2



Note: In locations where a pipe size is increasing, drop the inlet elevation and set the pipe at the 2% minimum slope to meet the minimum cover requirement. If that is not possible, then the road grade may need to be increased. When this is necessary, taper 50 feet each side as shown above.

Proposed Ditch



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

NO SCALE

CHEROKEE NATIONAL FOREST

DRAINAGE DETAILS

BRIAR CREEK ROAD (FS 188)
PAINT MOUNTAIN ROAD (FS 54)

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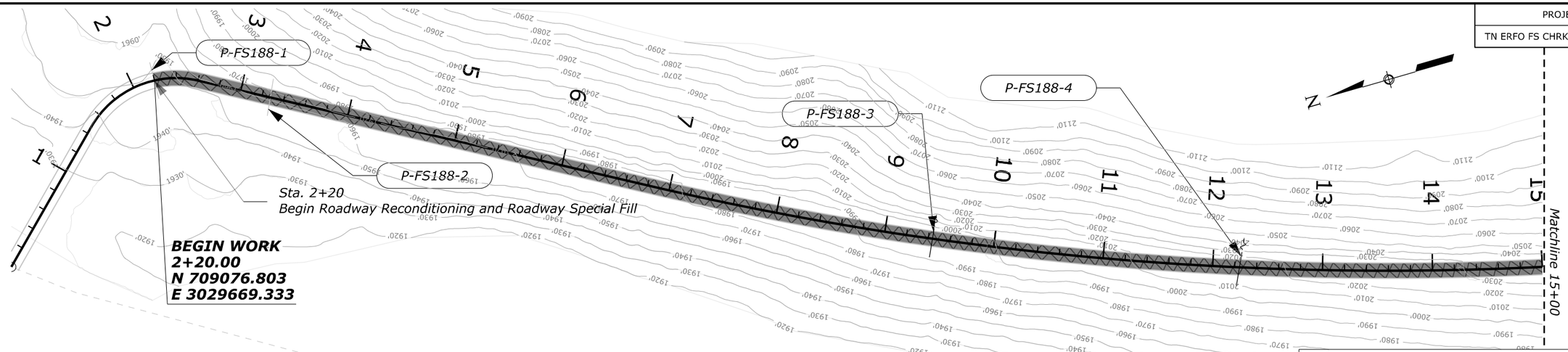
2 February 2026 10:16 AM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D01



Baseline GIS Data		
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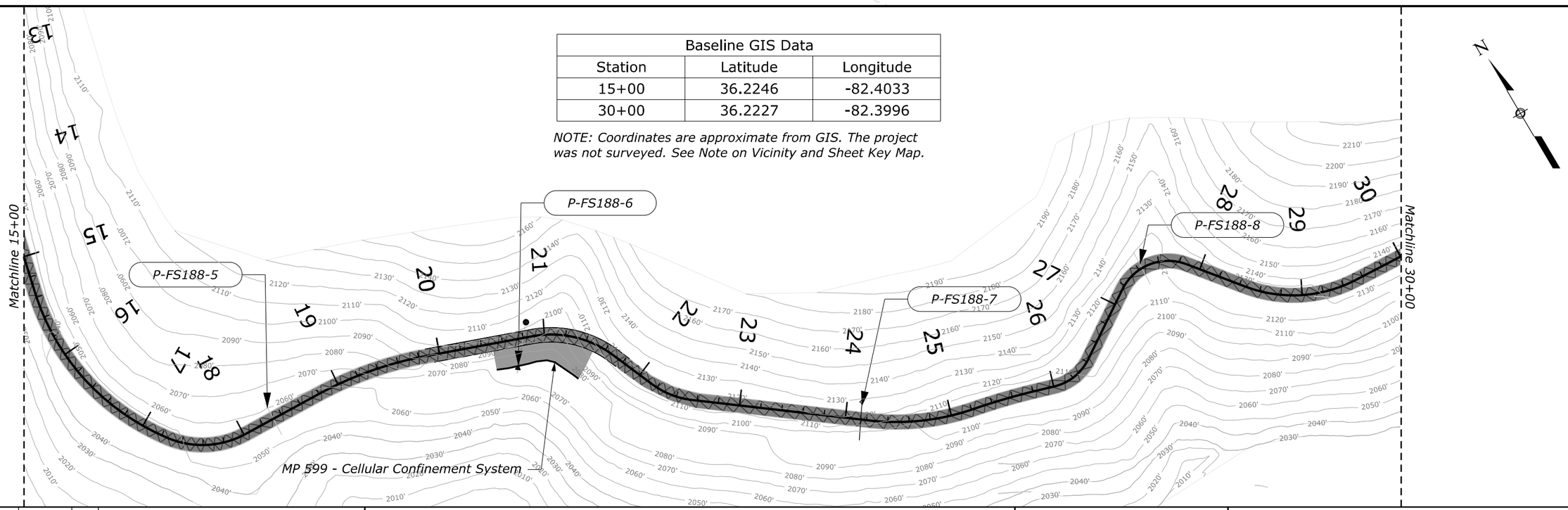
2+20	36.2277	-82.4014
15+00	36.2246	-82.4033

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.

Baseline GIS Data		
Station	Latitude	Longitude
15+00	36.2246	-82.4033
30+00	36.2227	-82.3996

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
119+99 to 135+12

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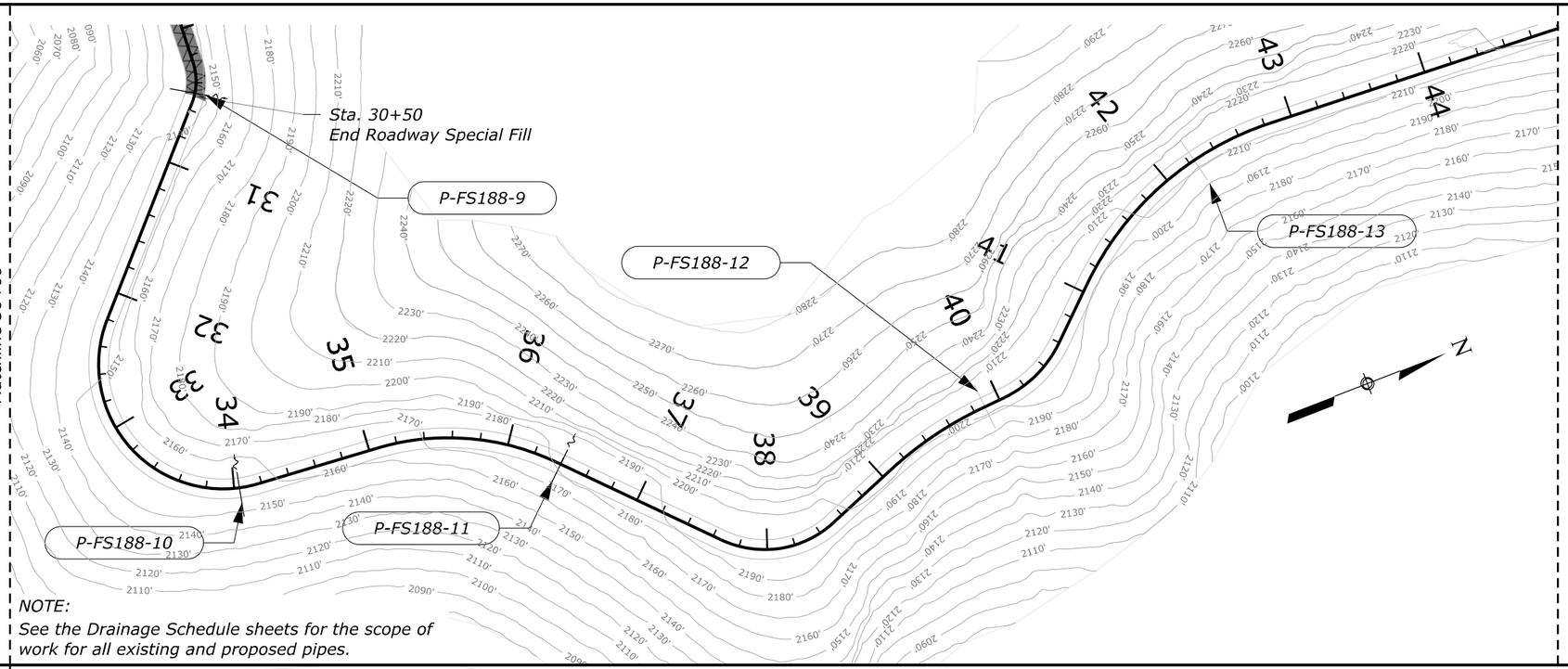
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D02



NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.

Baseline GIS Data		
Station	Latitude	Longitude
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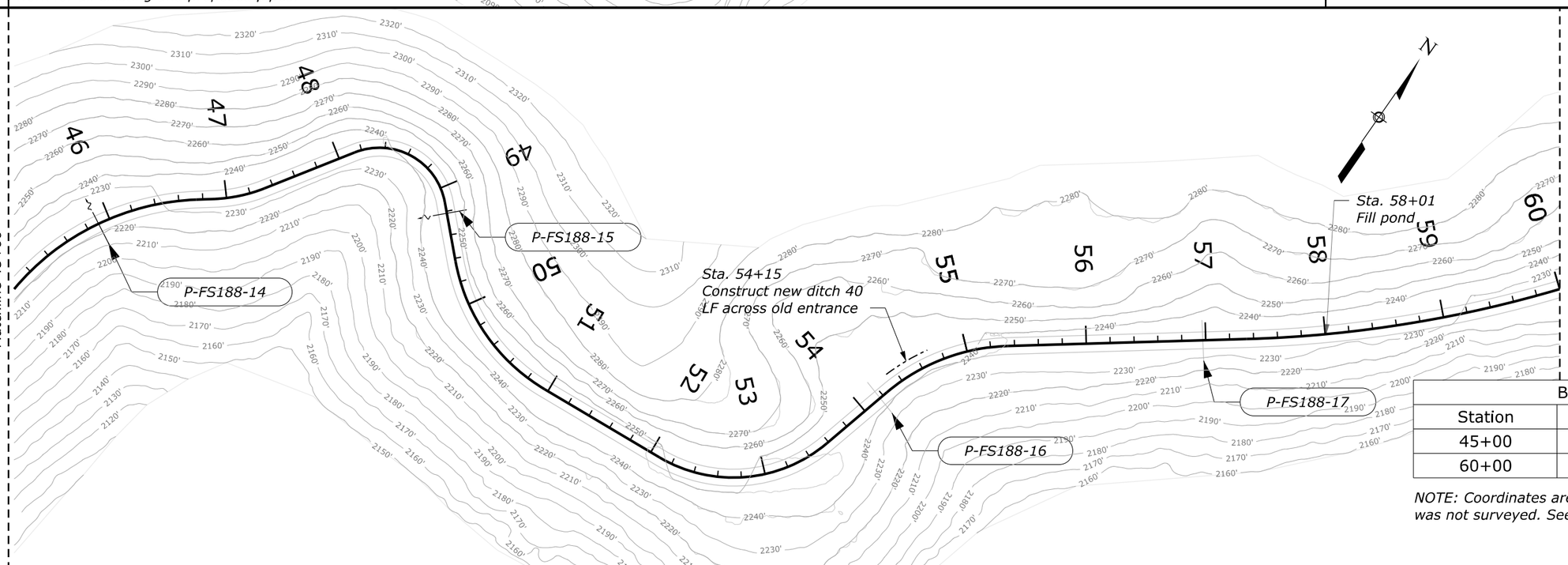
45+00	36.2251	-82.3983

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.



Baseline GIS Data		
Station	Latitude	Longitude
45+00	36.2251	-82.3983
60+00	36.2271	-82.3946

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

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5 February 2026 3:12 PM

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

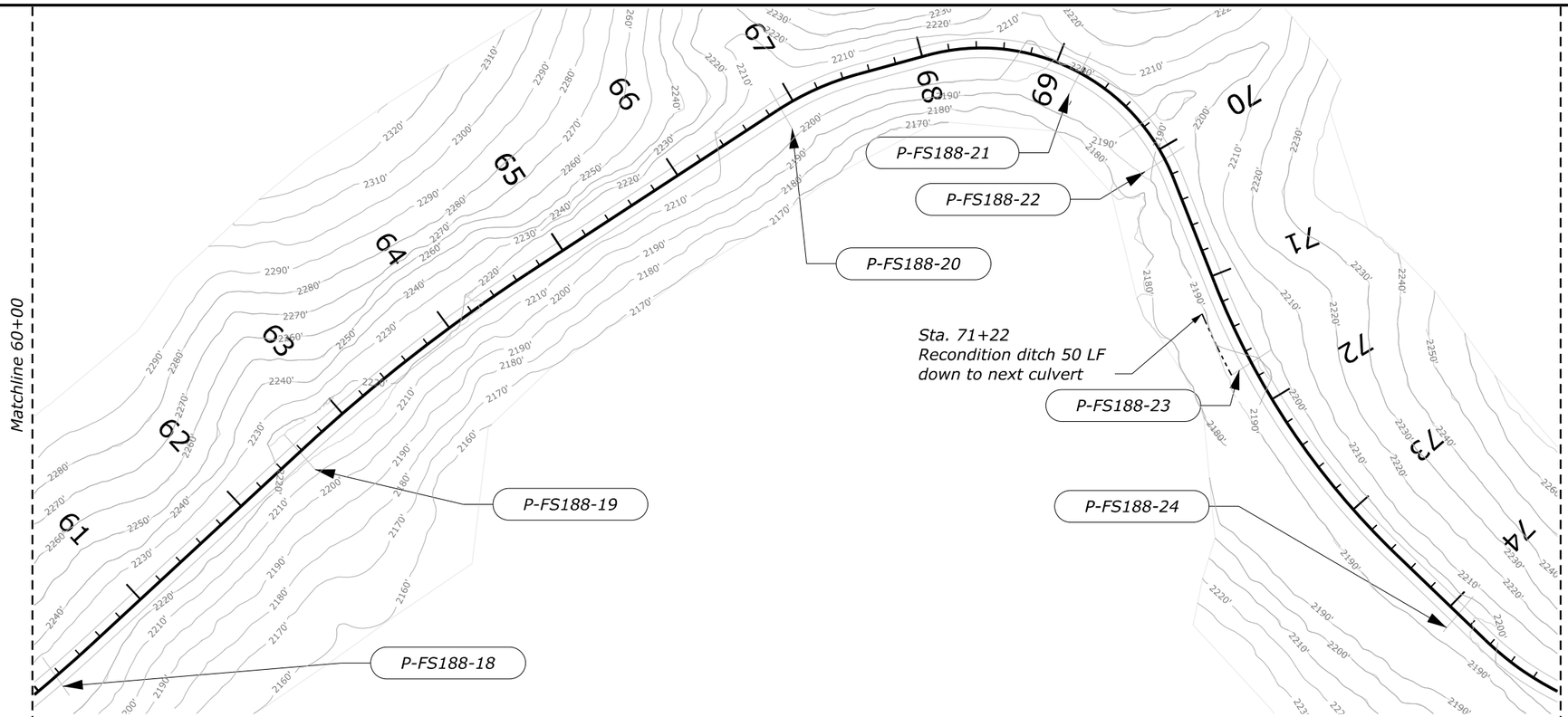
0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
30+00 to 60+00

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D03



NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.

Baseline GIS Data		
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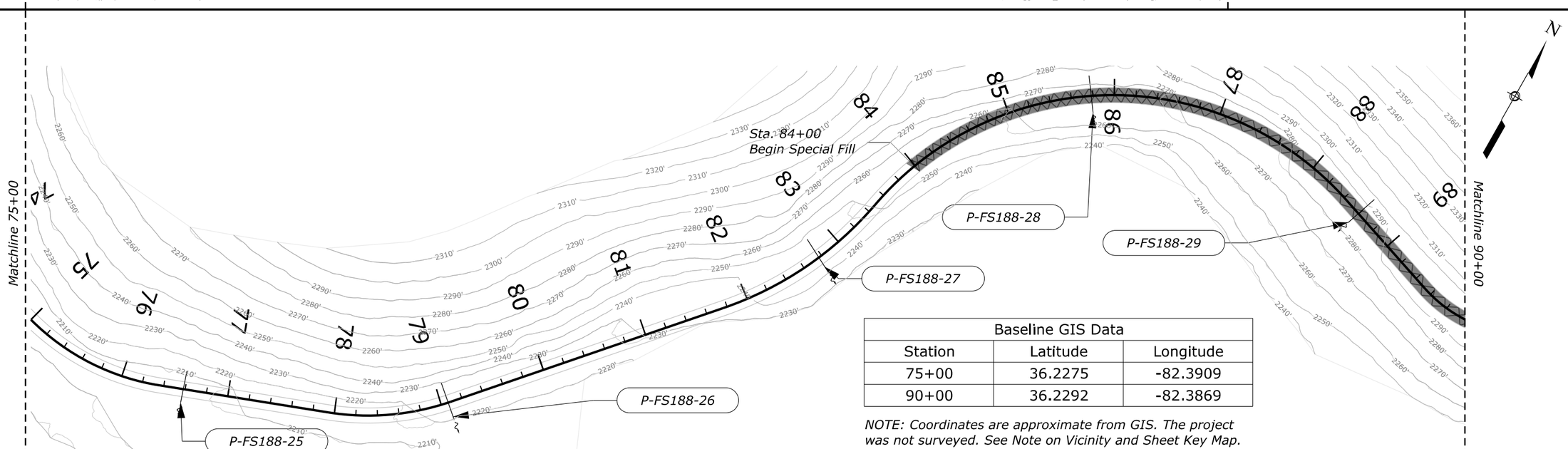
75+00	36.2275	-82.3909

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.



Baseline GIS Data		
Station	Latitude	Longitude
75+00	36.2275	-82.3909
90+00	36.2292	-82.3869

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
60+00 to 90+00

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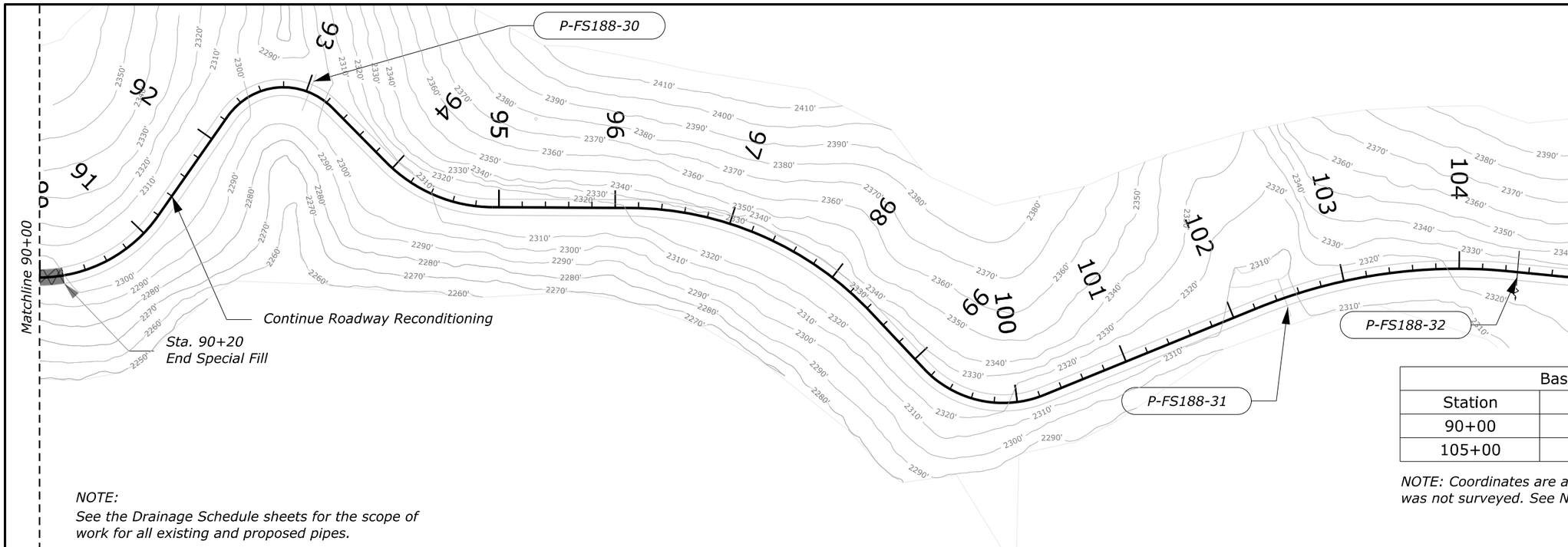
5 February 2026 3:13 PM

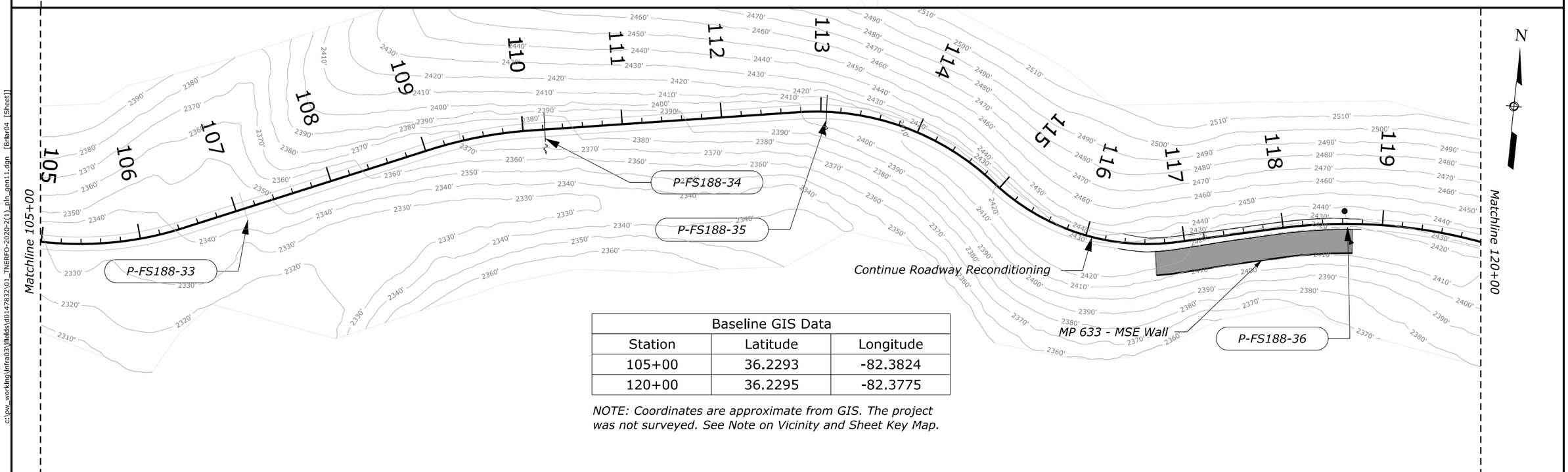
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D04



Baseline GIS Data		
Station	Latitude	Longitude
90+00	36.2292	-82.3869
105+00	36.2293	-82.3824

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.



Baseline GIS Data		
Station	Latitude	Longitude
105+00	36.2293	-82.3824
120+00	36.2295	-82.3775

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
90+00 to 120+00

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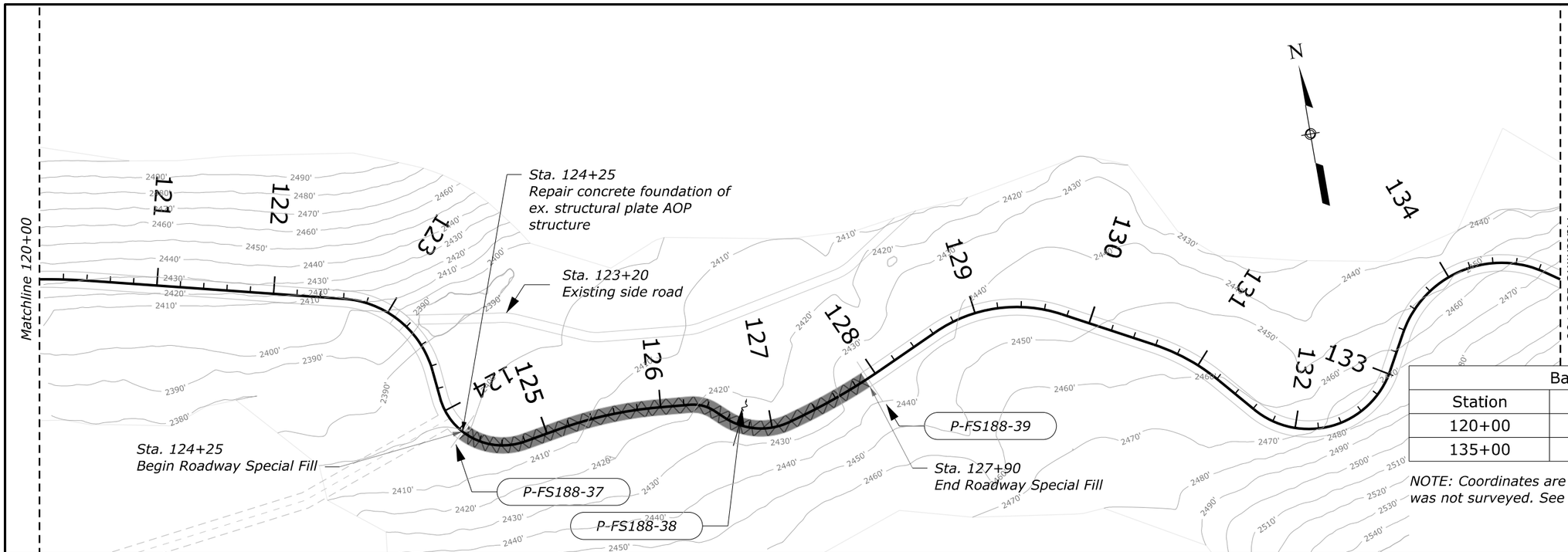
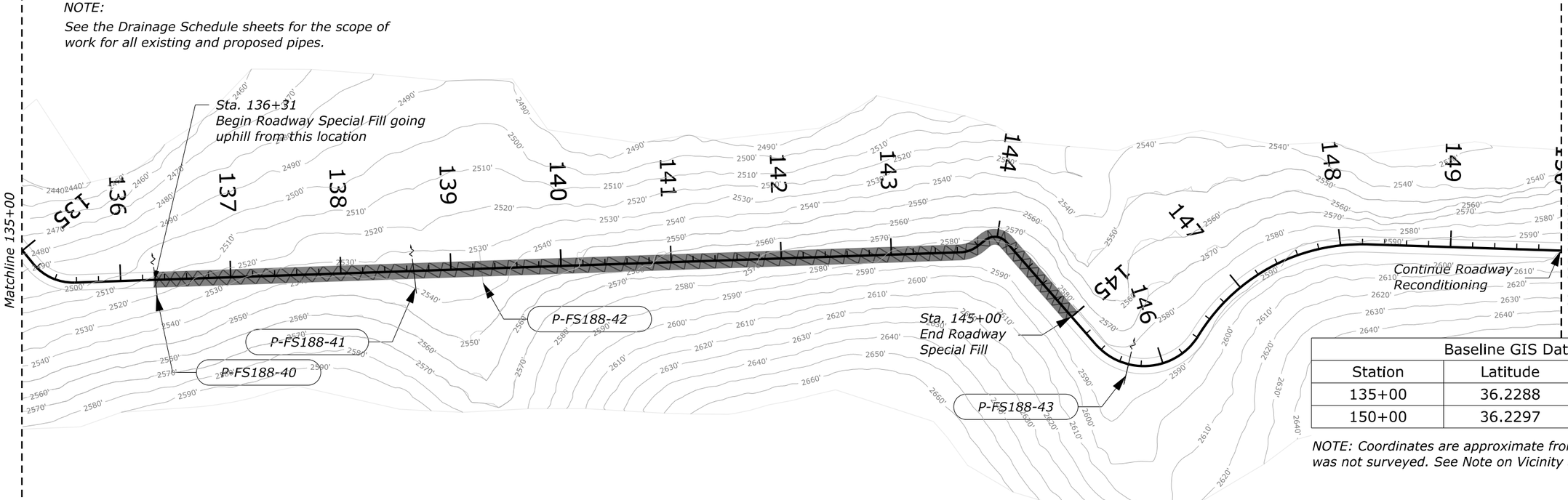
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D05



Baseline GIS Data		
Station	Latitude	Longitude
120+00	36.2295	-82.3775
135+00	36.2288	-82.3732

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.



Baseline GIS Data		
Station	Latitude	Longitude
135+00	36.2288	-82.3732
150+00	36.2297	-82.3686

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

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NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

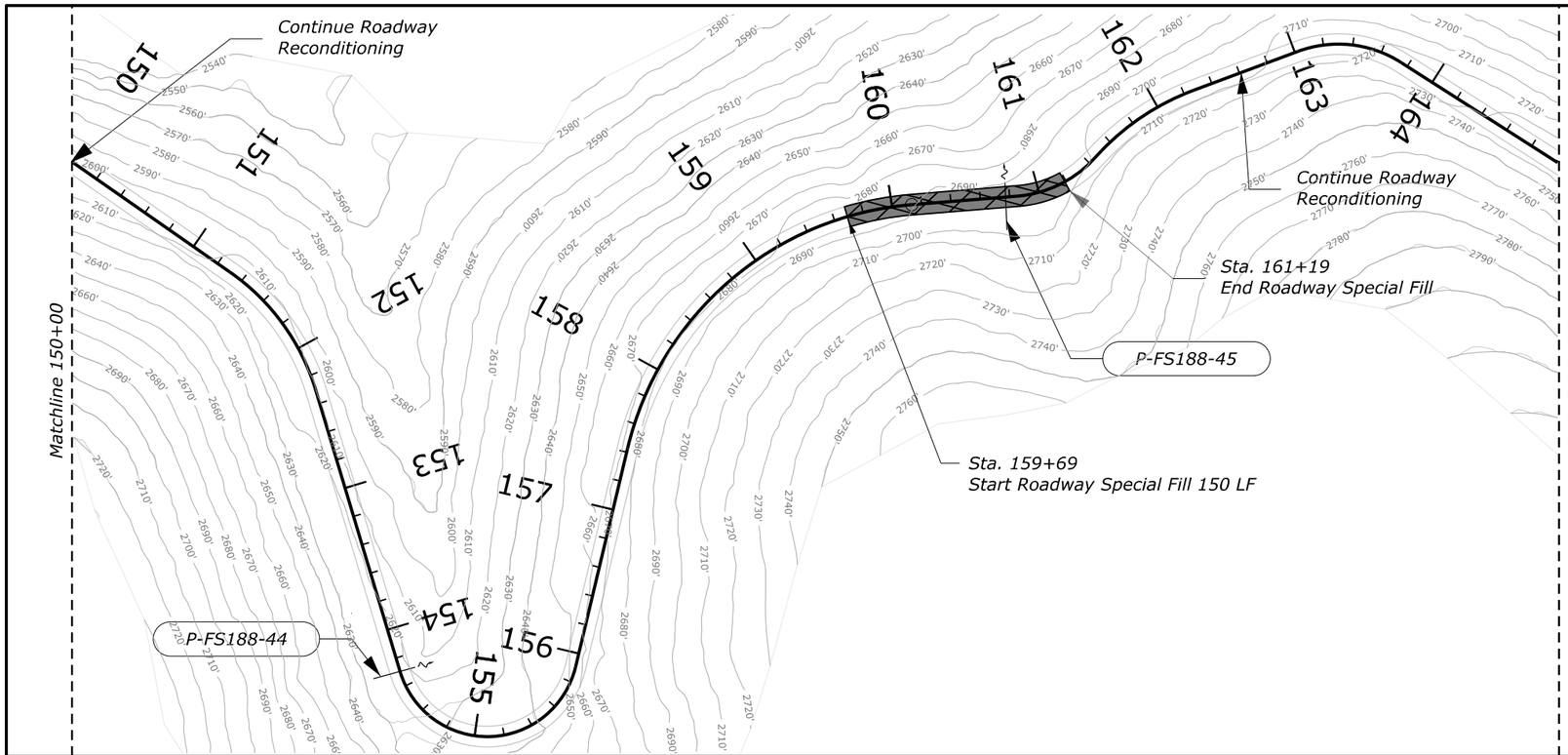
0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
120+00 to 150+00

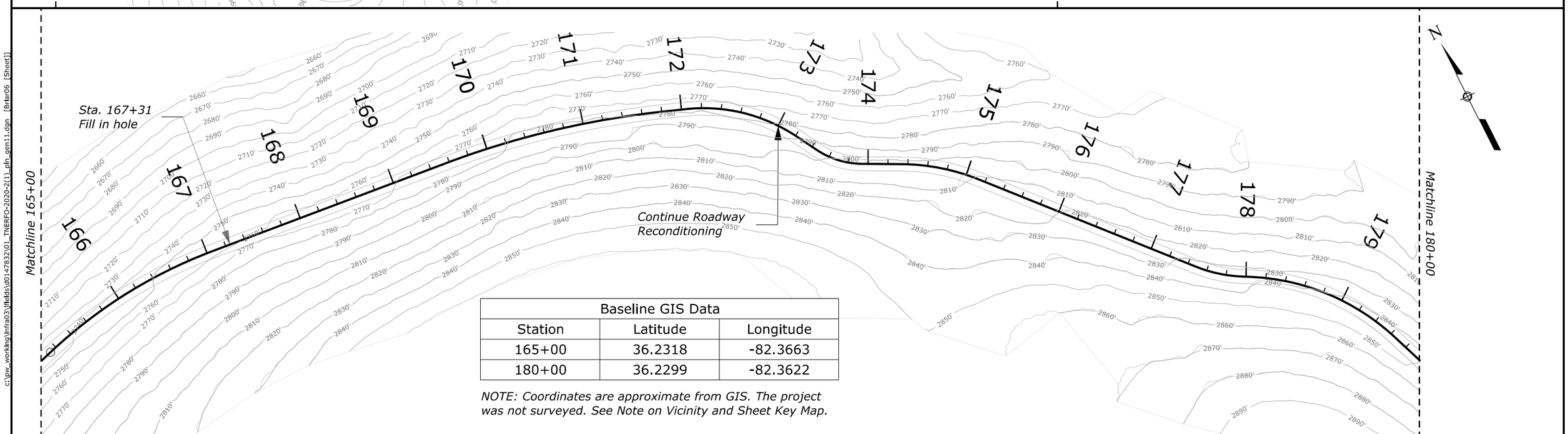
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D06



NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.

Baseline GIS Data		
Station	Latitude	Longitude
150+00	36.2297	-82.3686
165+00	36.2318	-82.3663

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.



Baseline GIS Data		
Station	Latitude	Longitude
165+00	36.2318	-82.3663
180+00	36.2299	-82.3622

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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OFFICE OF FEDERAL LANDS HIGHWAY

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Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
150+00 to 180+00

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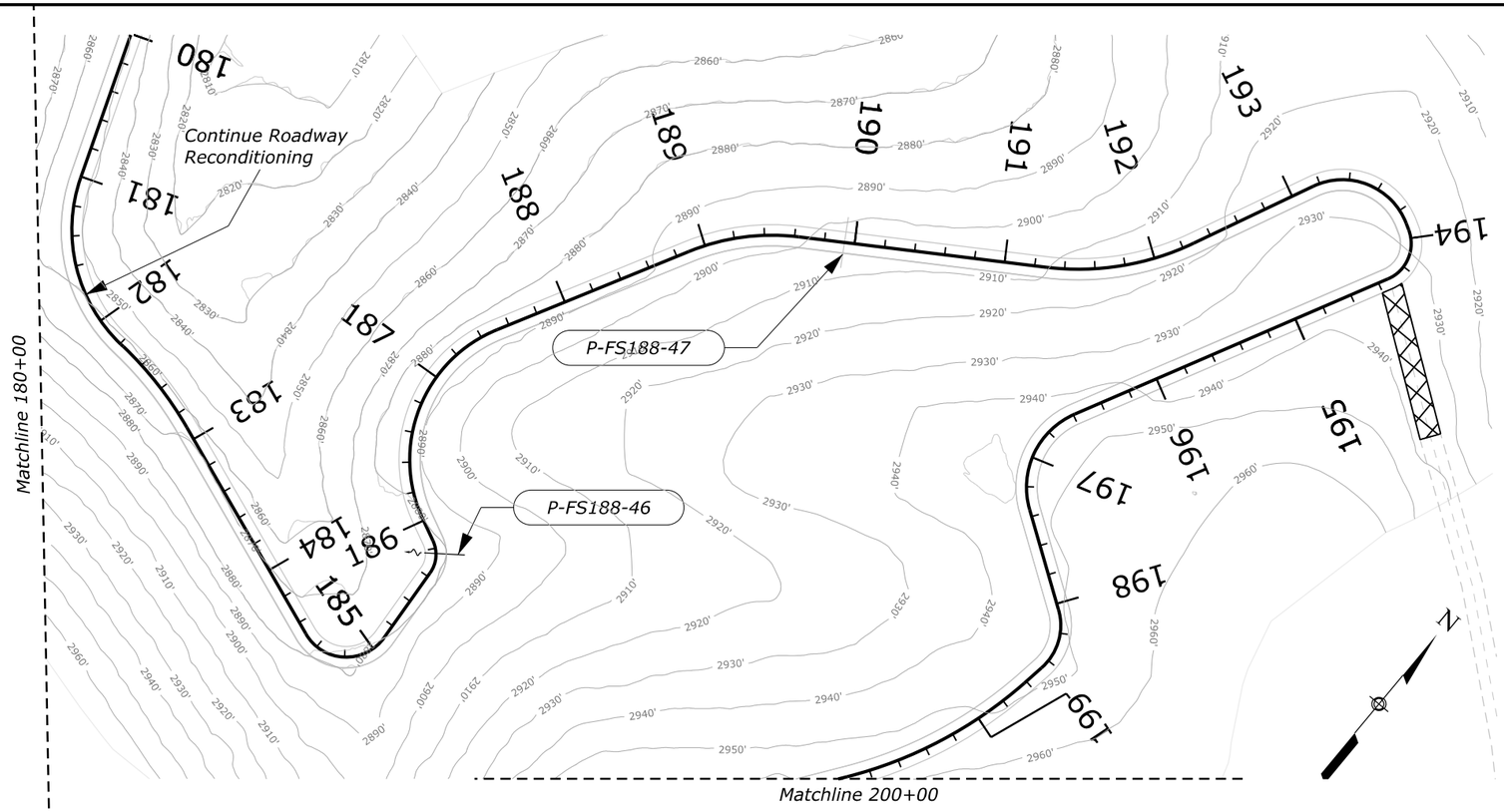
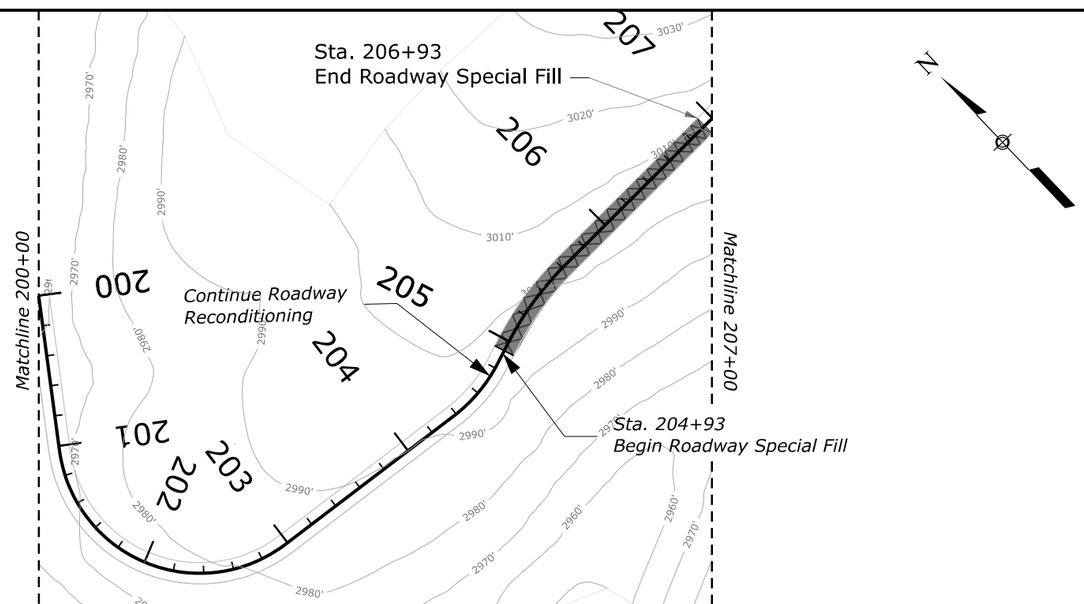
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D07



NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.

Baseline GIS Data		
Station	Latitude	Longitude
180+00	36.2299	-82.3622
200+00	36.2296	-82.3599

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.



Baseline GIS Data		
Station	Latitude	Longitude
200+00	36.2296	-82.3599
207+00	36.2290	-82.3586

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
180+00 to 207+00

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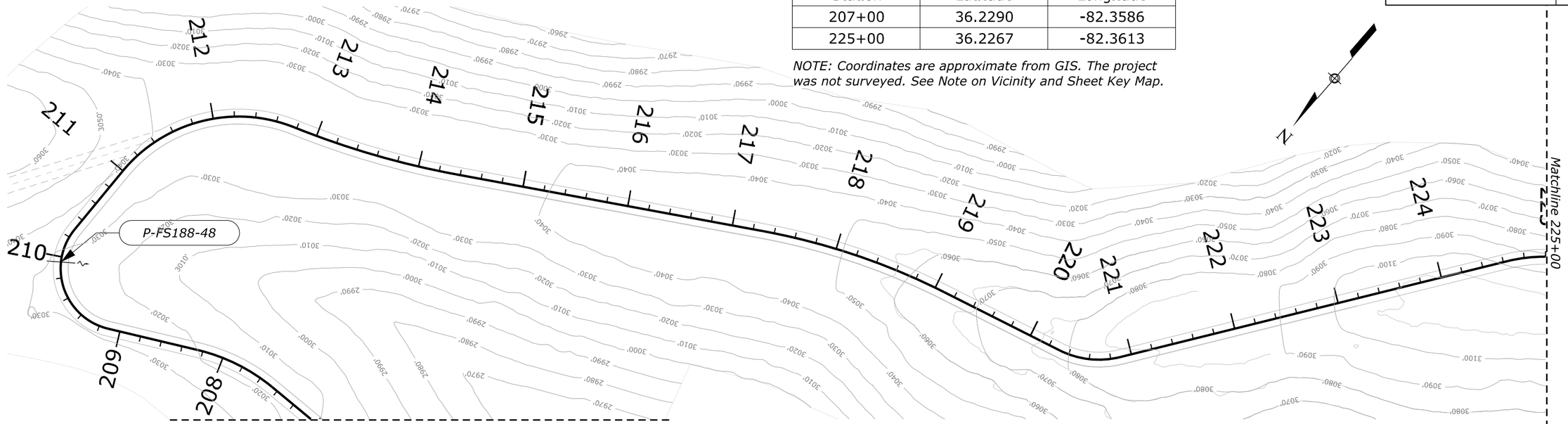
5 February 2026 3:14 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D08

Baseline GIS Data		
Station	Latitude	Longitude
207+00	36.2290	-82.3586
225+00	36.2267	-82.3613

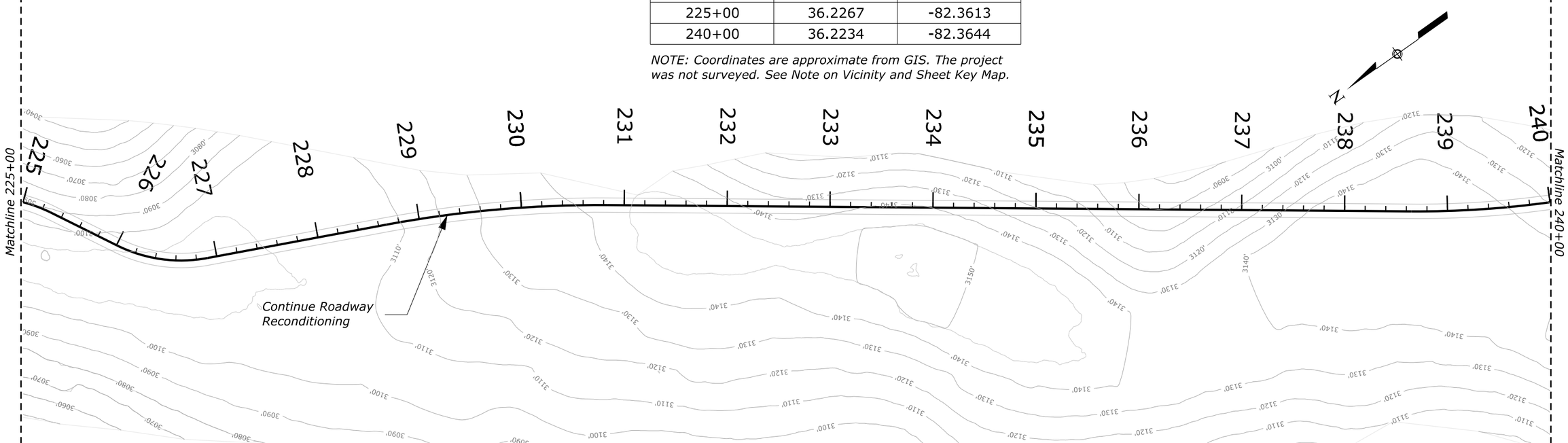
NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.



NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.

Baseline GIS Data		
Station	Latitude	Longitude
225+00	36.2267	-82.3613
240+00	36.2234	-82.3644

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
207+00 to 240+00

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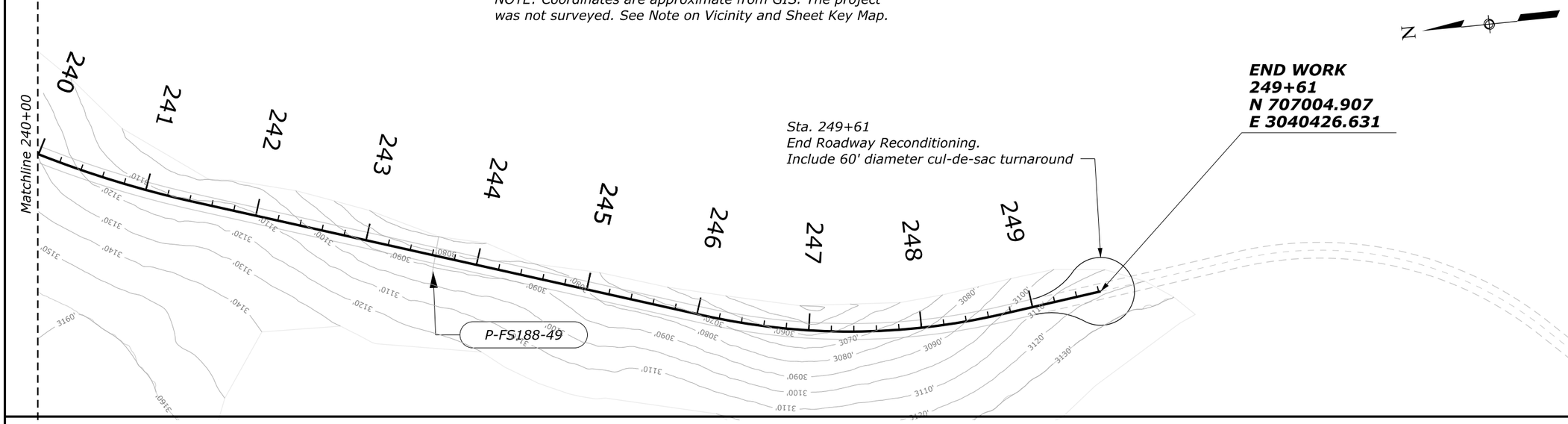
NOTE:
See the Drainage Schedule sheets for the scope of work for all existing and proposed pipes.

Baseline GIS Data		
Station	Latitude	Longitude
240+00	36.2234	-82.3644
249+61	36.2209	-82.3652

NOTE: Coordinates are approximate from GIS. The project was not surveyed. See Note on Vicinity and Sheet Key Map.

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D09



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN

BRIAR CREEK ROAD (FS 188)
240+00 to 249+61

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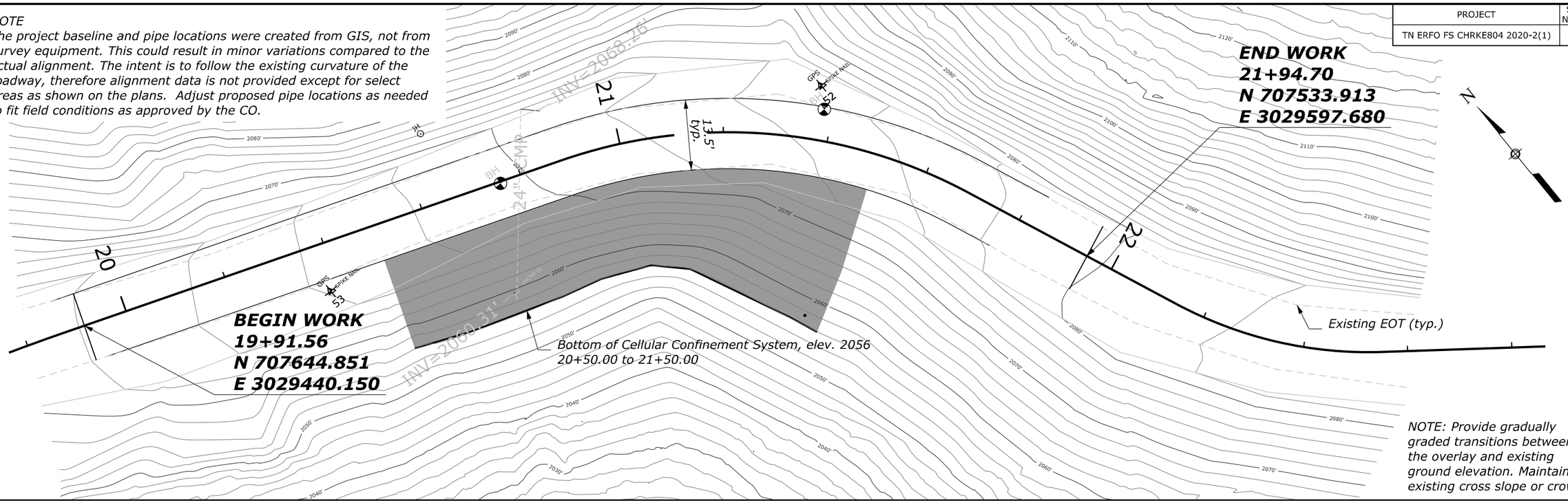
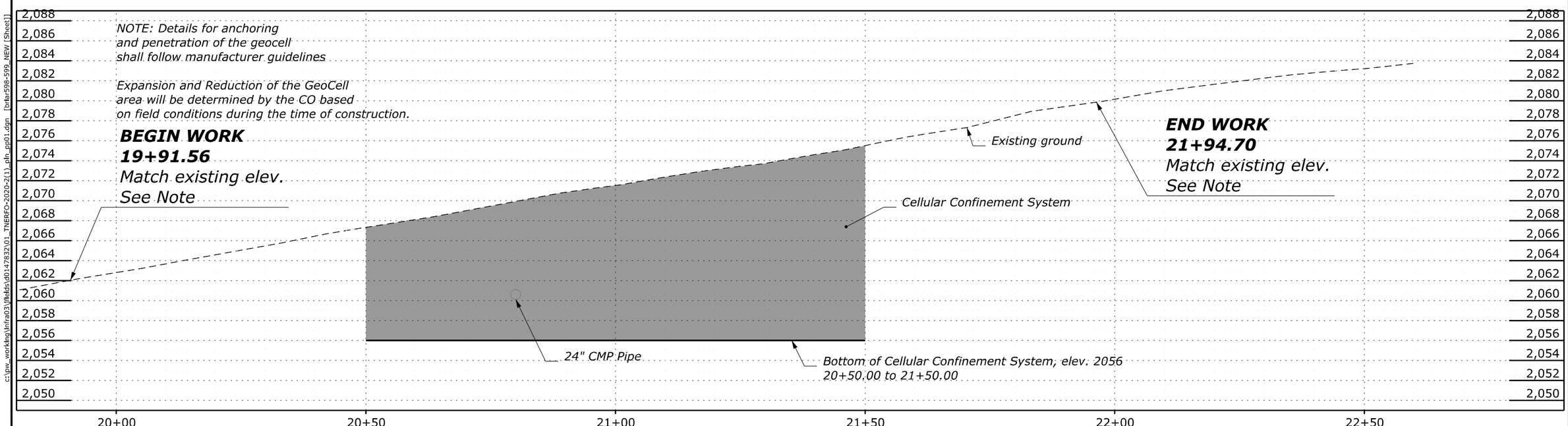
5 February 2026 3:14 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D10

NOTE
The project baseline and pipe locations were created from GIS, not from survey equipment. This could result in minor variations compared to the actual alignment. The intent is to follow the existing curvature of the roadway, therefore alignment data is not provided except for select areas as shown on the plans. Adjust proposed pipe locations as needed to fit field conditions as approved by the CO.



NOTE: Provide gradually graded transitions between the overlay and existing ground elevation. Maintain existing cross slope or crown.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 10 20
Scale in Feet

CHEROKEE NATIONAL FOREST
PLAN-PROFILE
BRIAR CREEK ROAD (FS 188)
MP 0.40
SCHEDULE A

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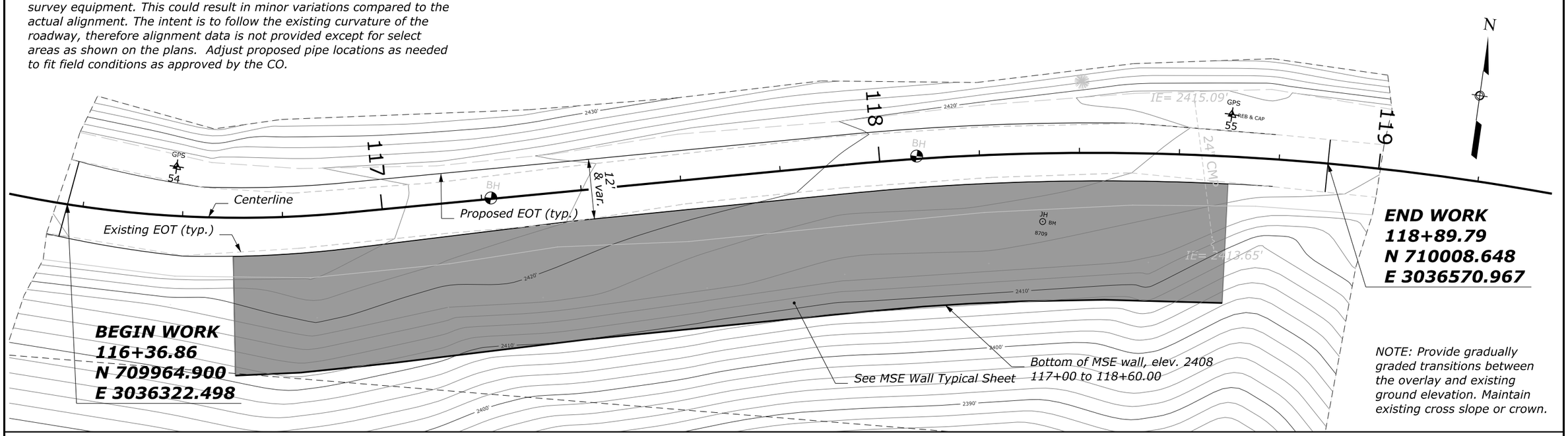
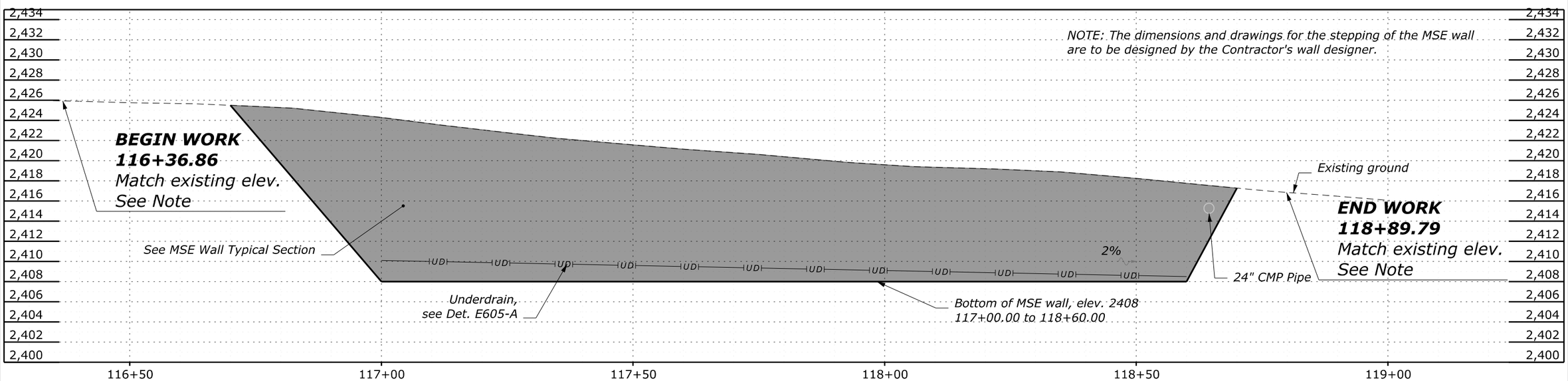
5 February 2026 3:32 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D11

NOTE
The project baseline and pipe locations were created from GIS, not from survey equipment. This could result in minor variations compared to the actual alignment. The intent is to follow the existing curvature of the roadway, therefore alignment data is not provided except for select areas as shown on the plans. Adjust proposed pipe locations as needed to fit field conditions as approved by the CO.



NOTE: Provide gradually graded transitions between the overlay and existing ground elevation. Maintain existing cross slope or crown.



NOTE: The dimensions and drawings for the stepping of the MSE wall are to be designed by the Contractor's wall designer.

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5 February 2026 3:31 PM

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

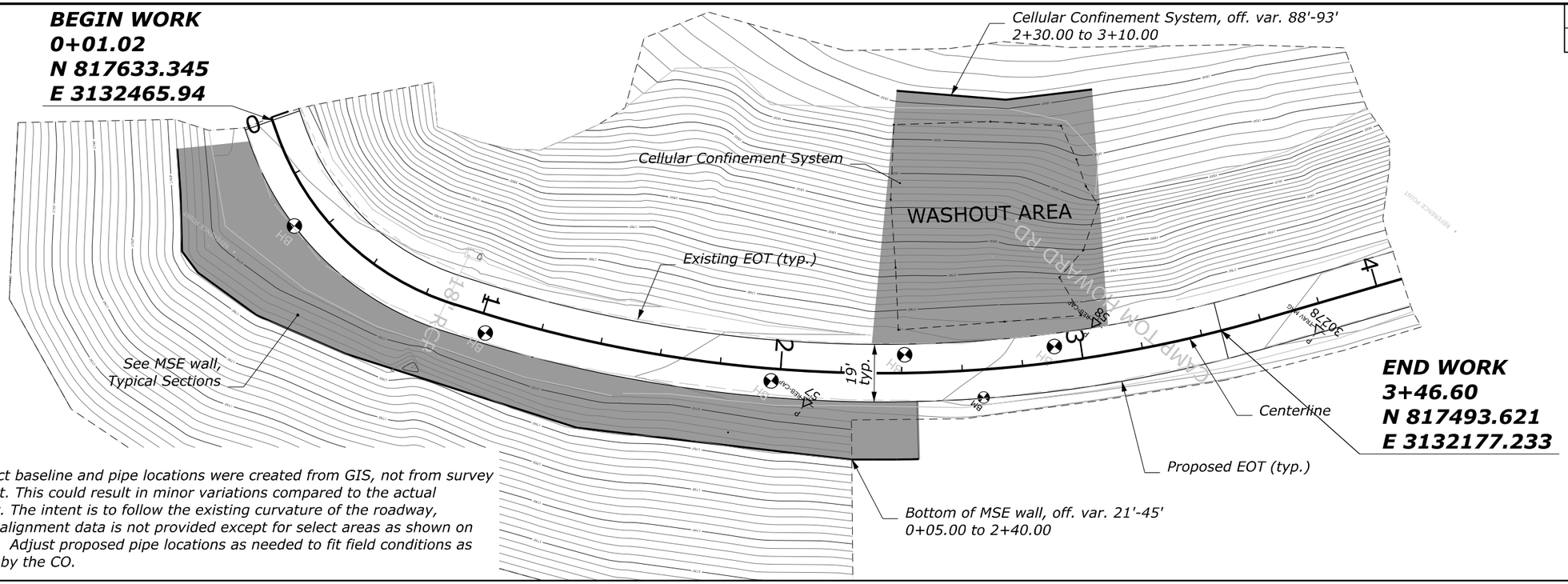
0 10 20
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN-PROFILE

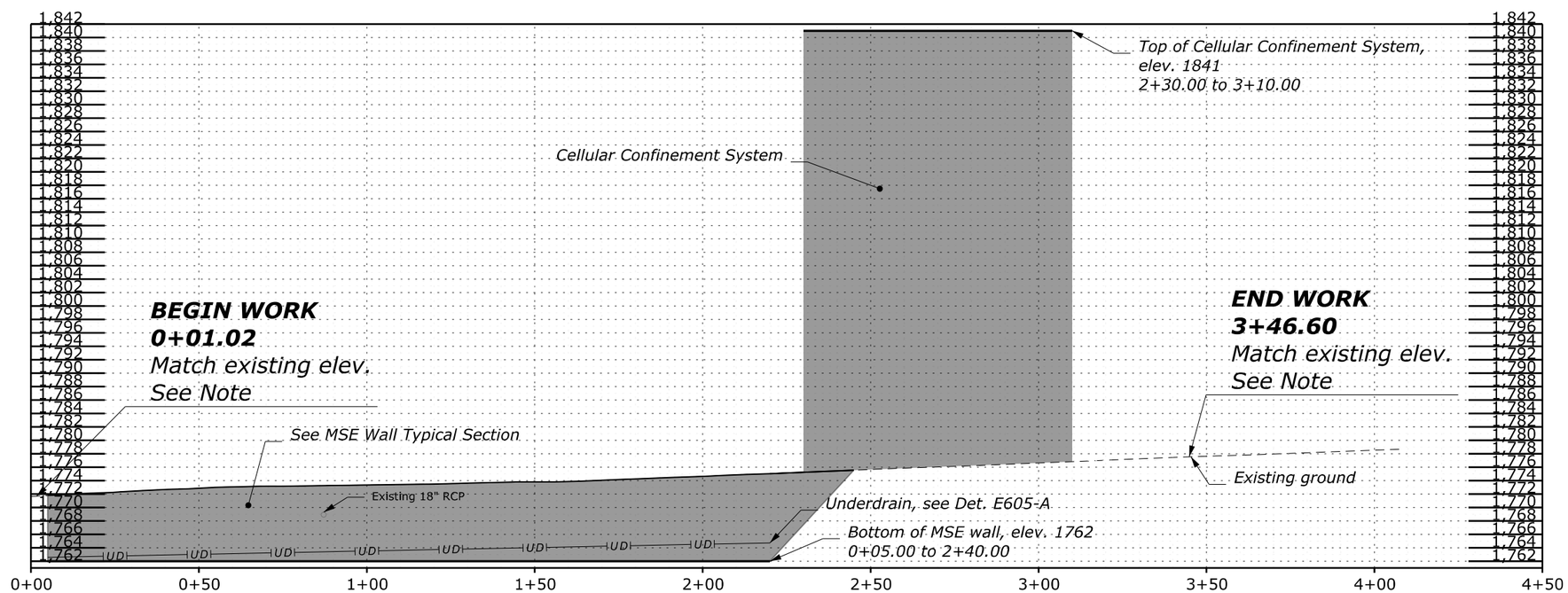
BRIAR CREEK ROAD (FS 188)
MP 2.20
SCHEDULE A

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D12



NOTE
The project baseline and pipe locations were created from GIS, not from survey equipment. This could result in minor variations compared to the actual alignment. The intent is to follow the existing curvature of the roadway, therefore alignment data is not provided except for select areas as shown on the plans. Adjust proposed pipe locations as needed to fit field conditions as approved by the CO.

NOTE: Provide gradually graded transitions between the overlay and existing ground elevation. Maintain existing cross slope or crown.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 20 40
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN-PROFILE

FLATWOODS ROAD (FS 87)
MP 5.78
SCHEDULE C

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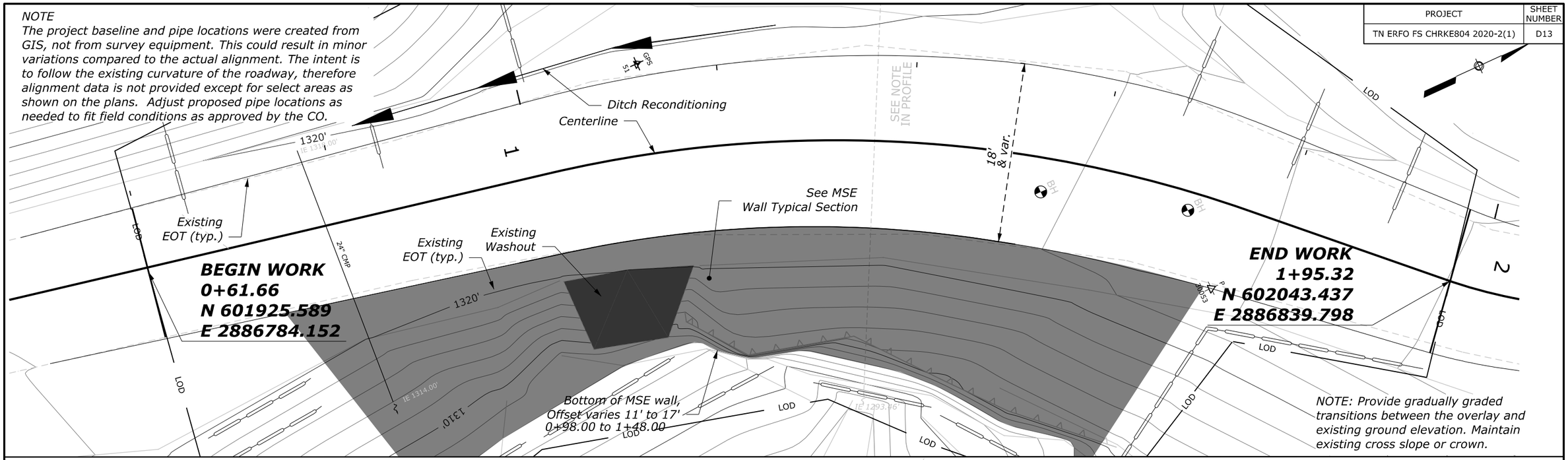
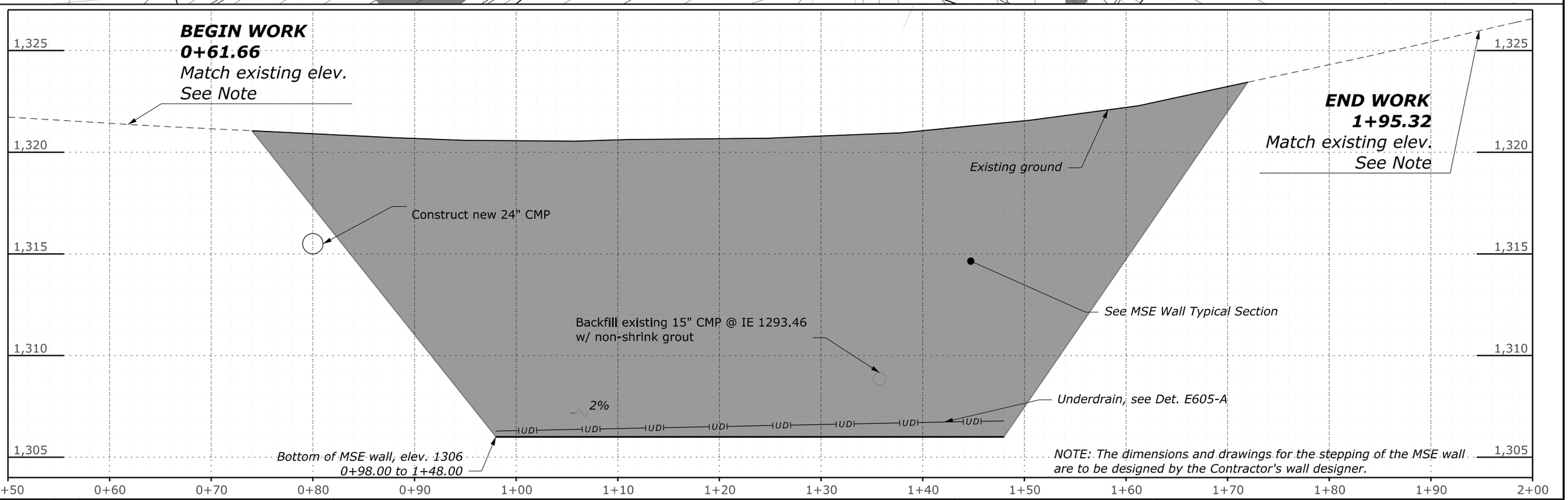
5 February 2026 3:32 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D13

NOTE
The project baseline and pipe locations were created from GIS, not from survey equipment. This could result in minor variations compared to the actual alignment. The intent is to follow the existing curvature of the roadway, therefore alignment data is not provided except for select areas as shown on the plans. Adjust proposed pipe locations as needed to fit field conditions as approved by the CO.





NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 5 10
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN-PROFILE

PAINT MOUNTAIN ROAD (FS 54)

MP 4.81
SCHEDULE B

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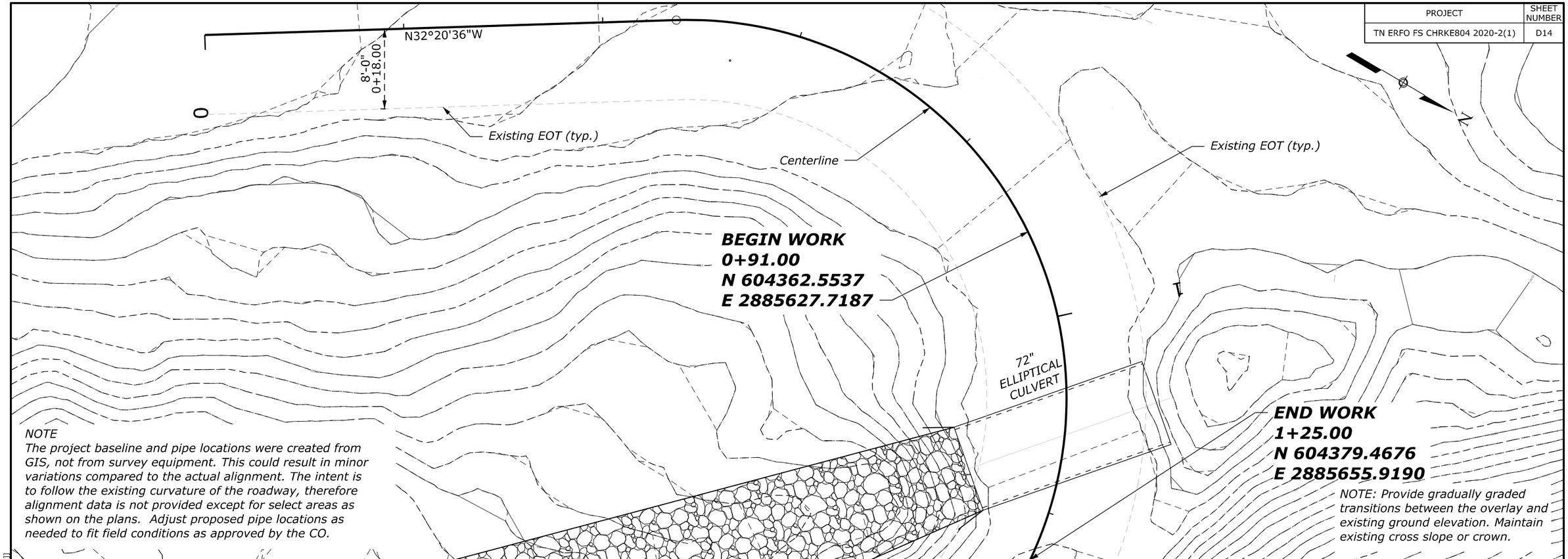
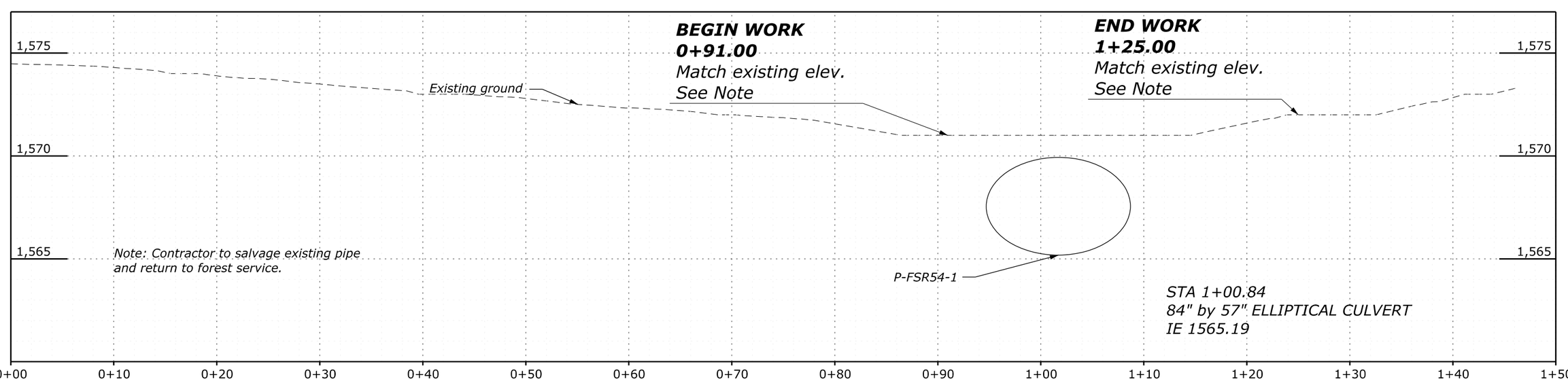
5 February 2026 3:29 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	D14



NOTE
The project baseline and pipe locations were created from GIS, not from survey equipment. This could result in minor variations compared to the actual alignment. The intent is to follow the existing curvature of the roadway, therefore alignment data is not provided except for select areas as shown on the plans. Adjust proposed pipe locations as needed to fit field conditions as approved by the CO.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 5 10
Scale in Feet

CHEROKEE NATIONAL FOREST

PLAN-PROFILE

PAINT MOUNTAIN ROAD (FS 54)

MP 0.00
SCHEDULE B

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5 February 2026 3:29 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M01

Project Description

This project consists of repairs to segments of Forest Service Roads 54 (Paint Mountain Road), 188 (Briar Creek Road), and 87 (Flatwoods Road) for a length of 4.7 miles (FS 188), 0.07 miles (FS 54), and 0.04 miles (FS 87). *This work includes roadway and ditch reconditioning, aggregate resurfacing, drainage improvements, slope stabilization, and other miscellaneous work.*

Prohibited Discharges

The following discharges are prohibited:

Wash-water from concrete, paint, curing compounds, and other construction materials
Fuels, oils, equipment-related compounds
Soaps, solvents used for vehicle washing
Waste, garbage, sanitary waste

Inspect and maintain on a regular basis, all mechanized equipment used in or near surface water to prevent contamination from fuels, lubricants, hydraulic fluids, or other toxic materials.

Solid waste generated from the project will consist of construction debris, garbage, and empty containers. Collect and store all waste in dumpsters, or in metal or plastic drums, as appropriate.

Hazardous waste will not be generated from normal construction activities. Equipment fueling and maintenance could generate spills, leaks, and hazardous wastes like motor oil, diesel, gasoline, and battery fluid. If feasible, conduct these activities in a covered area to avoid contact with storm water. Store all hazardous waste materials in appropriate and clearly marked containers away from other non-waste materials. Do not dispose of hazardous waste materials into the on-site dumpsters. Dispose of material according to Federal, State, and local regulations.

Develop and implement a Spill Prevention Control and Countermeasures (SPCC) plan following the requirements under 40 CFR 112. Report spills large enough to discharge to surface waters to the National Response Center at 1-800-424-8802.

General Guidelines

The Erosion & Sediment Control Narrative is meant as a guideline for preventing erosion and controlling sediment. The work consists of applying measures throughout the life of the project to control erosion and to minimize the sedimentation of rivers, streams, and impoundments such as lakes, reservoirs, bays, and coastal waters. The measures consist of soil erosion control measures which are also defined and outlined in the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-24, and the Special Contract Requirements.

Do not modify the type, size, or location of any control or practice without prior approval from the Contracting Officer (CO).
No construction access will be permitted through a wetland or waterway.
Do not allow construction vehicles to track sediment outside the project limits.
Do not allow any construction equipment to operate on or access the down-slope side of the perimeter control measures.
Direct storm water to vegetated buffer areas and do not discharge directly into surface waters.

Sequence of Construction

Phase I Establish Perimeter Controls

Prior to any clearing or excavation, construct perimeter controls to ensure that disturbed sediment does not leave the project site. Perimeter controls include specified measures outside the construction limits.

Phase II Intermediate Controls

Apply intermediate controls during rough grading operations. Install check dams in ditches along the roadway.

Apply temporary turf establishment in disturbed areas that will remain exposed for over 14 days within 7 days. Apply permanent turf establishment to the finished slopes according to Section 625.

At the end of each day's grading operations, shape earthwork to minimize and control erosion from storm runoff.

Install inlet protection prior to diverting water through inlets.

Upon completion of culverts, ensure that culvert entrances, outlets, and outlet channels are at final grade and are stabilized (with vegetation, riprap, or pavement) before routing drainage through completed culverts.

Apply temporary turf establishment to stockpiles remaining in place longer than 14 days within 7 days of stockpiling.

Provide watering for dust control within the construction limits, on active haul roads, and in pits and staging areas.

Phase III Final Construction / Stabilization

After completion of roadway construction, do the following as directed by the CO:

Finish grading, place riprap, and apply permanent turf establishment to any remaining disturbed areas.
Where necessary, replace eroded topsoil and re-apply permanent turf establishment to disturbed areas where vegetation has not established.
Inspect, clean, and repair all culvert outlet protection, riprap basins, and stabilized channels.
Remove all devices used for dewatering.

Remove all other perimeter controls when directed by the CO.

Maintenance and Inspection Procedures

Unless stated otherwise, construct and maintain all vegetated and structural erosion control practices according to Section 157, the details shown in the plans, and the individual permitting requirements. Check and maintain erosion control measures once every 7 days and within 24 hours after a rain of 0.25 inches or more, and daily during wet weather. Repair or replace any damaged measures by the end of the day.

Fiber Rolls- inspect weekly and after each runoff event. Remove sediment deposits from the fiber roll when it reaches half the height of the device. Replace damaged fiber roll within 24 hours of inspection.

Check Dams- inspect weekly and after each runoff event. Remove sediment deposits from the check dam when it reaches half the height of the device. Repair structures as necessary so they continue to conform to the detail.

Record the inspection date and summary of findings within 24 hours of completing a site inspection.

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3 February 2026 10:44 AM

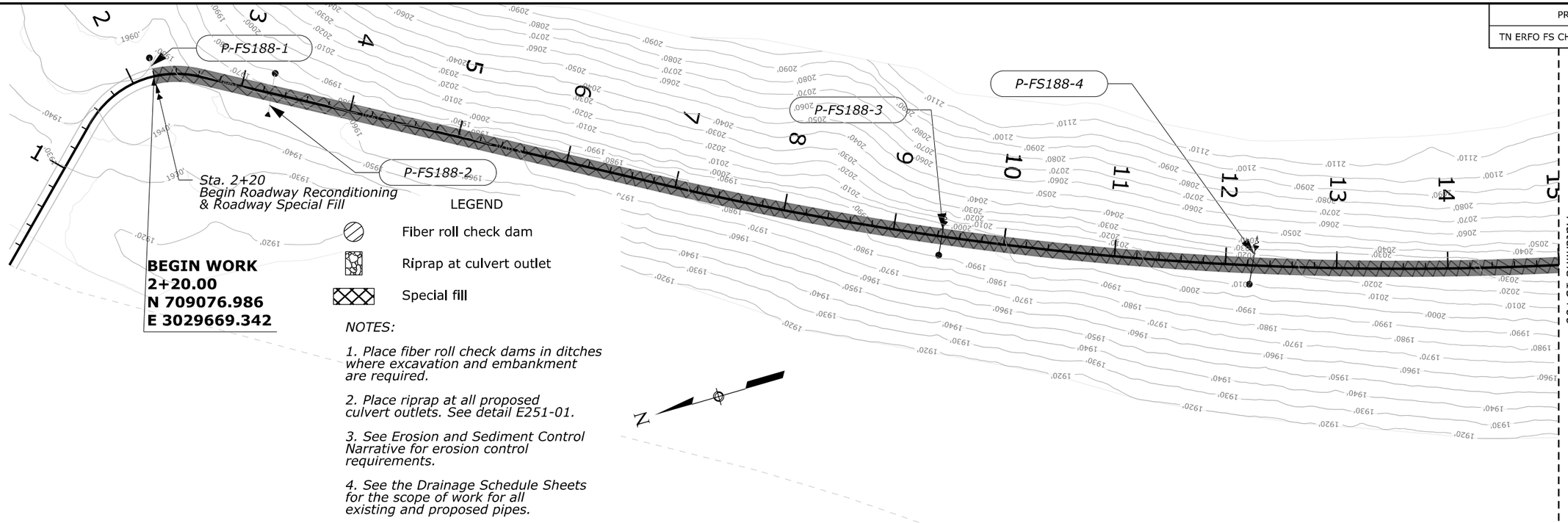
NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M02



LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

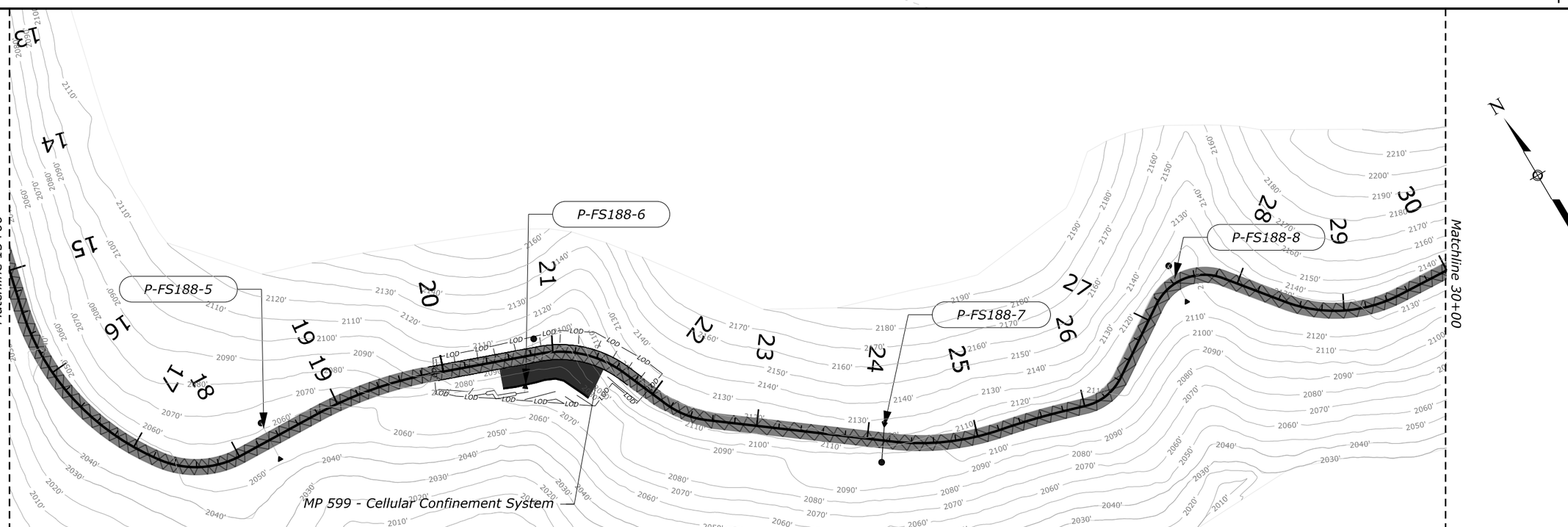
NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

0+00 to 30+00

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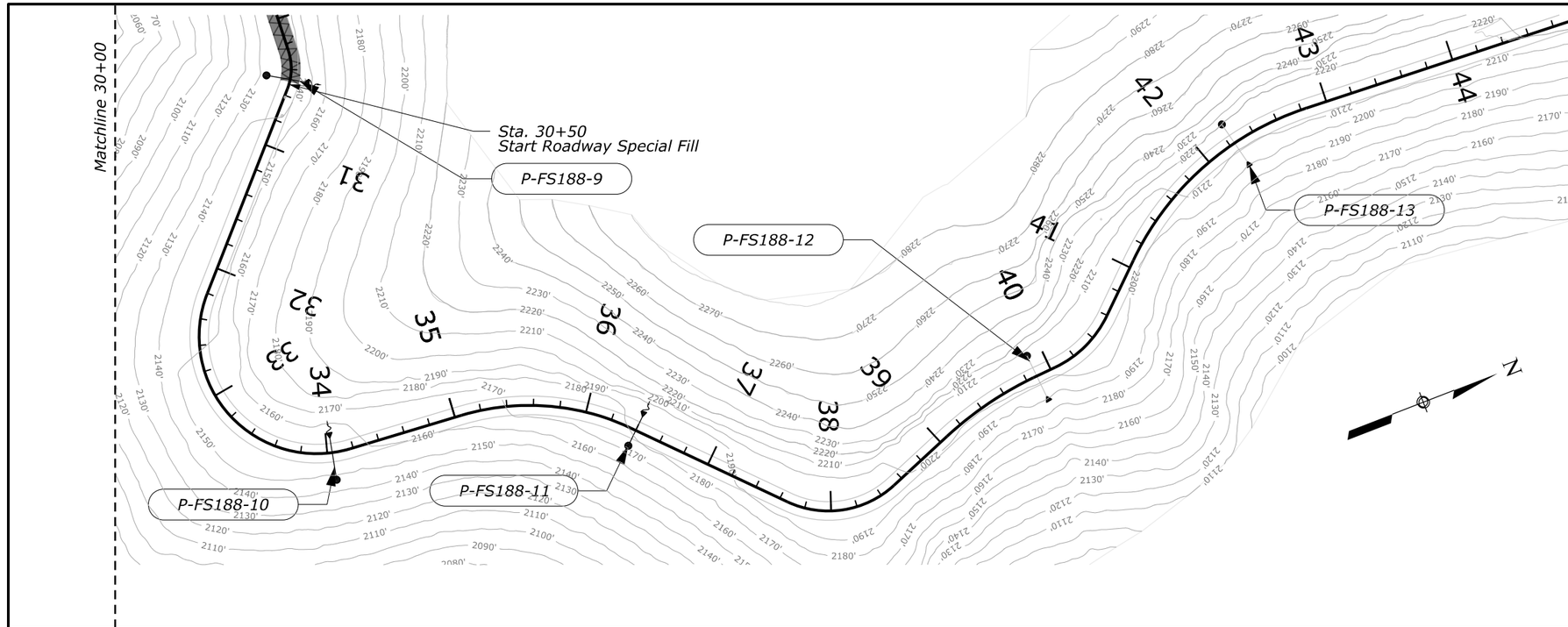
5 February 2026 3:36 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M03



LEGEND

Fiber roll check dam

Riprap at culvert outlet

Special fill

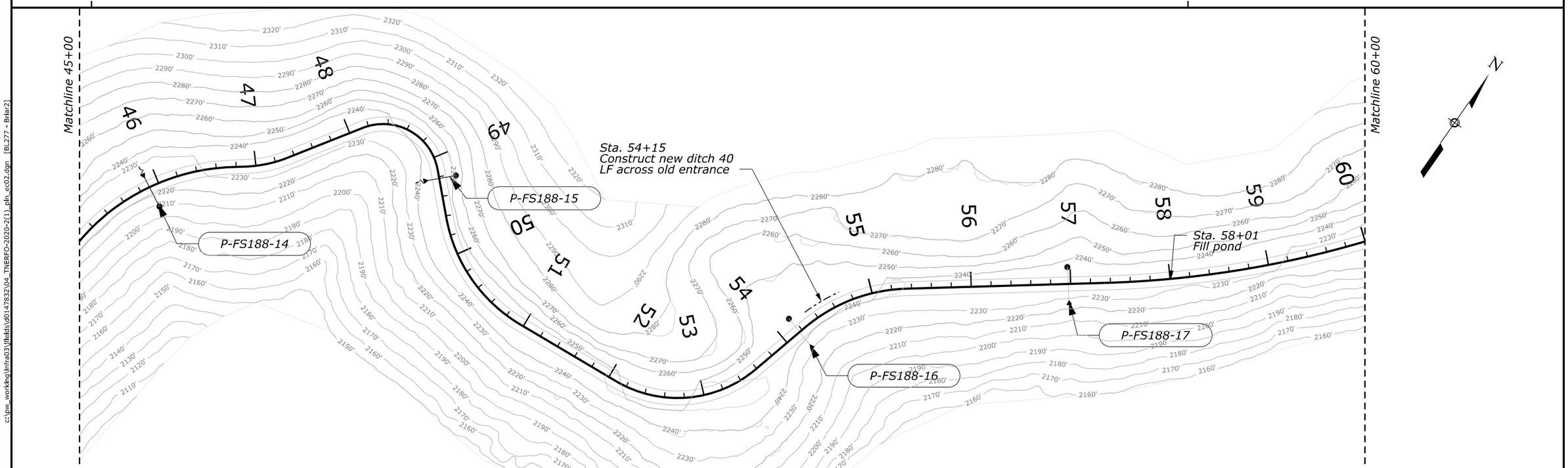
NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

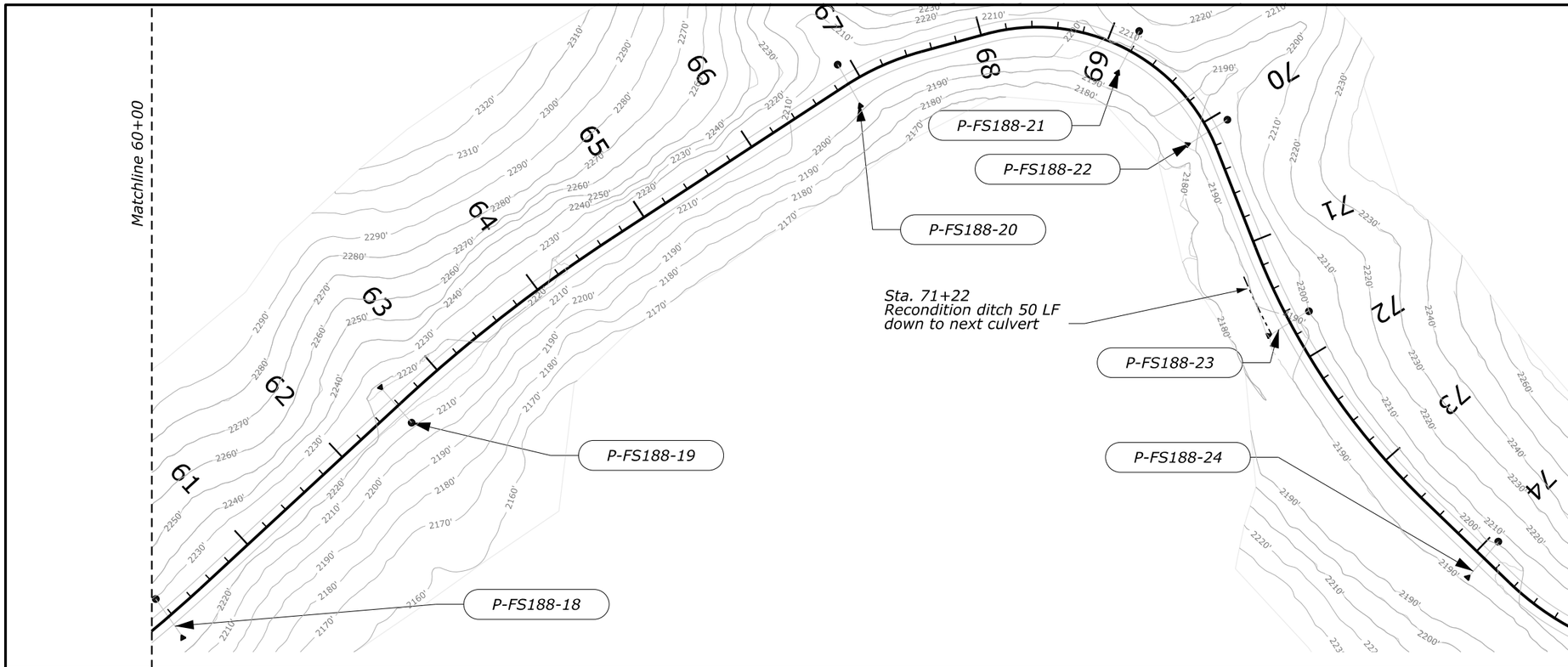
EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

30+00 to 60+00

c:\pw_working\infra03\fhwfs\d0147832\04_TNERFO-2020-2(1)_plh_ec02.dgn [BLz77 - Briar2]
5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M04



N

LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

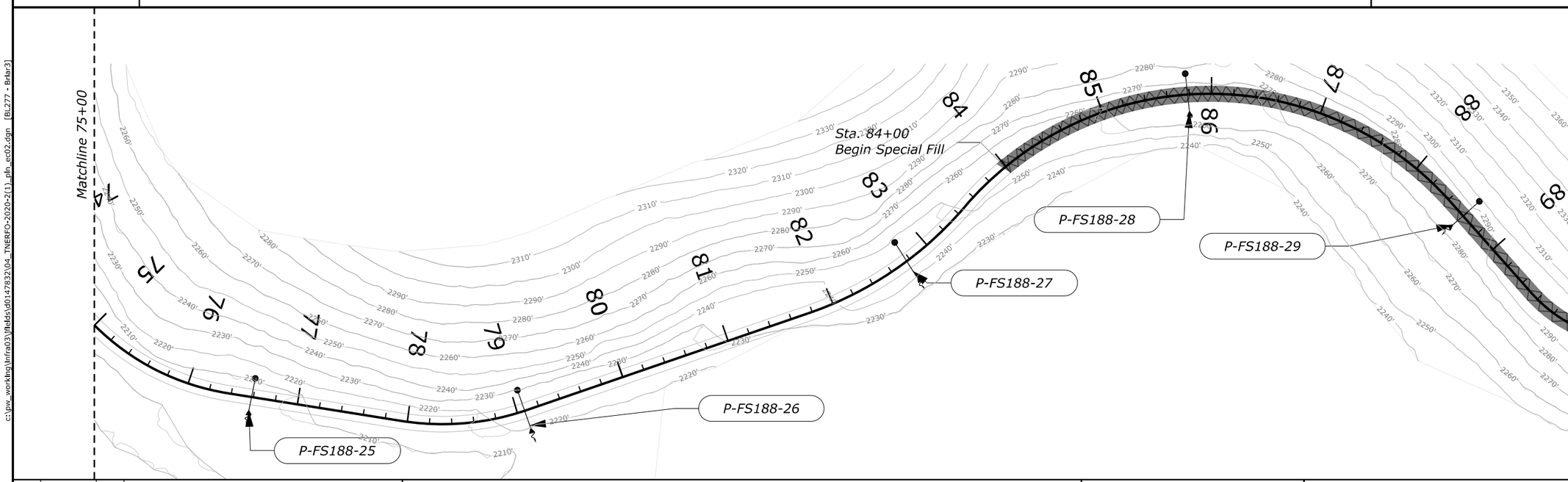
NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.



N

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

60+00 to 90+00

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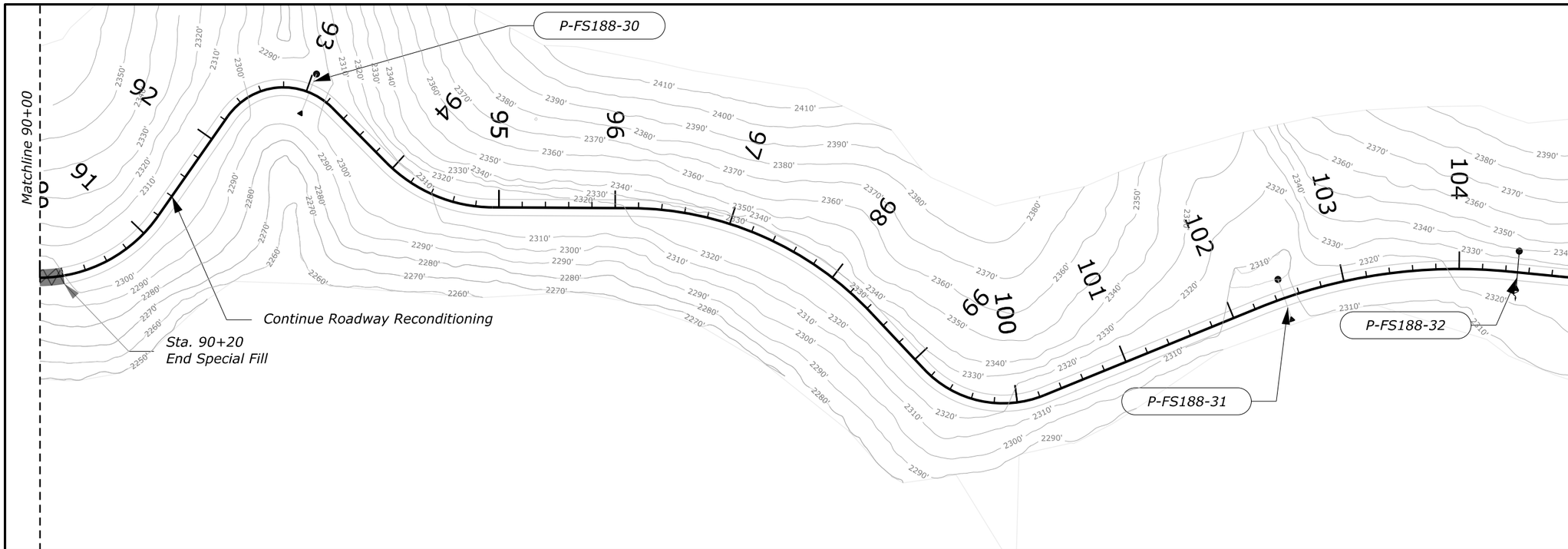
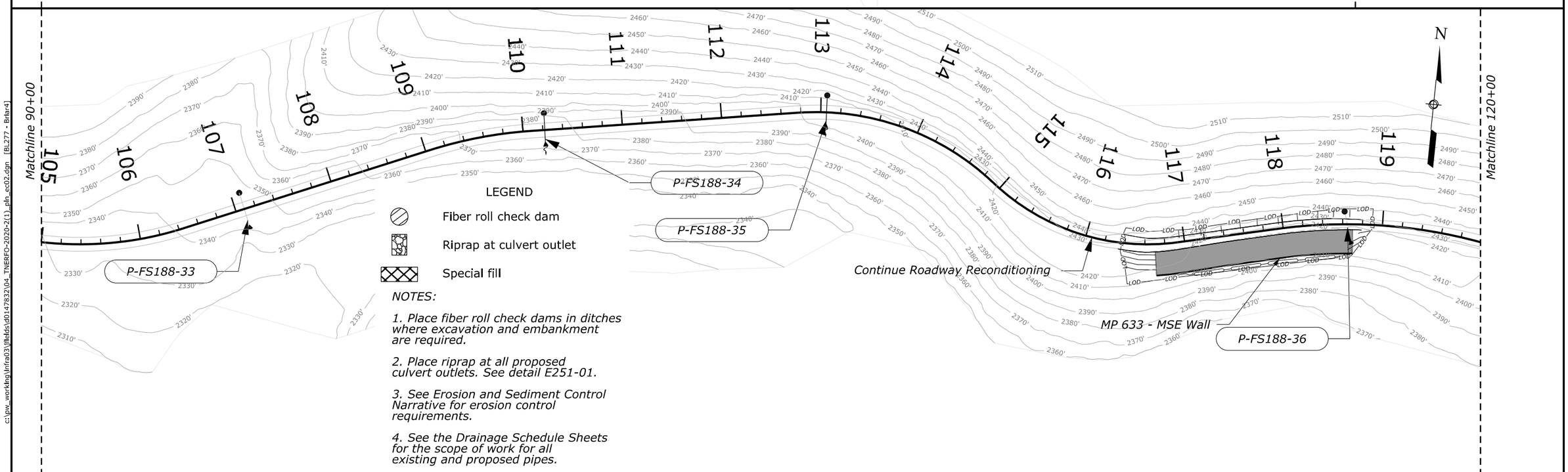
5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M05





LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

90+00 to 120+00

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5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M06

LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

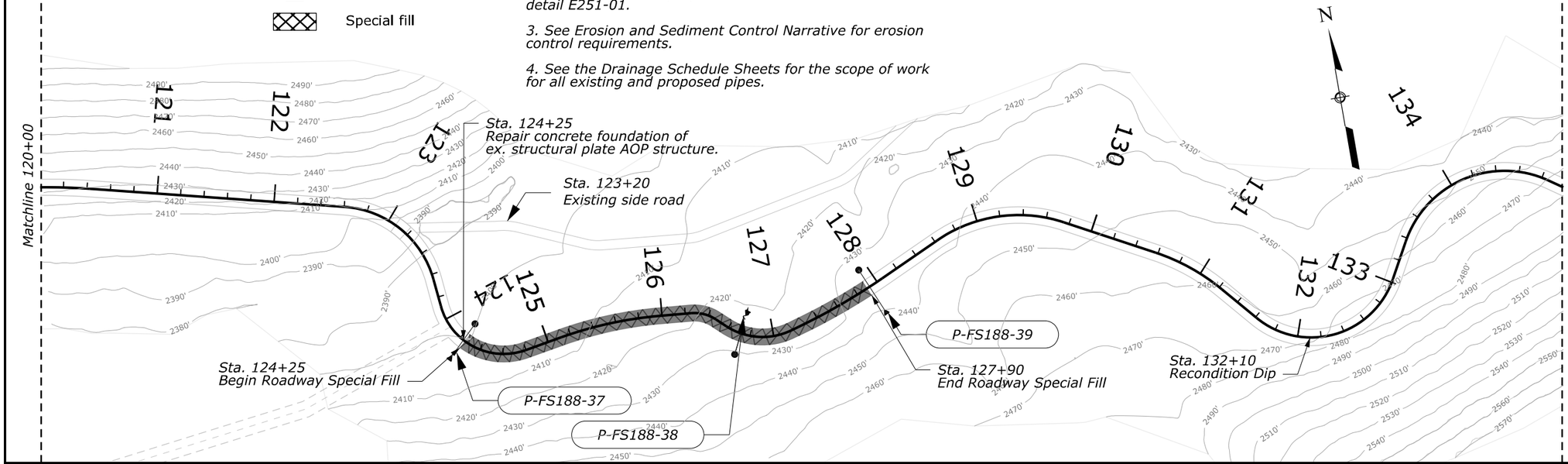
NOTES:

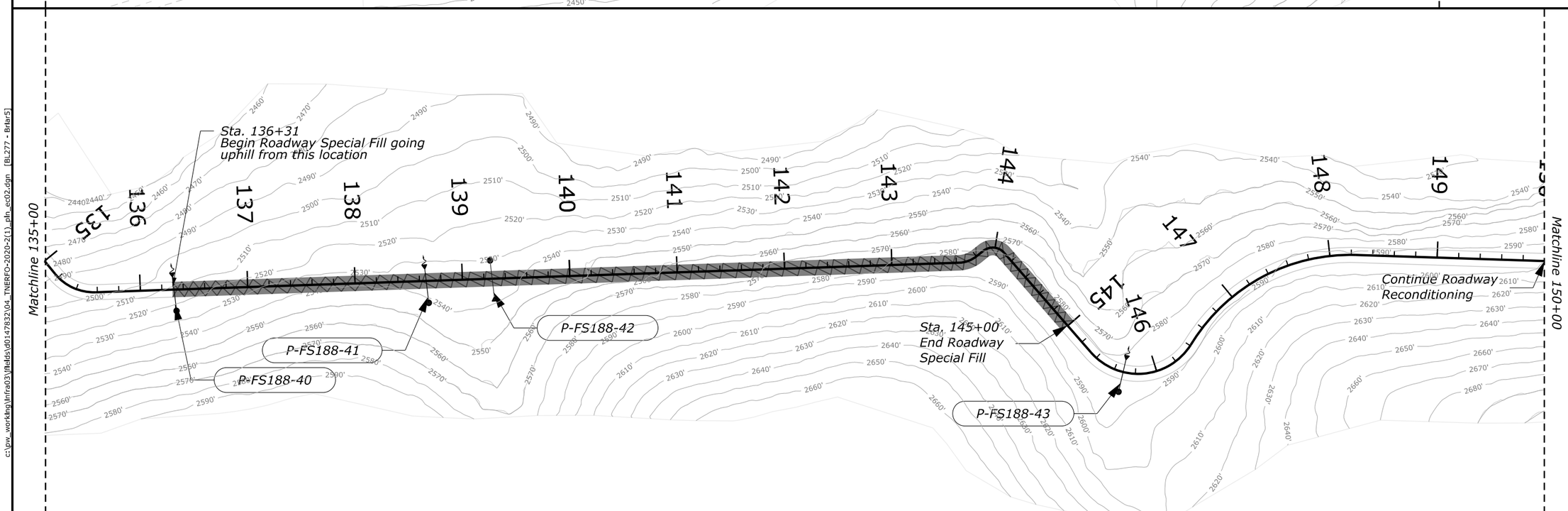
1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.





NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

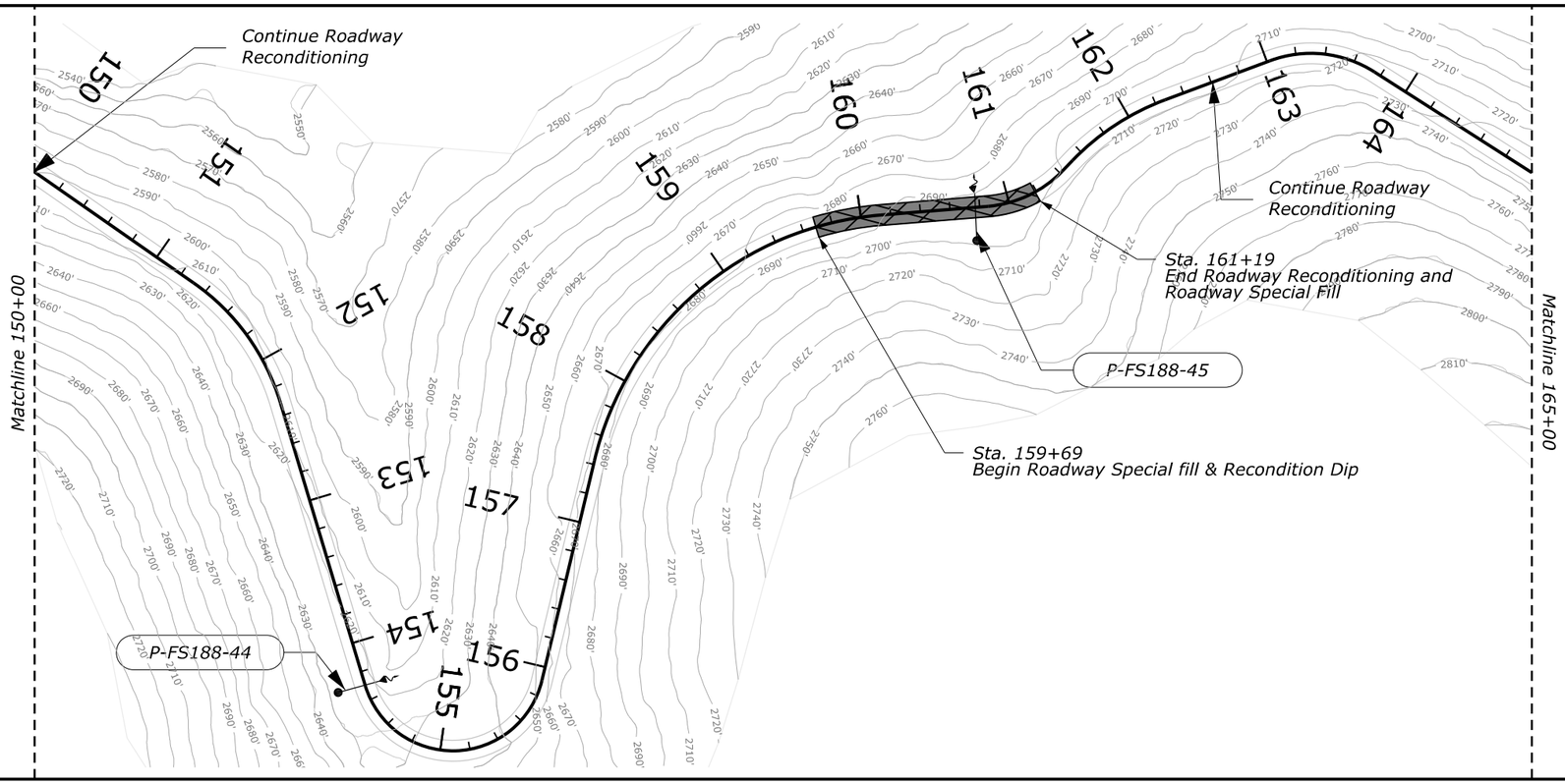
EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

120+00 to 150+00

c:\pw_working\infra03\Fields\d0147832\04_TNERFO-2020-2(1)_ph_ec02.dgn [BL277 - Brian5]
5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M07



LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

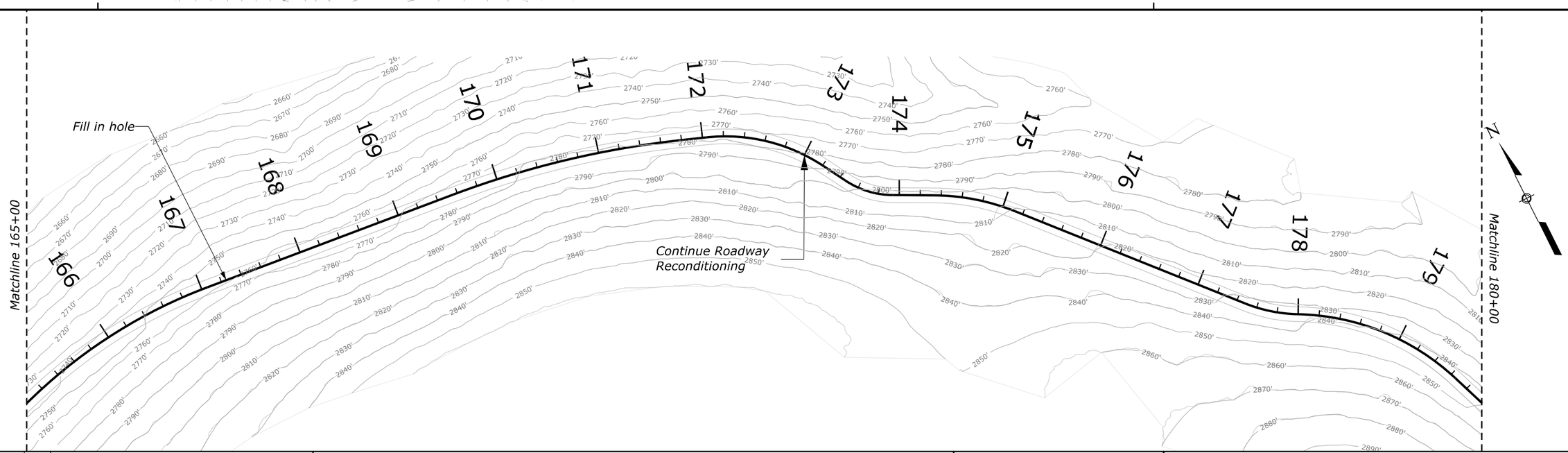
NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

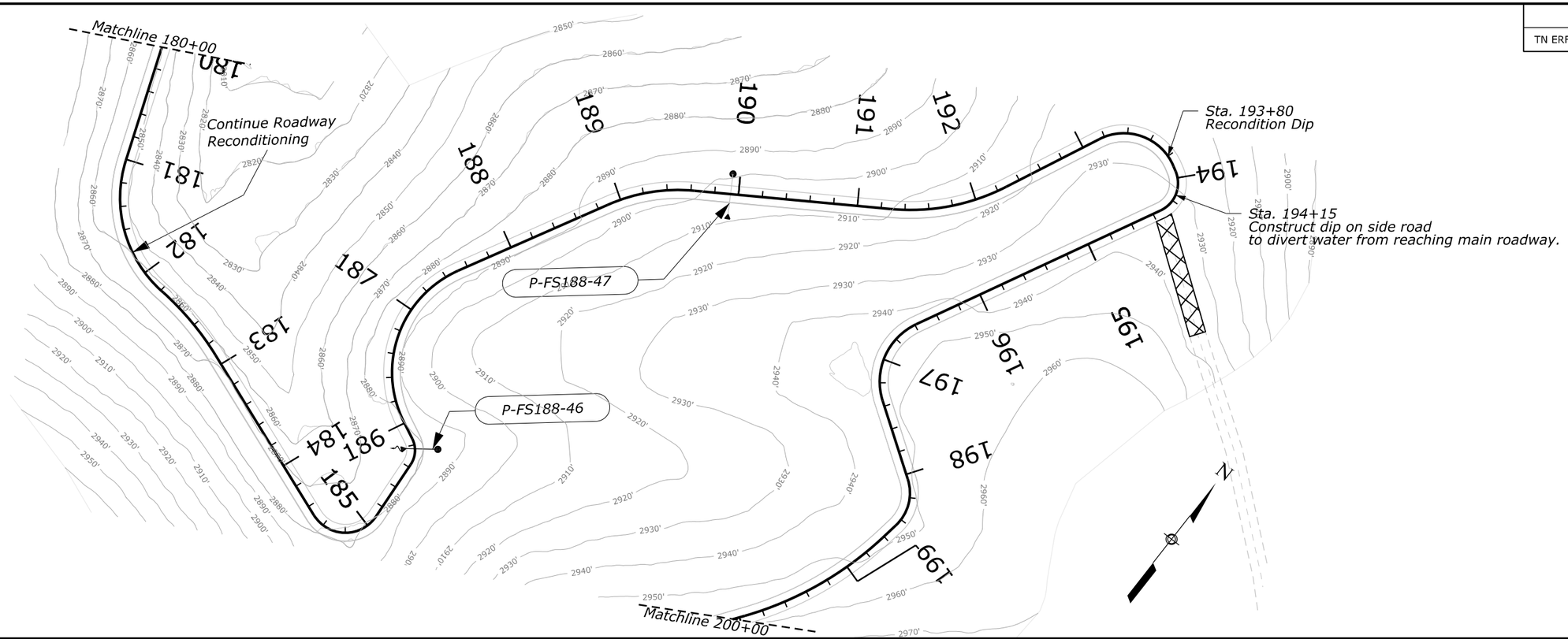
EROSION AND SEDIMENT CONTROL PLAN

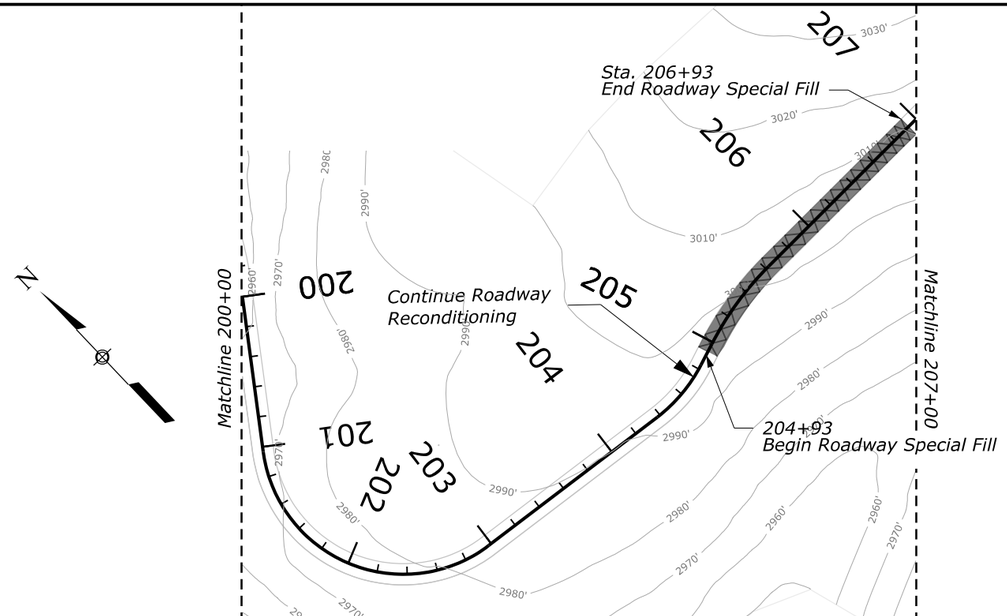
BRIAR CREEK ROAD (FS 188)

150+00 to 180+00

c:\pw_working\infra03\Fields\d0147832\04_TNERFO-2020-2(1)_plh_ec02.dgn [BL277 - Briar6]
5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M08





LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

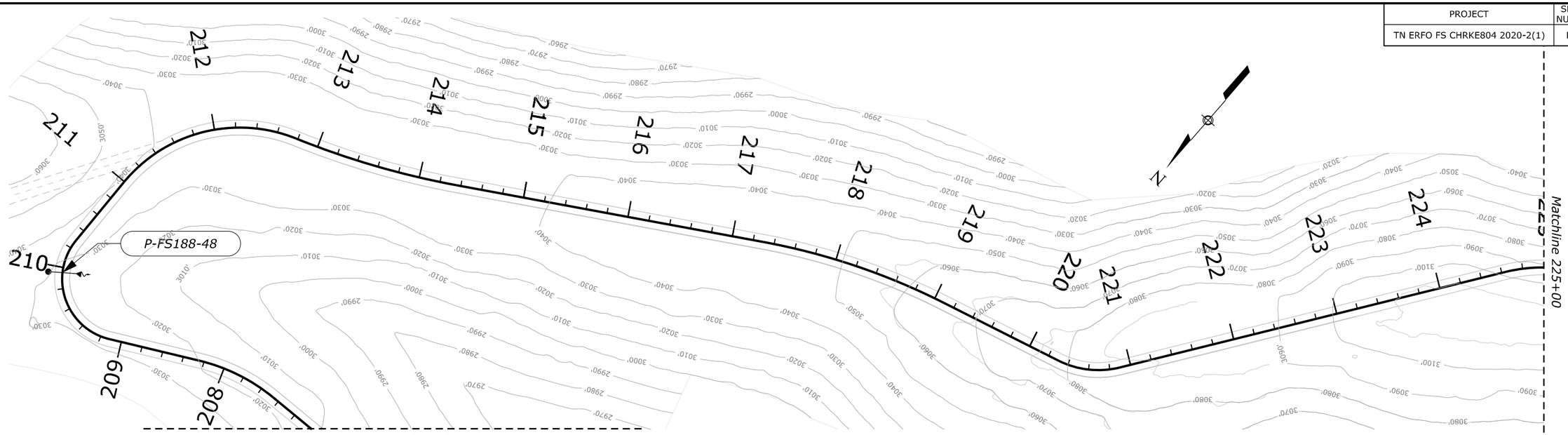
EROSION AND SEDIMENT CONTROL PLAN

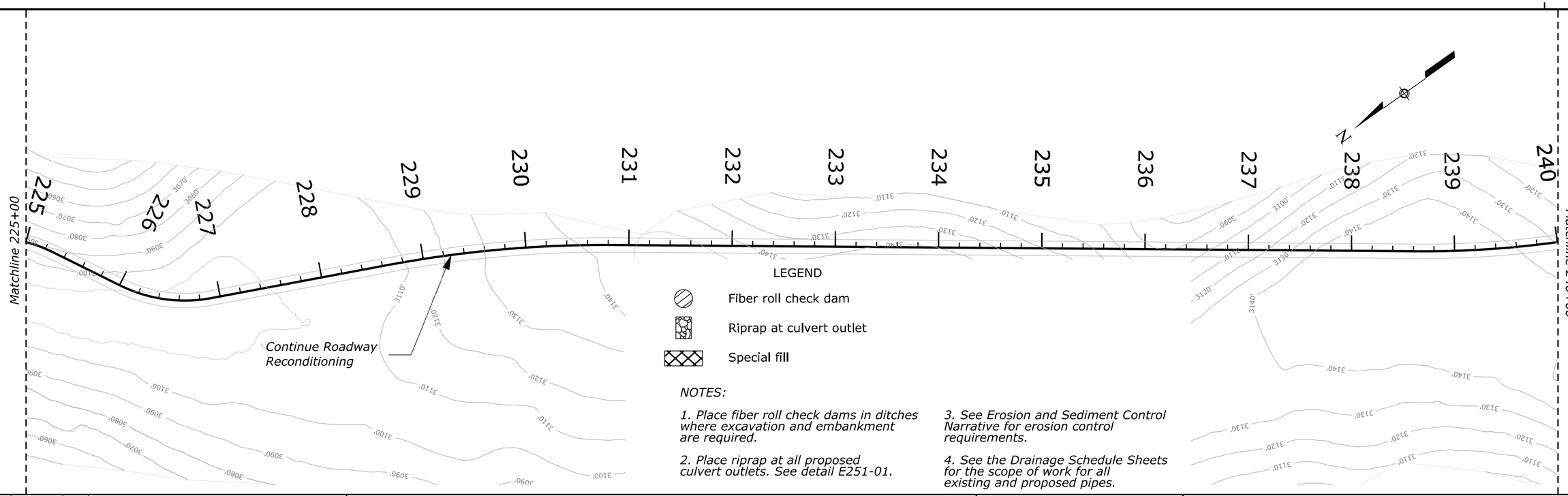
BRIAR CREEK ROAD (FS 188)

180+00 to 207+00

c:\pw_working\infra03\Hafds\d0147832\04_TNERFO-2020-2(1)_plh_ec02.dgn [BL277 - Brlar7]
5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M09





LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

207+00 to 240+00

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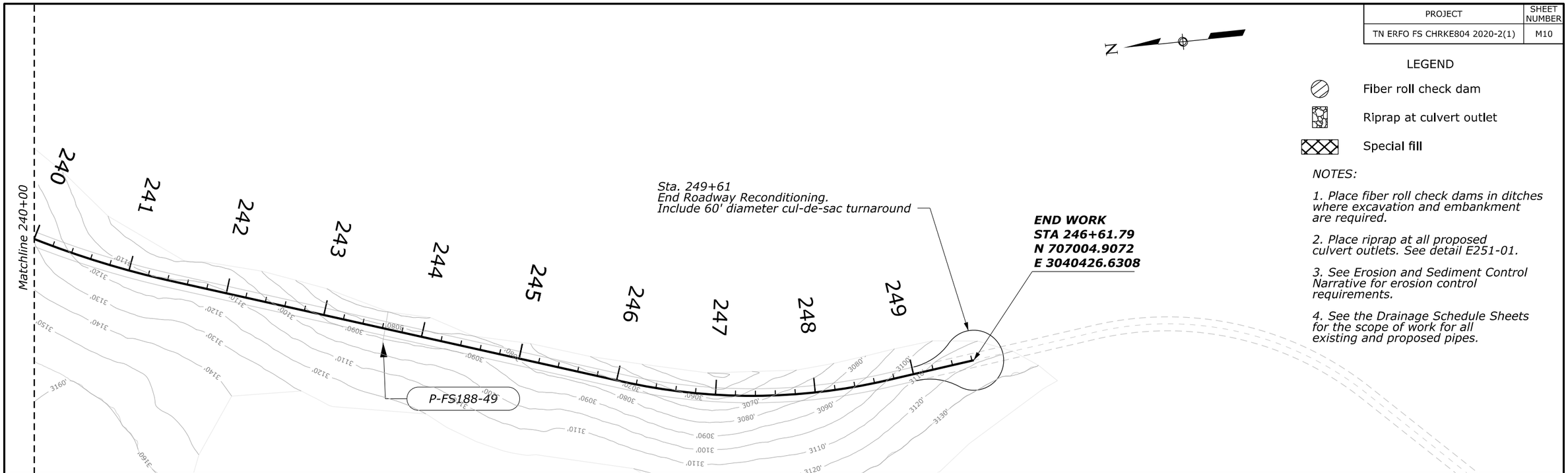
5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M10



LEGEND

- Fiber roll check dam
- Riprap at culvert outlet
- Special fill

NOTES:

1. Place fiber roll check dams in ditches where excavation and embankment are required.

2. Place riprap at all proposed culvert outlets. See detail E251-01.

3. See Erosion and Sediment Control Narrative for erosion control requirements.

4. See the Drainage Schedule Sheets for the scope of work for all existing and proposed pipes.

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 50 100
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

240+00 to 246+61.79

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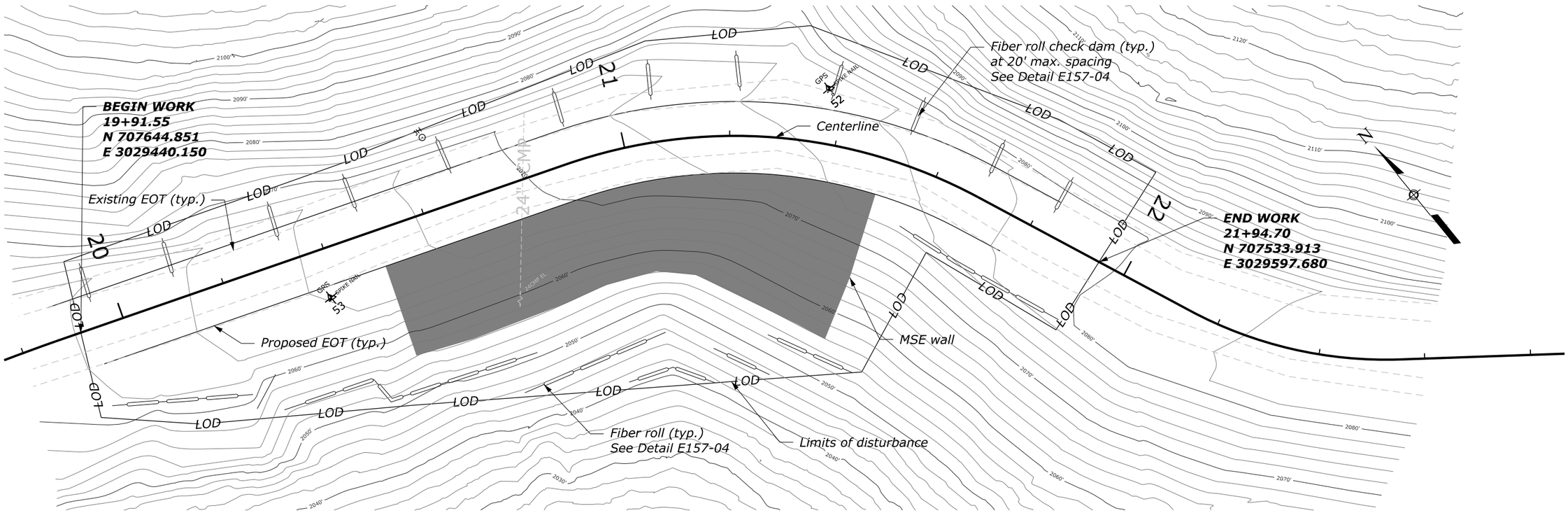
5 February 2026 3:37 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M11



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 20 40
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188), MP 0.40

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19 September 2025 2:40 PM

PROJECT	SHEET NUMBER
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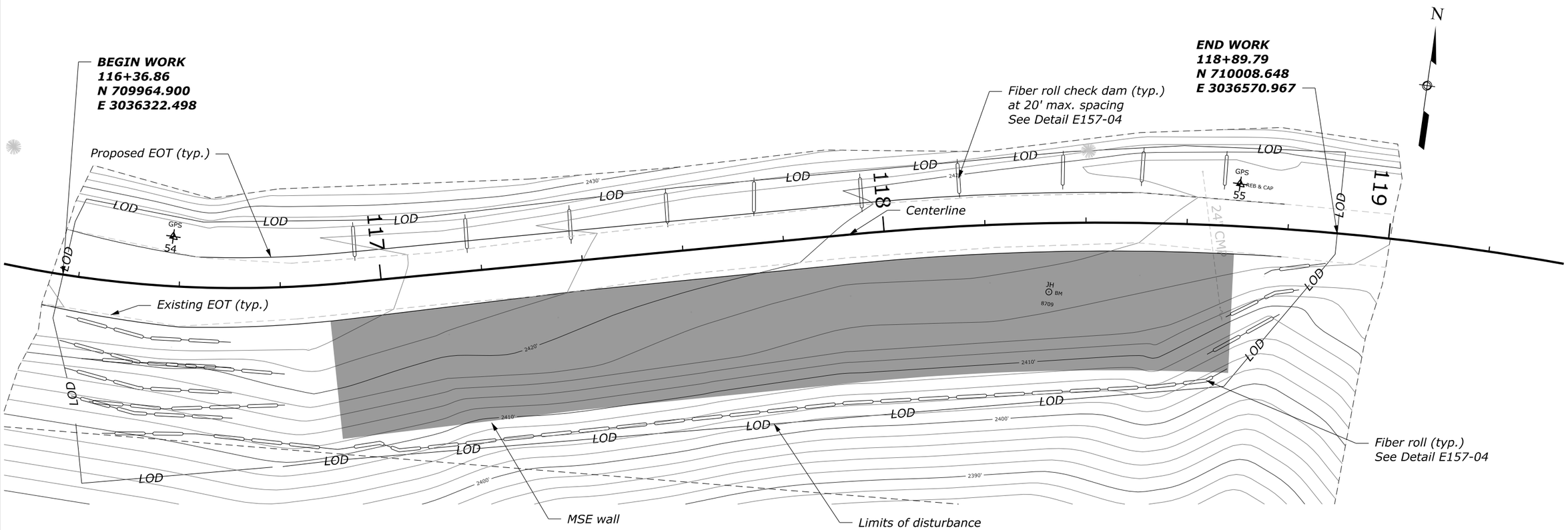

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 20 40
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

BRIAR CREEK ROAD (FS 188), MP 2.20

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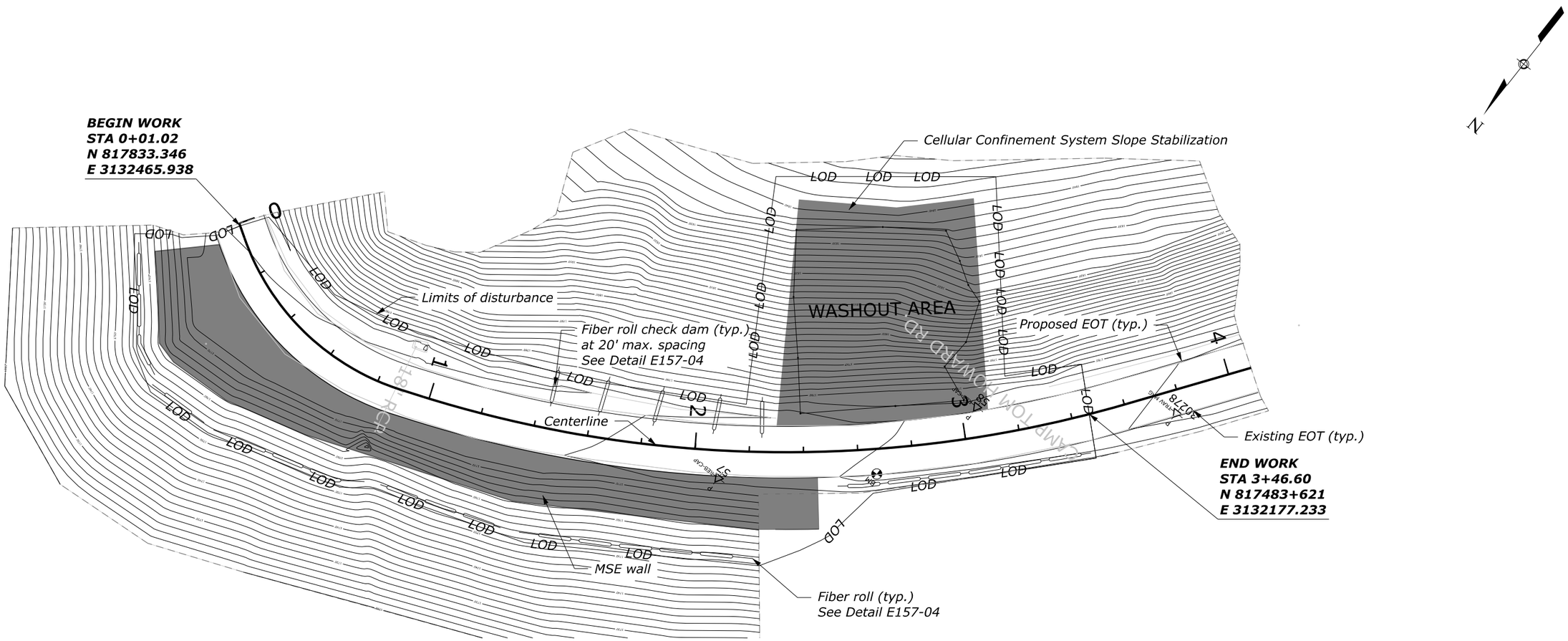
19 September 2025 2:39 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M13



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 40 80
Scale in Feet

CHEROKEE NATIONAL FOREST

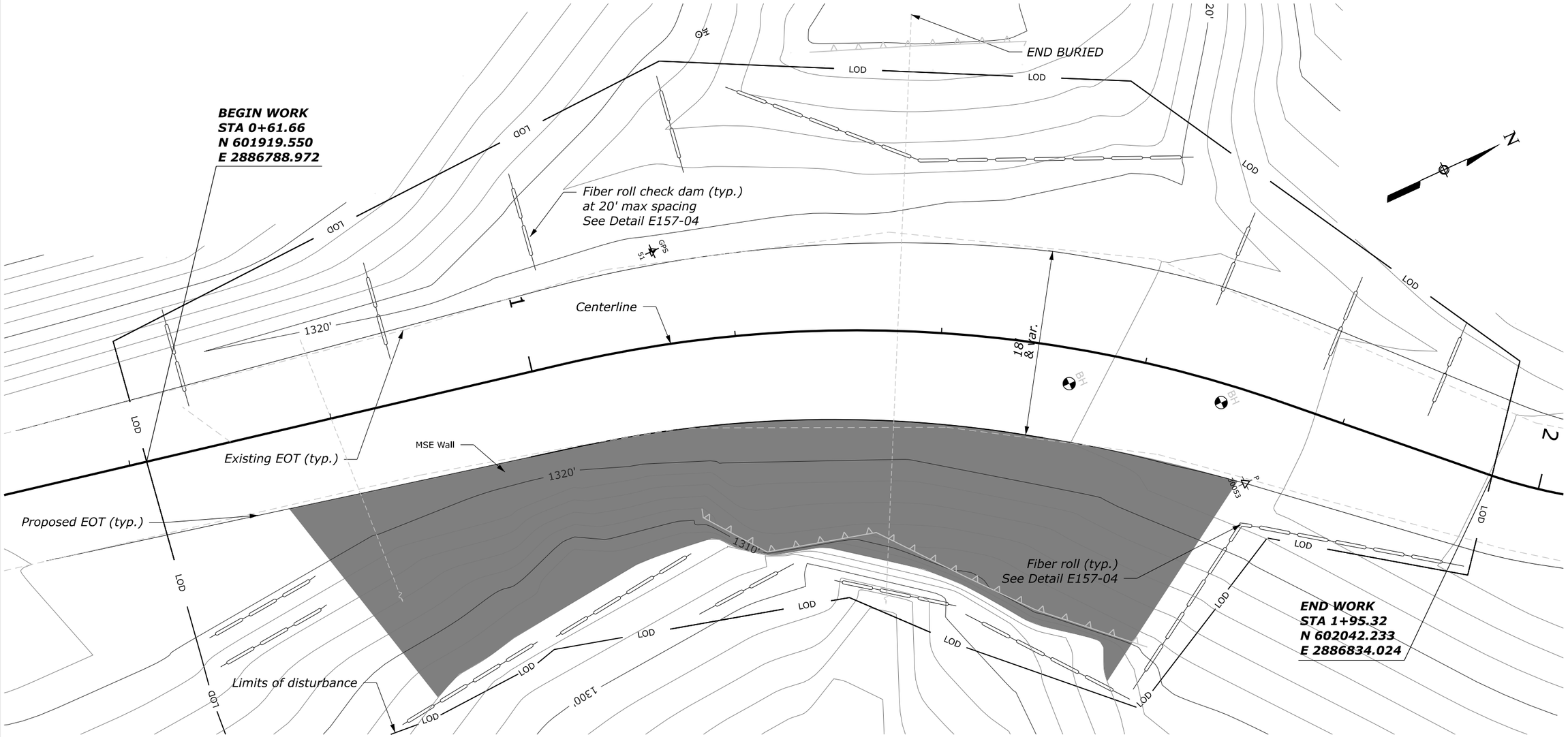
EROSION AND SEDIMENT CONTROL PLAN

FLATWOODS ROAD (FS 87), MP 5.78

c:\pw_working\hrfra03\jfladds\d0147832\04_TNERFO-2020-2(1)_plh_ec03.dgn [esc_flatwoods]

5 February 2026 3:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M14



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 10 20
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

PAINT MOUNTAIN ROAD (FS 54), MP 4.81

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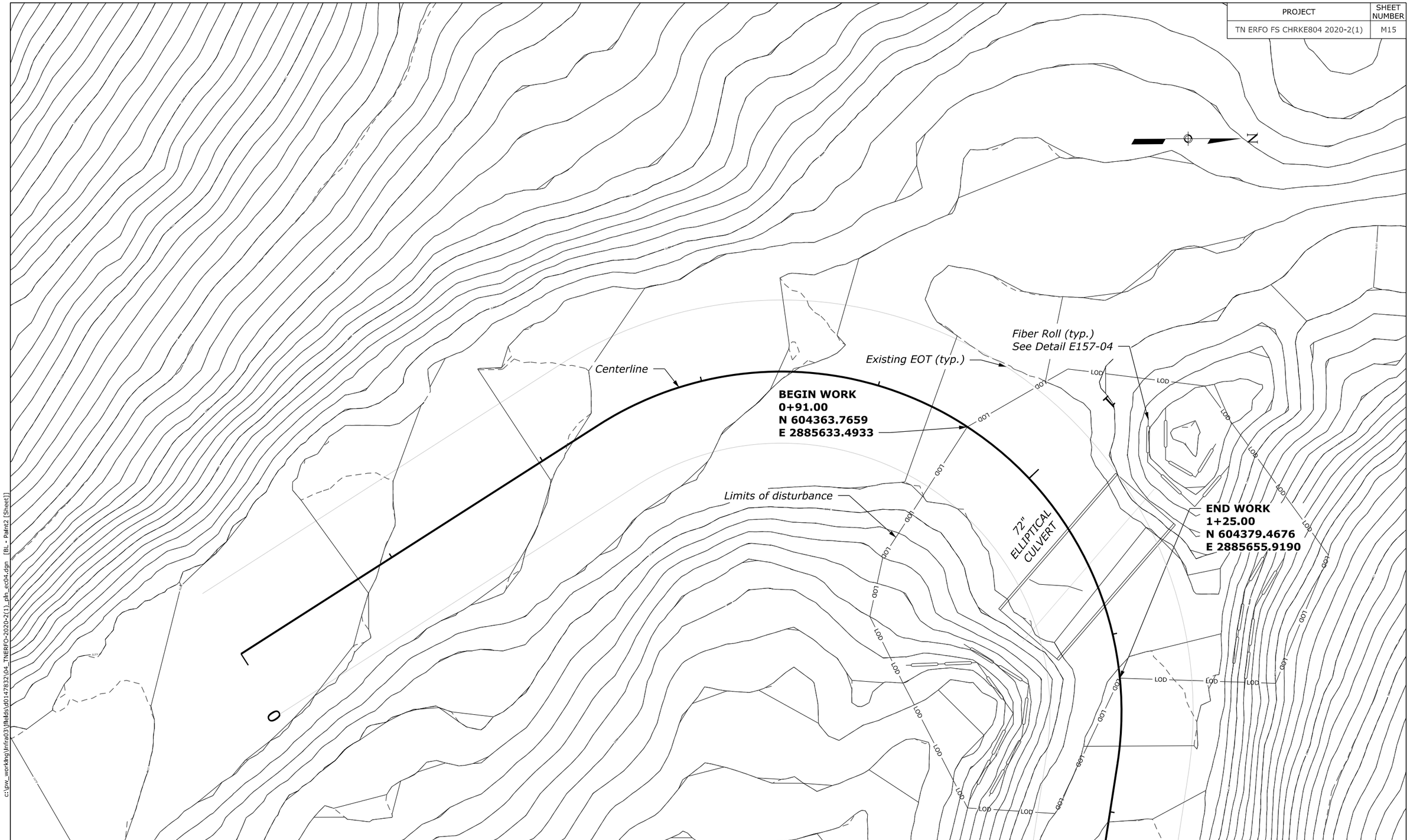
5 February 2026 3:43 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	M15



NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

0 10 20
Scale in Feet

CHEROKEE NATIONAL FOREST

EROSION AND SEDIMENT CONTROL PLAN

PAINT MOUNTAIN ROAD (FS 54), MP 0.00

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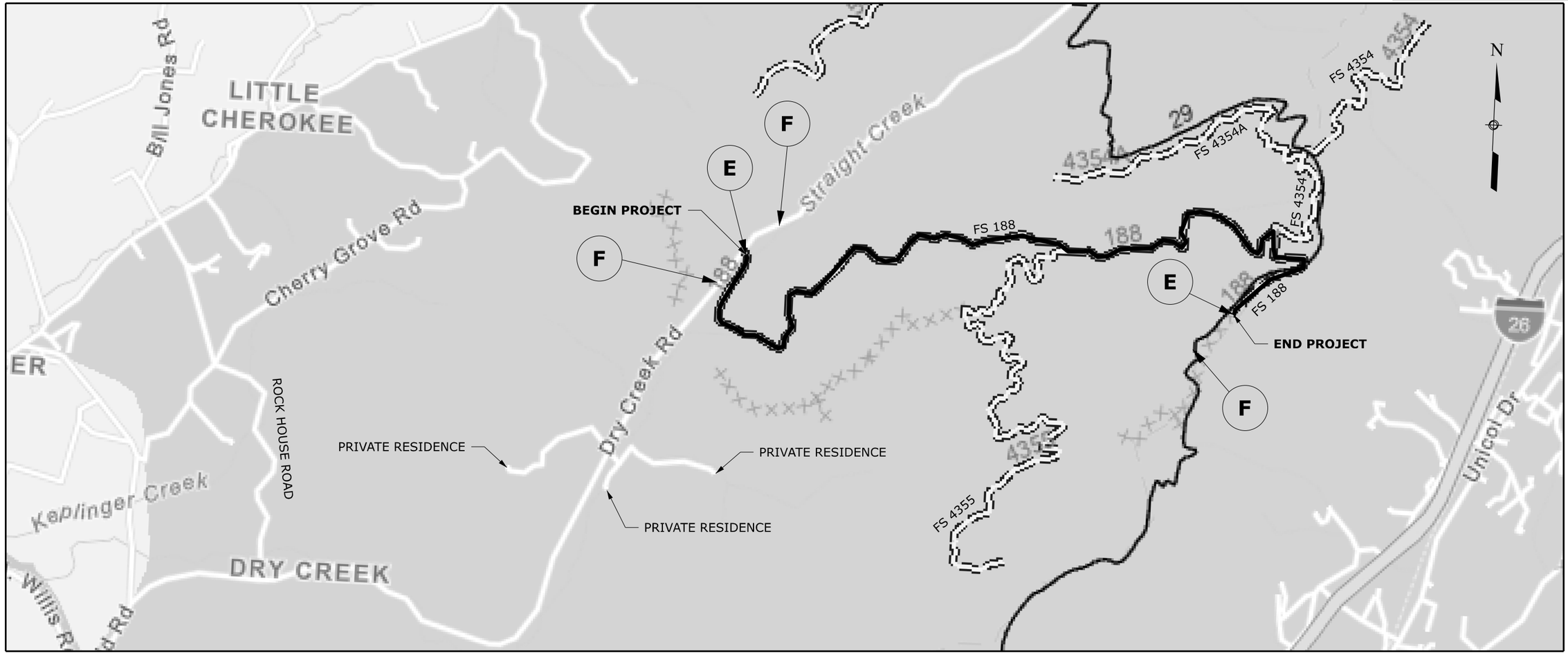
5 February 2026 3:43 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	N01



W20-3

A

W20-3

B

W20-3

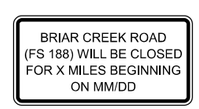
C

R11-3A

D

R11-2

E



F

Notes

1. *Temporary closure of roads within the project limits is permitted. Limit closures of area of work. Notify the CO of closure at least 48 hours in advance. Limit duration of closure to the extent practical. Other roads may be closed as approved by the CO.*
2. *Acquire overload permits for county, state, and federal roads. Contact the CO for Forest Service overload permit application. A separate permit is required for each overload configuration.*
3. *Use sign R11-2 with Type 3 barricades at road closure locations. Place two additional R11-2 signs within the closure limits as directed by the CO.*
4. *Use Type B warning lights with all Type 3 barricades.*

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

NOT TO SCALE

CHEROKEE NATIONAL FOREST

TEMPORARY TRAFFIC CONTROL PLAN

BRIAR CREEK ROAD (FS 188)

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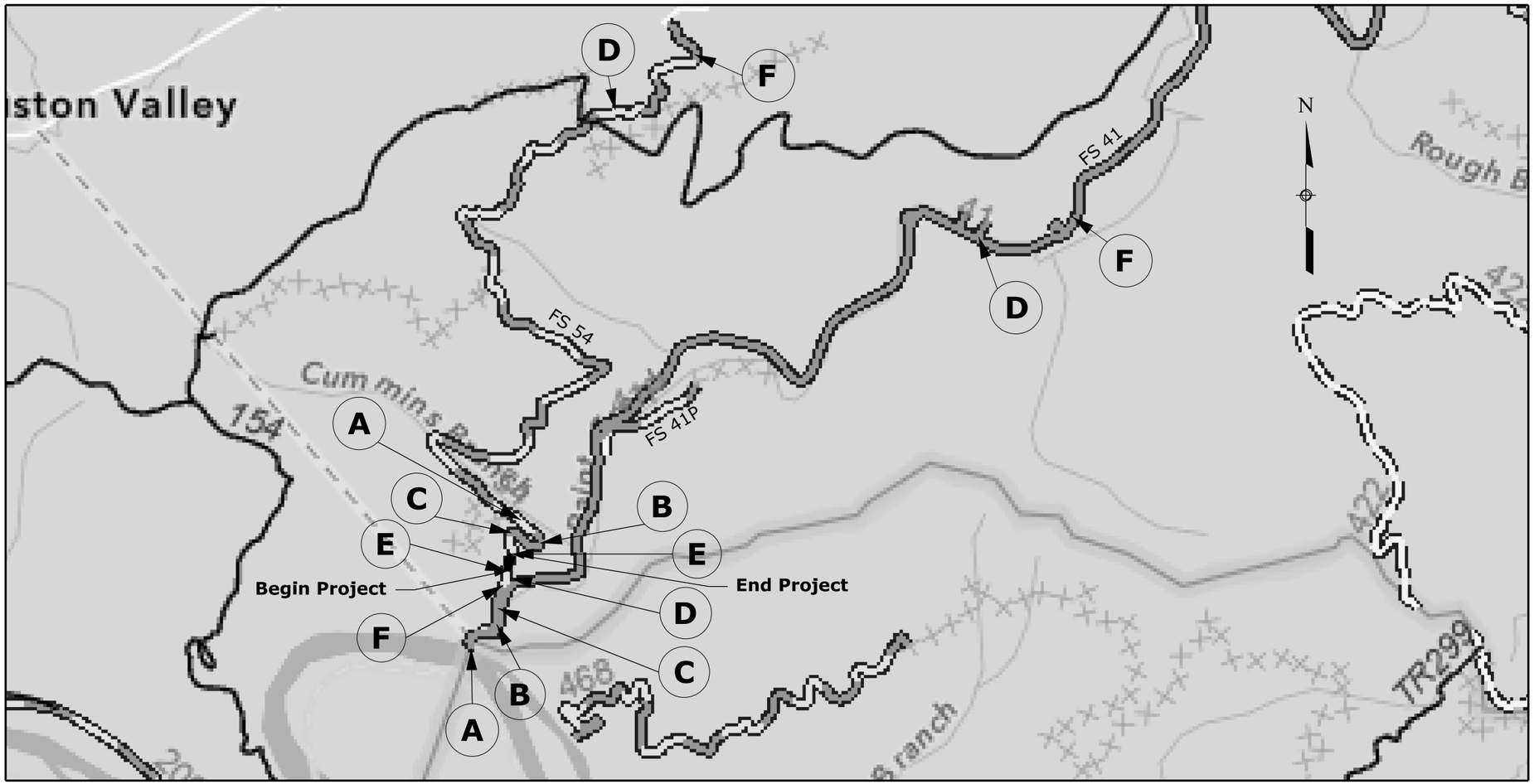
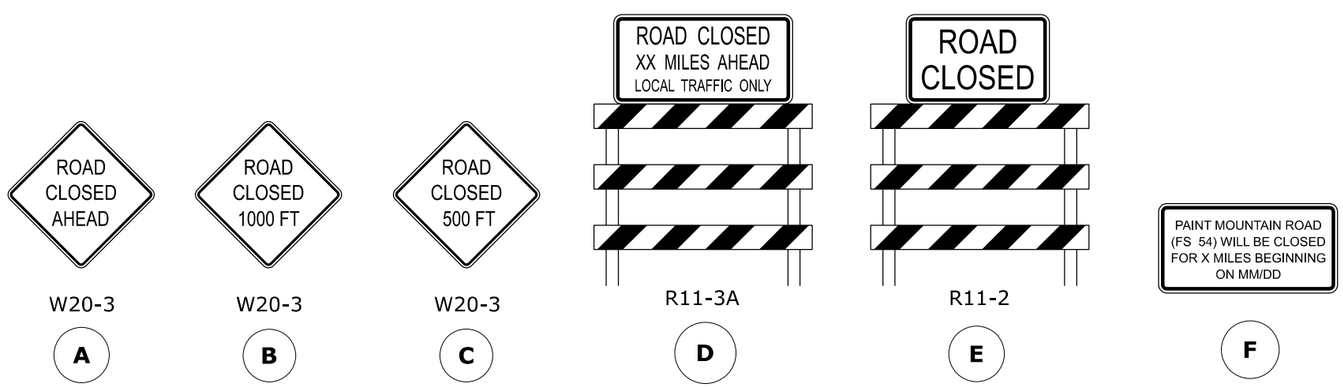
2 February 2026 1:47 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	N02





Notes

1. *Temporary closure of roads within the project limits is permitted. Limit closures of area of work. Notify the CO of closure at least 48 hours in advance. Limit duration of closure to the extent practical. Other roads may be closed as approved by the CO.*
2. *Acquire overload permit for county, state, and federal roads. Contact the CO for Forest Service overload permit application. A separate permit is required for each overload configuration.*
3. *Use sign R11-2 with Type 3 barricades at road closure locations. Place two additional R11-2 signs within the closure limits as directed by the CO.*
4. *Use Type B warning lights with all Type 3 barricades.*

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

NOT TO SCALE

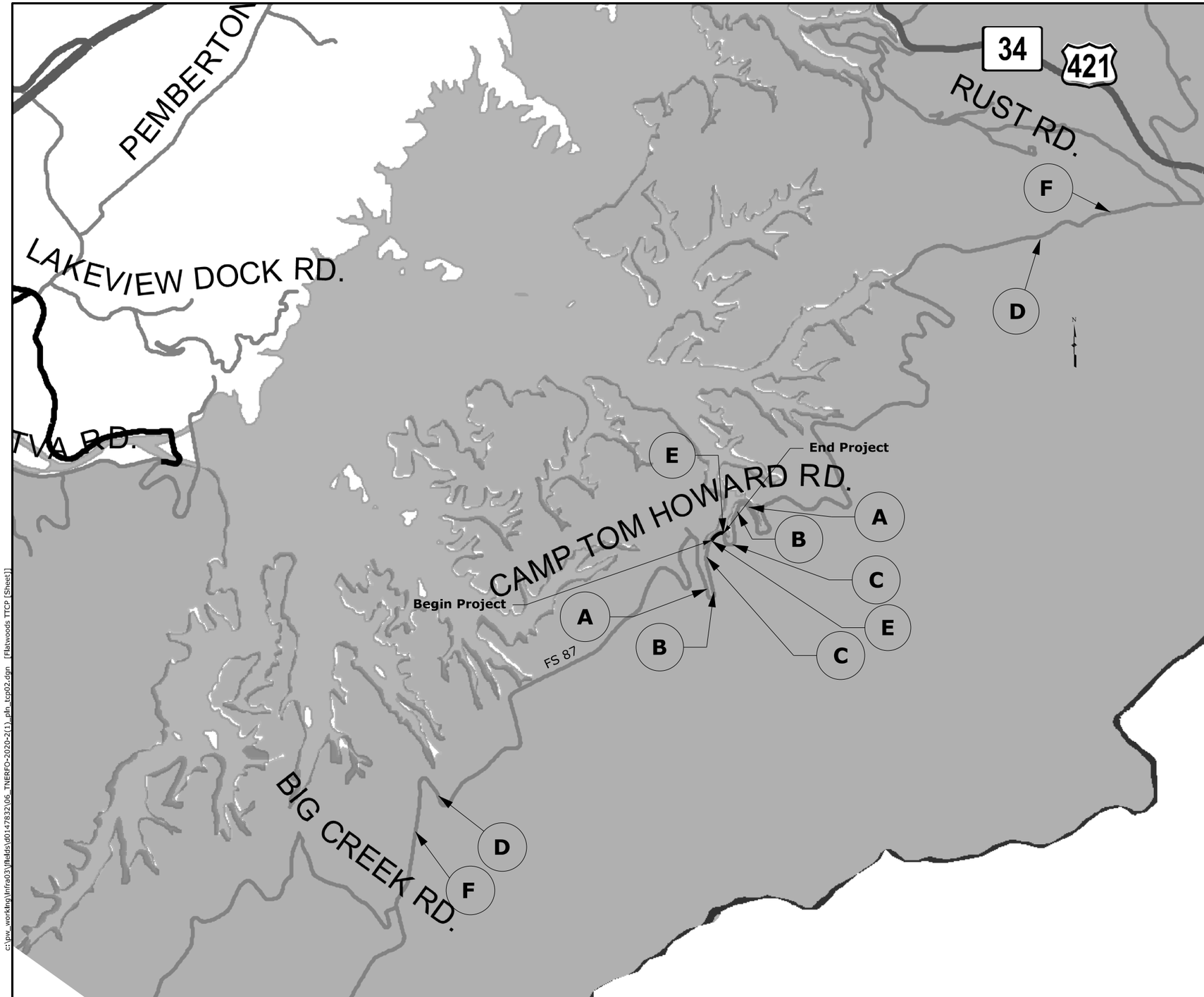
CHEROKEE NATIONAL FOREST

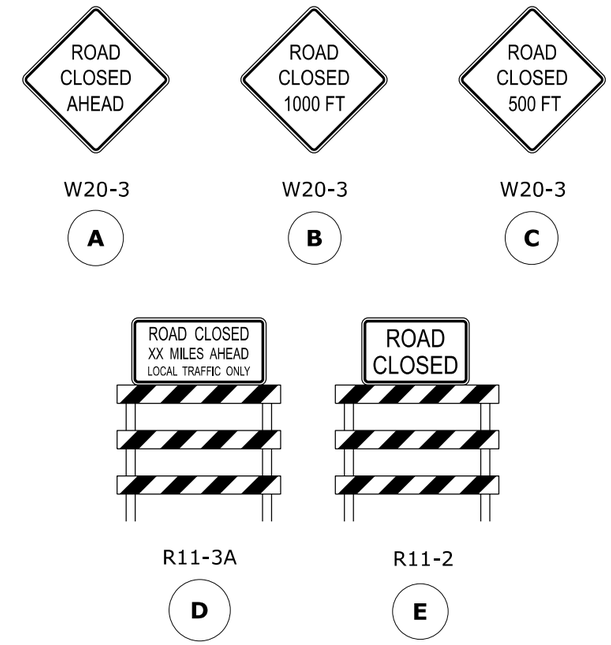
TEMPORARY TRAFFIC CONTROL PLAN

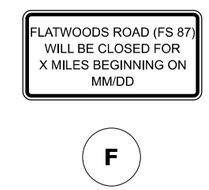
PAINT MOUNTAIN ROAD (FS 54)

c:\pw_working\infra03\rakes\d0147832\06_TNERFO-2020-2(1)_plh_tcp03.dgn [TTCP Paint Mountain [Sheet]]
5 March 2026 10:36 AM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	N03







Notes

1. *Temporary closure of roads within the project limits is permitted. Limit closures of area of work. Notify the CO of closure at least 48 hours in advance. Limit duration of closure to the extent practical. Other roads may be closed as approved by the CO.*
2. *Acquire overload permit for county, state, and federal roads. Contact the CO for Forest Service overload permit application. A separate permit is required for each overload configuration.*
3. *Use sign R11-2 with Type 3 barricades at road closure locations. Place two additional R11-2 signs within the closure limits as directed by the CO.*
4. *Use Type B warning lights with all Type 3 barricades.*

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

NOT TO SCALE

CHEROKEE NATIONAL FOREST

TEMPORARY TRAFFIC CONTROL PLAN

FLATWOODS ROAD (FS 87)

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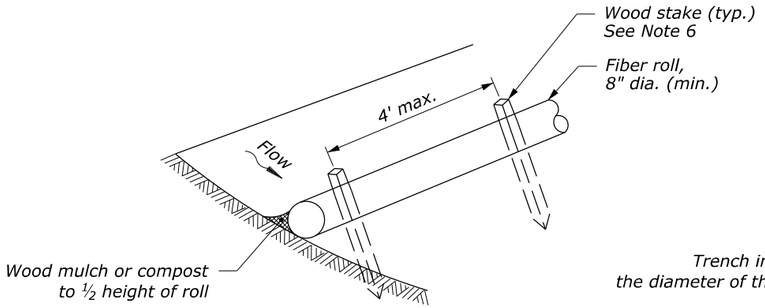
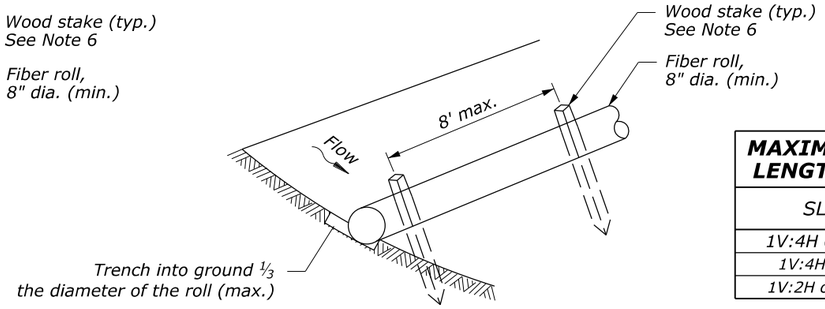
5 February 2026 3:47 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S01



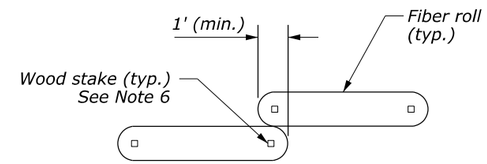
UNTRENCHED INSTALLATION



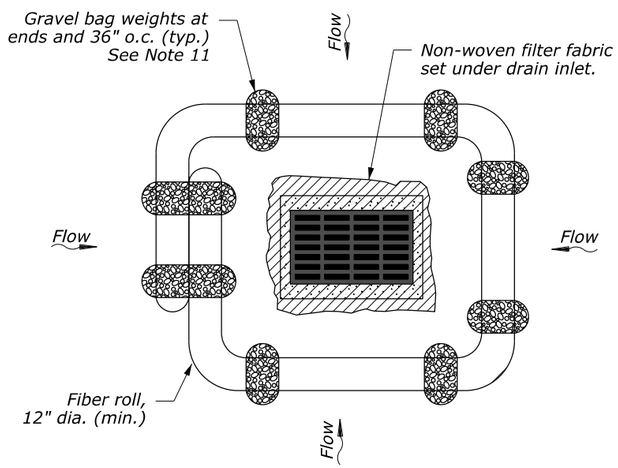
ENTRENCHED INSTALLATION

FIBER ROLL ISOMETRIC VIEW

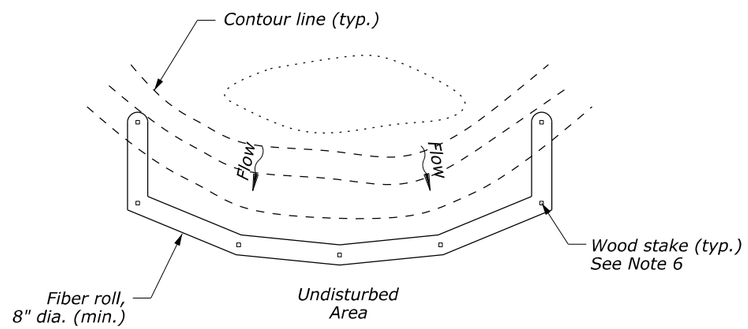
MAXIMUM ALLOWABLE SLOPE LENGTH ABOVE FIBER ROLLS	
SLOPE	MAX INTERVAL
1V:4H or Flatter	20 ft
1V:4H - 1V:2H	15 ft
1V:2H or Steeper	10 ft



FIBER ROLL OVERLAP



INLET PROTECTION



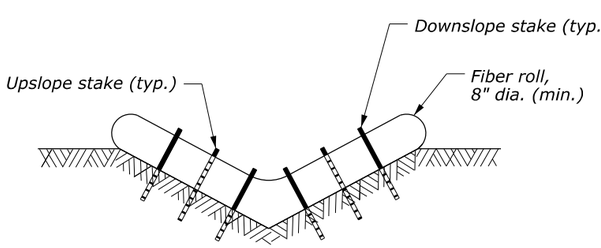
PLAN VIEW

NOTES:

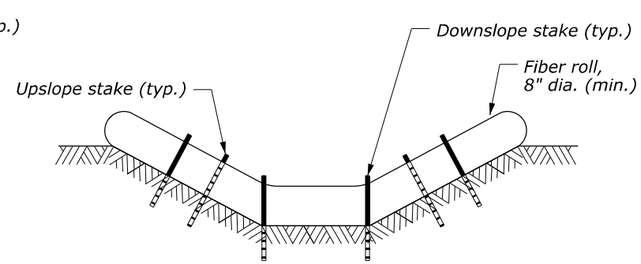
1. Provide fiber rolls meeting the requirements of Subsection 713.12.
2. Use fiber rolls with a minimum 8-inch diameter. For drain inlet protection, use fiber rolls with a minimum 12-inch diameter.
3. Prior to installation, clear all obstructions including rocks, clods, and debris greater than 1-inch that may interfere with proper function of the fiber roll.
4. For untrenched installation, blow or hand place mulch or compost on uphill side of the slope along the fiber roll.
5. Place fiber rolls on level grade and parallel to contours. Extend both ends of the fiber roll at least 8 feet upslope at 45 degrees to the main alignment.
6. Use wood stakes with a minimum nominal cross section of 2- by 2-inch and of sufficient length to attain a minimum of 12 inches into the ground and 3 inches protruding above the roll. Furnish wood stakes meeting the requirements of Subsection 713.08(a).
7. When more than one fiber roll is needed, overlap ends 12 inches minimum and stake.
8. Remove sediment deposits when accumulation is one-half the height of the exposed fiber roll.
9. Replace biodegradable fiber rolls 6 months after installation and photodegradable fiber rolls 12 months after installation.
10. When fiber rolls are required on paved surfaces, use gravel bags to support them as shown on the inlet protection view.
11. Provide gravel bag weights meeting the requirements of Subsection 713.13.

FIBER ROLL CHECK DAM SPACING TABLE		
DITCH GRADE *	CHECK DAM SPACING (S)**	
	8" HIGH	12" HIGH
2%	33'	50'
3%	22'	33'
4%	16'	25'
5%	13'	20'

* Do not install check dams on grades below 2%
** Adjust spacing as approved based on site conditions

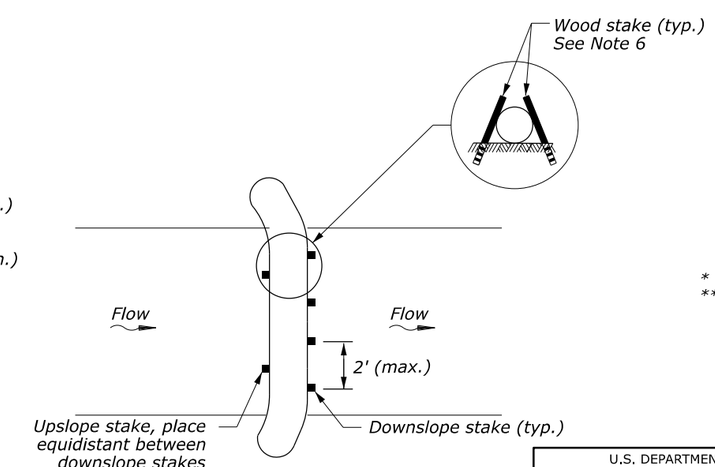


V-DITCH



TRAPEZOIDAL DITCH

FIBER ROLL CHECK DAM CROSS SECTIONS



FIBER ROLL CHECK DAM PLAN VIEW

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

FIBER ROLL

EFLHD DETAIL
E157-04

SPECIFICATION
FP-24, FP-14

APPROVED FOR USE
05/2024

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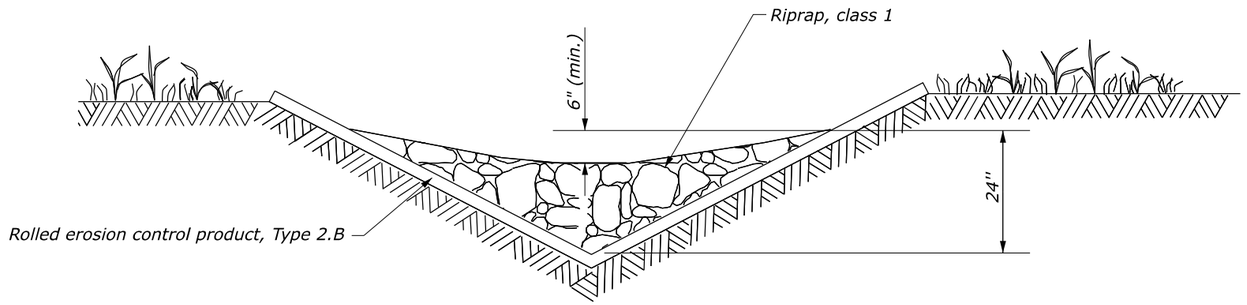
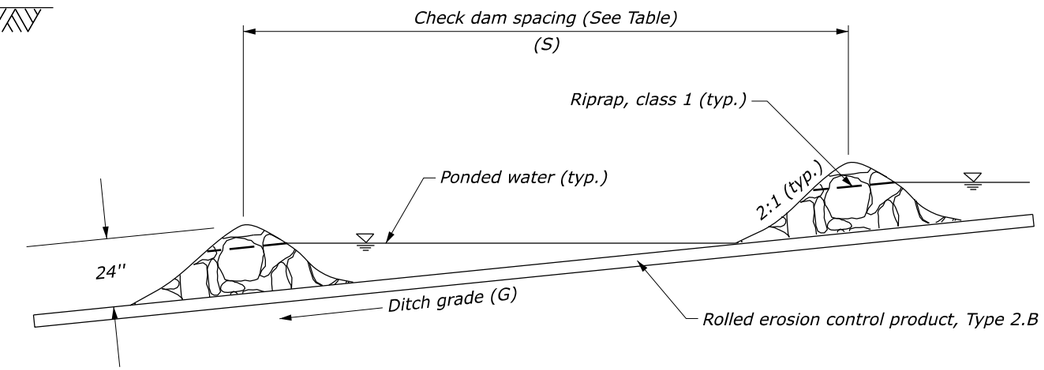
2 September 2025 9:28 AM

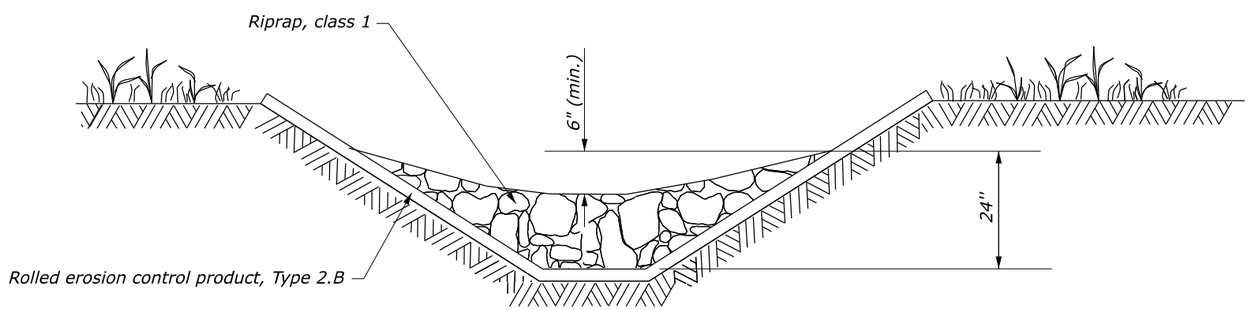
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S02



V-DITCH



DITCH PROFILE VIEW



TRAPEZOIDAL DITCH

DITCH CROSS-SECTION VIEW

CHECK DAM SPACING TABLE	
DITCH GRADE (G)*	SPACING (S) LNFT
2%	75
3%	50
4%	40
5%	30
6%	25

* Do not use Check Dams below 2% or above 6% ditch grades.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

CHECK DAM WITH ROLLED EROSION CONTROL PRODUCT

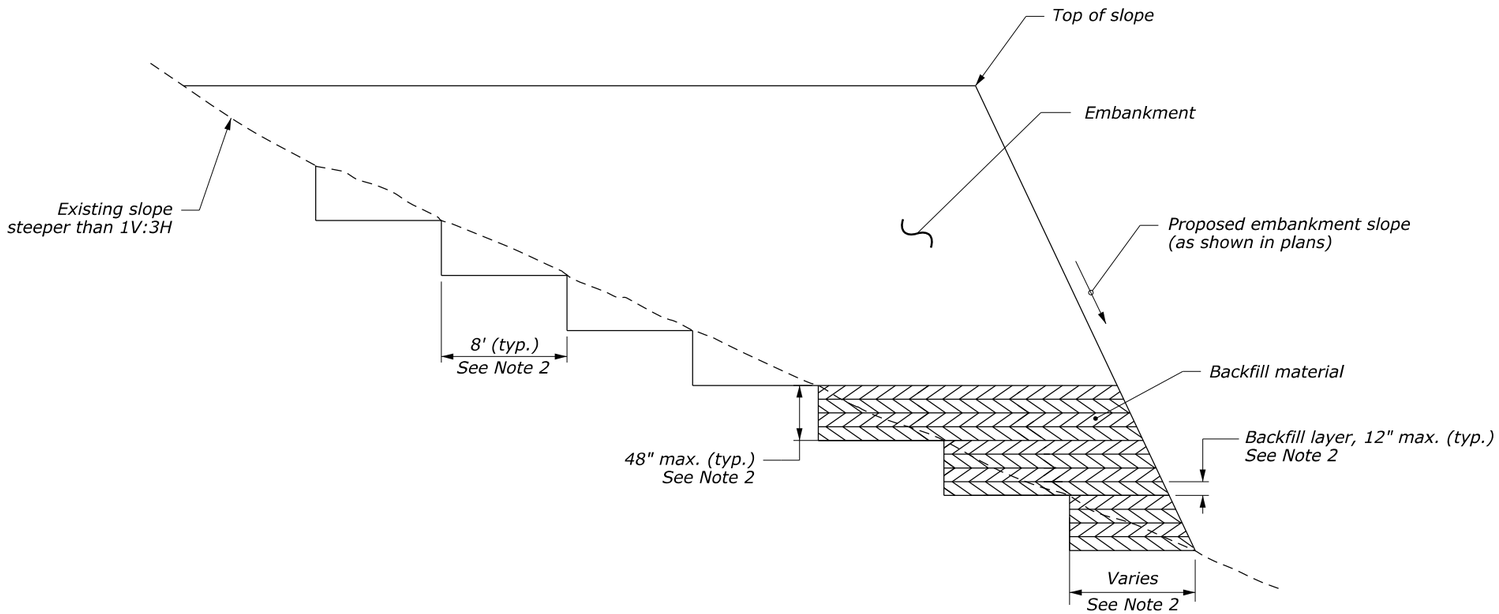
EFLHD DETAIL
E157-06

SPECIFICATION
FP-24, FP-14

APPROVED FOR USE
05/2024

2 September 2025 9:29 AM c:\pw_working\infra03\{Hlads\d0173515\E157-06.dgn [E157-06]

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S03

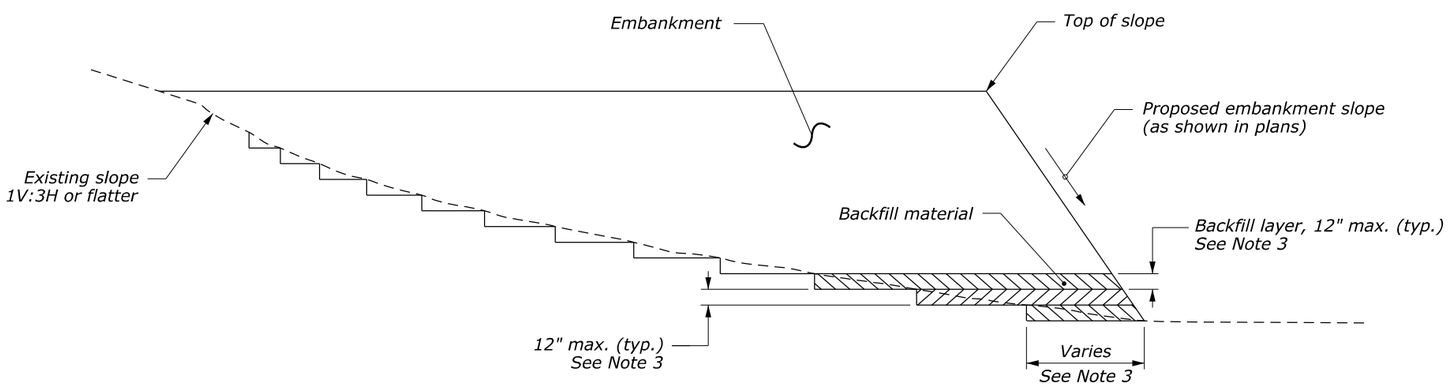


TYPICAL SECTION A

SLOPES STEEPER THAN 1V:3H

NOTES:

1. Where the embankment foundation is on side-hill or another existing embankment, bench the foundation while the embankment is being constructed.
2. For slopes steeper than 1V:3H, refer to Typical Section A. Cut 8-foot wide horizontal benches in the existing slope. Bench the slope as the embankment is placed and compacted in 1-foot thick layers until a backfill height of 4 feet is reached. Excavate and backfill in a similar manner until the top of slope is reached.
3. For slopes 1V:3H or flatter, refer to Typical Section B. Cut into the existing slope until a maximum height of 1 foot is reached, allowing the horizontal distance to vary. Place embankment material. Excavate and backfill in a similar manner until the top of slope is reached.



TYPICAL SECTION B

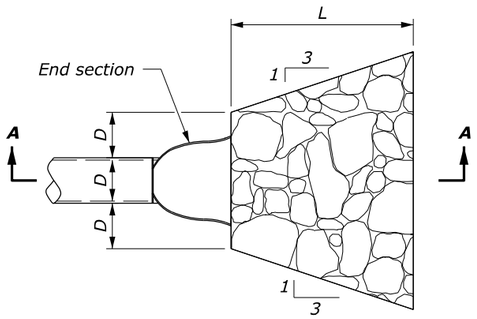
SLOPES 1V:3H OR FLATTER

NO SCALE

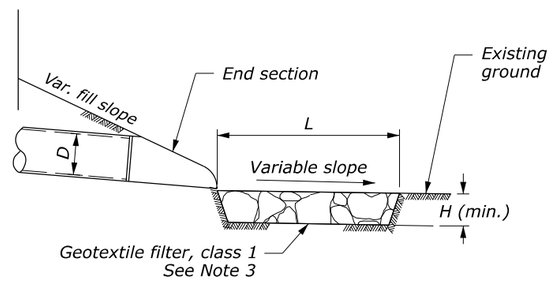
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E204-02
BENCHING FOR EMBANKMENT	SPECIFICATION FP-24, FP-14

5 September 2025 11:49 AM c:\pw_working\infra03\fields\d0173515\E204-02.dgn [E204-02]

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S04

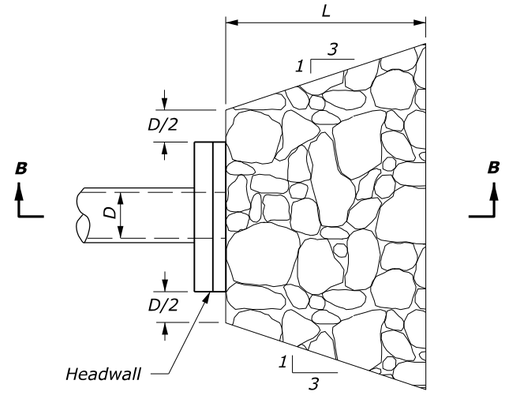


PLAN

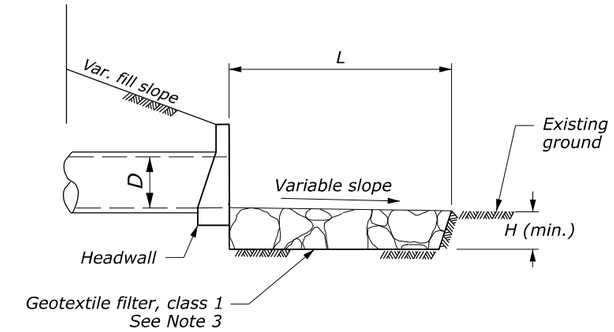


SECTION A-A

CULVERT WITH END SECTION



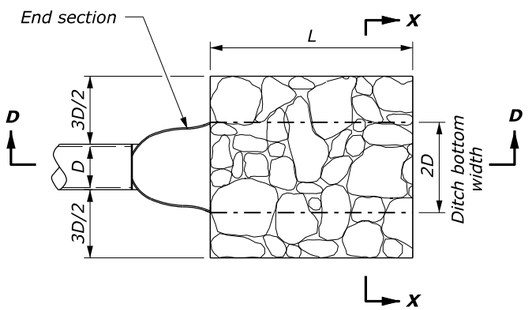
PLAN



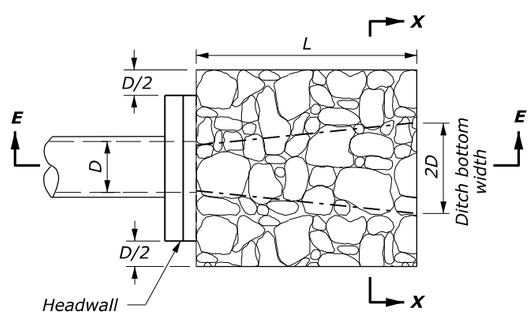
SECTION B-B

CULVERT WITH HEADWALL

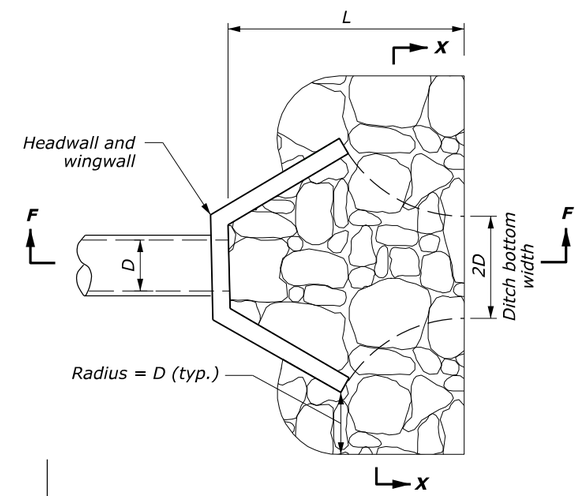
PROTECTIVE APRON AT CULVERT OUTLET WITHOUT DITCH



PLAN



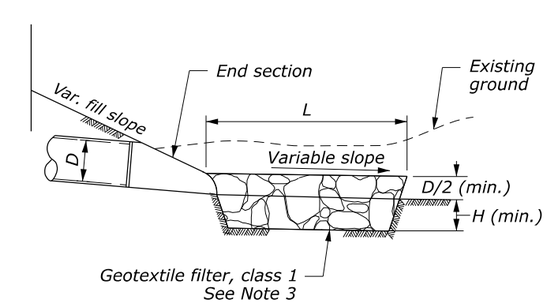
PLAN



PLAN

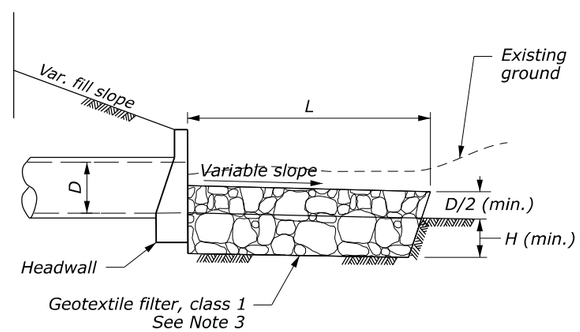
NOTES:

1. Use for aprons serving culverts with slopes of less than 10%.
2. For arch or elliptical pipes, use equivalent diameter for (D) dimension.
3. Provide geotextile filter conforming to Subsection 714.01(c).
4. See Sheet 2 of 2 for dimensions and estimated quantities.



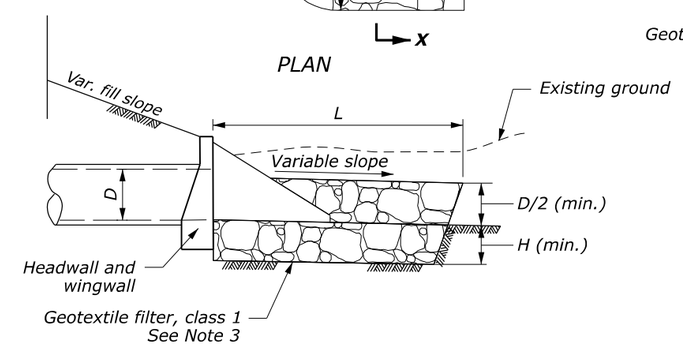
SECTION D-D

CULVERT WITH END SECTION



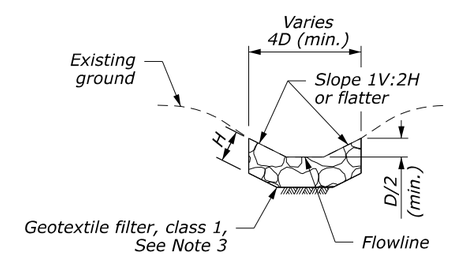
SECTION E-E

CULVERT WITH HEADWALL



SECTION F-F

CULVERT WITH HEADWALL AND WINGWALL



SECTION X-X

PROTECTIVE APRON AT CULVERT OUTLET WITH DITCH

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

PLACED RIPRAP AT CULVERT OUTLETS
Sheet 1 of 2

EFLHD DETAIL
E251-01

SPECIFICATION
FP-24

APPROVED FOR USE
05/2024

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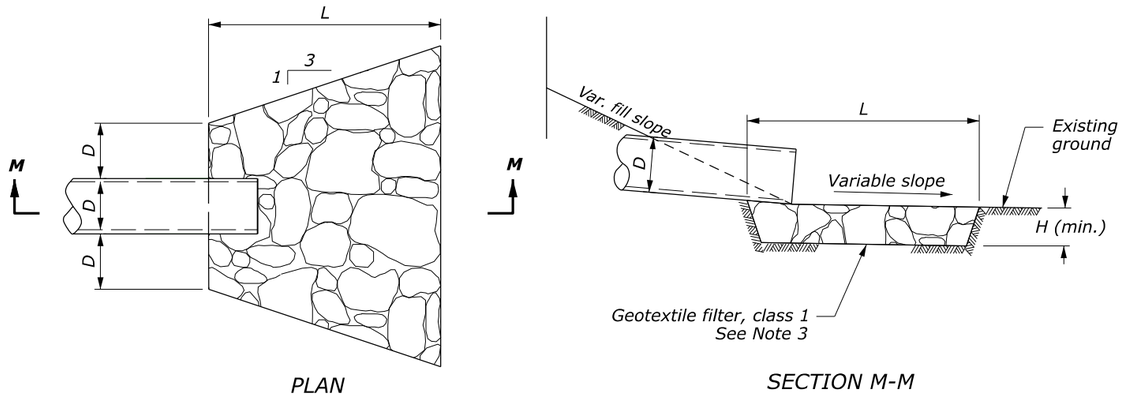
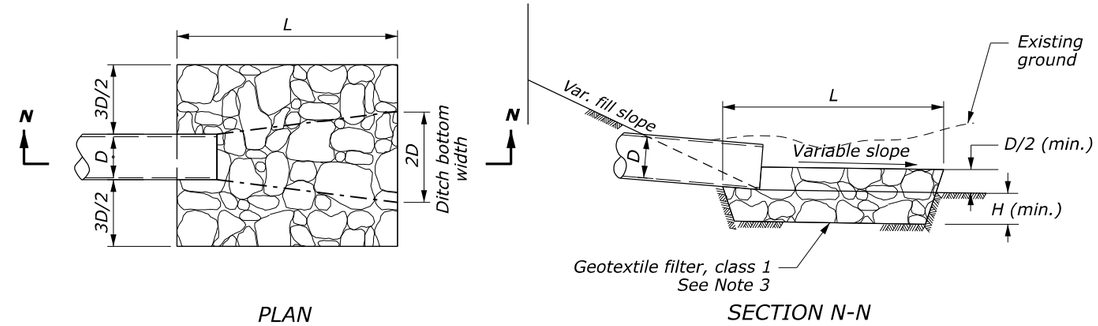
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S05



CULVERT OUTLET WITHOUT DITCH



CULVERT OUTLET WITH DITCH

PROTECTIVE APRON AT CULVERT OUTLET WITH NO END TREATMENT

PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES

					OUTLET WITHOUT DITCH		OUTLET WITH DITCH	
	CULVERT SIZE (D) INCH	RIPRAP CLASS	LENGTH OF APRON (L) FT	DEPTH OF APRON (H) FT	ESTIMATED RIPRAP QUANTITY CUYD	ESTIMATED GEOTEXTILE QUANTITY SQYD	ESTIMATED RIPRAP QUANTITY CUYD	ESTIMATED GEOTEXTILE QUANTITY SQYD
WITH END SECTION	12	2	4	1.5	1	5	0.9	4
	18	2	6	1.5	2.2	9	2	8
	24	2	8	1.5	3.9	13	3.6	12
	30	3	12.5	2	10.8	27	9.3	24
	36	3	15	2	15.6	37	13.3	32
	42	4	21	2.5	34	63	27.2	52
	48	4	24	2.5	44.4	78	35.6	65
WITH HEADWALL	12	2	4	1.5	1.6	6	1.1	5
	18	2	6	1.5	3	10	2	8
	24	2	8	1.5	5.3	16	3.6	12
	30	3	12.5	2	15	32	9.3	24
	36	3	15	2	21.7	43	13.3	32
	42	4	21	2.5	47.6	73	27.2	52
	48	4	24	2.5	62.2	91	35.6	65
WITH HEADWALL AND WINGWALL	12	2	4	1.5	1.6	6	1.1	6.3
	18	2	6	1.5	3	10	2.5	11.1
	24	2	8	1.5	5.3	16	4.5	17
	30	3	12.5	2	15	32	11.6	32
	36	3	15	2	21.7	43	16.7	42.6
	42	4	21	2.5	47.6	73	34.1	68.4
	48	4	24	2.5	62.2	91	44.5	84.9
WITH NO END TREATMENT	12	2	6	1.5	1.7	7	1.3	6
	18	2	8	1.5	3.2	12	2.7	10
	24	2	10	1.5	5.2	17	4.4	15
	30	3	14.5	2	13.2	32	10.7	27
	36	3	17	2	18.5	42	15.1	36
	42	4	23	2.5	38.7	70	29.8	56
	48	4	26	2.5	49.8	86	38.5	70

NOTES:

1. Use for aprons serving culverts with slopes of less than 10%.
2. For arch or elliptical pipes, use equivalent diameter for (D) dimension.
3. Provide geotextile filter conforming to Subsection 714.01(c).

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

PLACED RIPRAP AT CULVERT OUTLETS
Sheet 2 of 2

EFLHD DETAIL
E251-01

SPECIFICATION
FP-24

APPROVED FOR USE
05/2024

5 February 2026 9:42 PM c:\pw_working\infra03\fields\d0173515\E251-01_NEW.dgn [E251-01.2]

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S06

METAL ROUND PIPE CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE FOR HELICAL LOCKSEAM AND WELDED SEAM PIPE CULVERT

STEEL

PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	2⅔" x ½" CORRUGATIONS					3" x 1" CORRUGATIONS					5" x 1" CORRUGATIONS				
		METAL THICKNESS (INCH/GAGE)														
		0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)														
12	12	100	100	100	100	100										
15	12	100	100	100	100	100										
18	12	100	100	100	100	100										
21	12	100	100	100	100	100										
24	12	100	100	100	100	100										
30	12	85	100	100	100	100										
36	12	71	89	100	100	100	81	100	100	100	100					
42	12	61	76	100	100	100	70	87	100	100	100					
48	12	53	66	93	100	100	61	76	100	100	100	54	68	95	100	100
54	12		59	83	100	100	54	68	95	100	100	48	60	85	100	100
60	12			74	97	100	49	61	86	100	100	43	54	76	98	100
66	12				87	100	44	55	78	100	100	39	49	69	89	100
72	12				80	97	40	51	71	92	100	36	45	63	82	100
78	12					87	37	47	66	85	100	33	42	58	75	92
84	12					75	35	43	61	78	96	31	39	54	70	86
90	12						32	40	57	73	90	29	36	51	65	80
96	12							38	53	69	84		34	48	61	75
102	18							36	50	65	79		32	45	57	71
108	18								47	61	75			42	54	67
114	18								45	58	71			40	52	63
120	18								43	55	67			38	49	60
126	18									52	64				47	57
132	18									50	61				44	54
138	18									48	58				42	52
144	18										56					50

ALUMINUM

PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	2⅔" x ½" CORRUGATIONS					3" x 1" CORRUGATIONS				
		METAL THICKNESS (INCH/GAGE)									
		0.060/16	0.075/14	0.105/12	0.135/10	0.164/8	0.060/16	0.075/14	0.105/12	0.135/10	0.164/8
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)									
12	12	100	100	100	100	100					
15	12	100	100	100	100	100					
18	12	100	100	100	100	100					
21	12	88	100	100	100	100					
24	12	77	97	100	100	100					
30	12	62	77	100	100	100	71	89	100	100	100
36	12	52	64	90	100	100	59	74	100	100	100
42	12	44	55	77	99	100	51	64	89	100	100
48	12			67	87	100	44	56	78	100	100
54	18			54	71	88	39	50	69	93	100
60	18				57	72	35	45	62	83	98
66	18					58	32	40	56	76	89
72	18					45	30	37	55	70	82
78	24							34	48	64	75
84	24								44	59	70
90	24								41	62	65
96	24								38	51	61
102	24									46	55
108	24									42	50
114	24										45
120	24										40

NOTE:

1. When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
2. Fill heights exceeding 100 feet require special analysis by the CO.
3. The fill heights in the table are for helical lockseam and welded seam pipe only. Fill heights for culvert pipe with annular corrugations are more restrictive than those of helical lockseam and welded seam pipe. Obtain approval before furnishing annular corrugation pipe.
4. For flexible pavement and aggregate surface roadways, measure minimum cover from the top of the pipe culvert to the bottom of the roadway subgrade. For rigid pavements, measure minimum cover from the top of the pipe culvert to the top of the pavement. For all roadway surface types, measure maximum fill height from the top of the pipe culvert to the top of the pavement.

METAL PIPE ARCH CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE FOR HELICAL LOCKSEAM AND WELDED SEAM PIPE CULVERT

STEEL

PIPE ARCH SIZE SPAN x RISE INCHES	EQUI-VALENT DIAMETER INCHES	MINIMUM CORNER RADIUS INCHES	MINIMUM COVER INCHES	2⅔" x ½" CORRUGATIONS					3" x 1" CORRUGATIONS				5" x 1" CORRUGATIONS			
				METAL THICKNESS (INCH/GAGE)												
				0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.079/14	0.109/12	0.138/10	0.168/8	0.079/14	0.109/12	0.138/10	0.168/8
				MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)												
17 x 13	15	3	12	13												
21 x 15	18	3	12	12												
24 x 18	21	3	12	13												
28 x 20	24	3	12	13												
35 x 24	30	3	12	12												
42 x 29	36	3.5	12	12												
49 x 33	42	4	12		12											
57 x 38	48	5	12			12										
60 x 46	54	8	15							21				21		
64 x 43	54	6	12			12										
66 x 51	60	9	15							21				21		
71 x 47	60	7	12				12									
73 x 55	66	12	18							20				20		
77 x 52	66	8	12					12								
81 x 59	72	14	18						17				17			
83 x 57	72	9	12					12								
87 x 63	78	14	18						17				17			
95 x 67	84	16	18						17				17			
103 x 71	90	16	18							17			17			
112 x 75	96	18	21							16				16		
117 x 79	102	18	21							16				16		
128 x 83	108	18	24								16				16	
137 x 87	114	18	24								16				16	
142 x 91	120	18	24									16				16

ALUMINUM

PIPE ARCH SIZE SPAN x RISE INCHES	EQUI-VALENT DIAMETER INCHES	MINIMUM CORNER RADIUS INCHES	MINIMUM COVER INCHES	2⅔" x ½" CORRUGATIONS				3" x 1" CORRUGATIONS			
				METAL THICKNESS (INCH/GAGE)							
				0.060/16	0.075/14	0.105/12	0.135/10	0.060/16	0.075/14	0.105/12	0.135/10
				MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)							
17 x 13	15	3	12	13							
21 x 15	18	3	12	12							
24 x 18	21	3	12	13							
28 x 20	24	3	12		13						
35 x 24	30	3	12		12						
42 x 29	36	3.5	15			12					
49 x 33	42	4	15			12					
57 x 38	48	5	15				12				
60 x 46	54	8	15					21			
64 x 43	54	6	18				12				
66 x 51	60	9	18					21			
73 x 55	66	12	18						20		
81 x 59	72	14	21							17	
87 x 63	78	14	21							17	
95 x 67	84	16	24							17	
103 x 71	90	16	24								17

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

METAL PIPE CULVERT

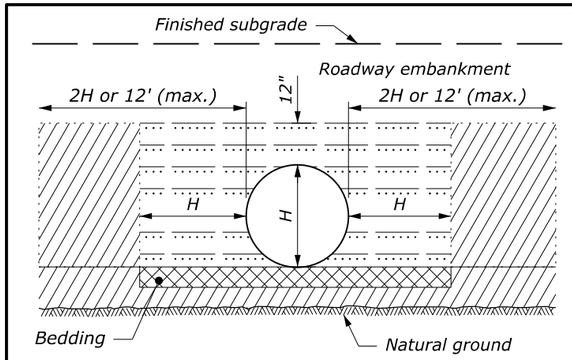
FLH STANDARD
602-1

SPECIFICATION
FP-24, FP-14

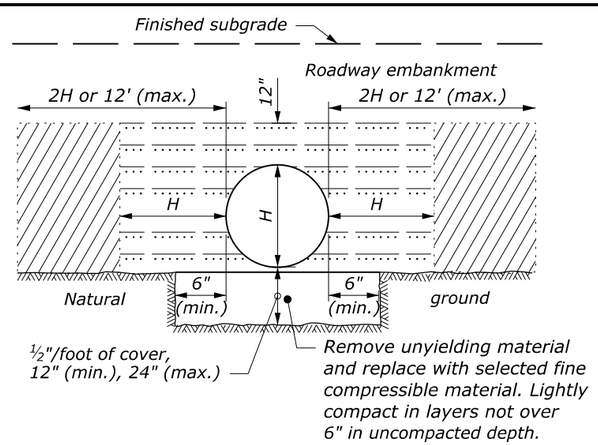
APPROVED FOR USE
8/2024

c:\pw_working\infra03\Fields\d0173515\Std602-1.dgn [Std 602-1]
5 February 2026 8:16 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S07

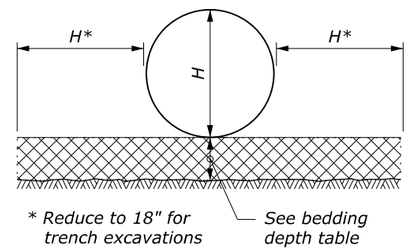


ABOVE NATURAL GROUND



ON UNYIELDING MATERIAL

BEDDING DEPTH	
PIPE SIZE (H)	DEPTH
12" to 54"	4"
> 54"	6"



PIPE BEDDING

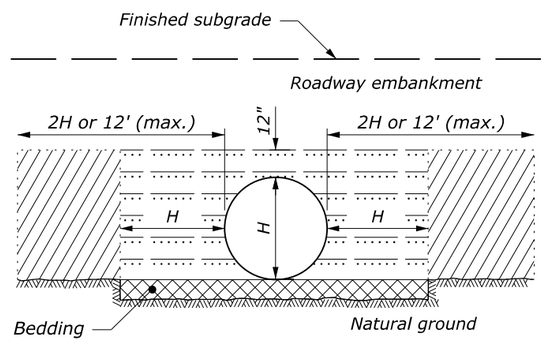
NOTE:

1. When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.

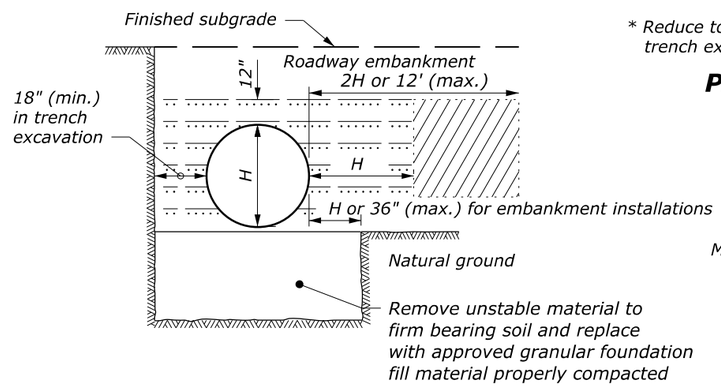
2. H equals the diameter of all round pipe culverts or the rise dimension of all pipe arch culverts.

3. See Section 704 for bedding and backfill requirements.

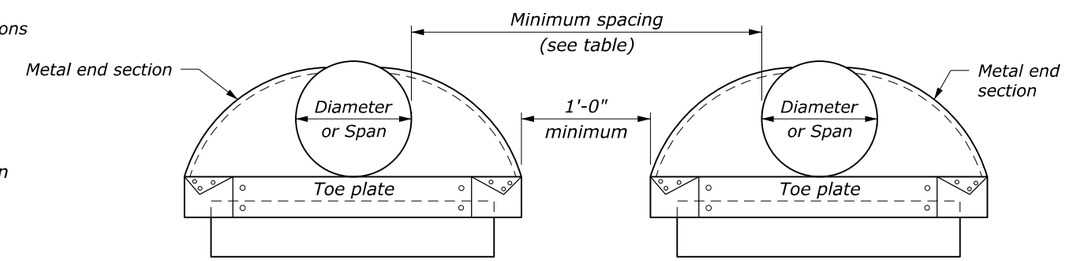
MINIMUM SPACING	
DIAMETER or SPAN	SPACING
UP to 48"	24"
48" and UP	Half diameter or span or 36", whichever is less



ON NATURAL GROUND

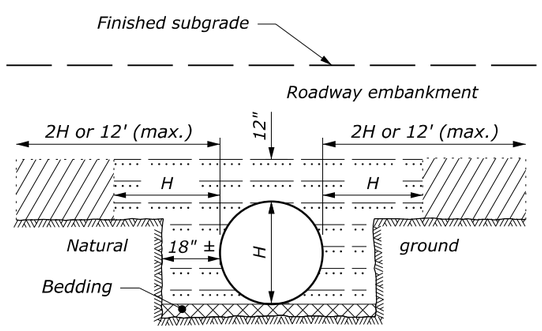


ON UNSTABLE MATERIAL

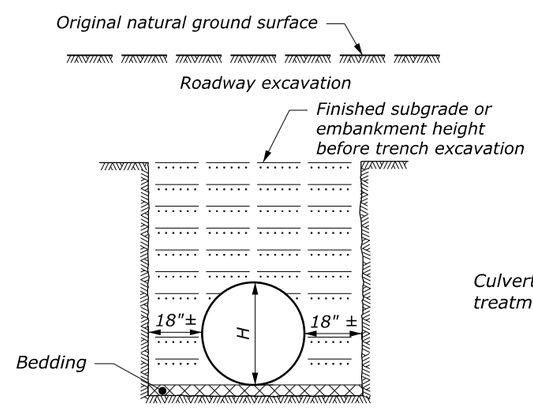


ELEVATION

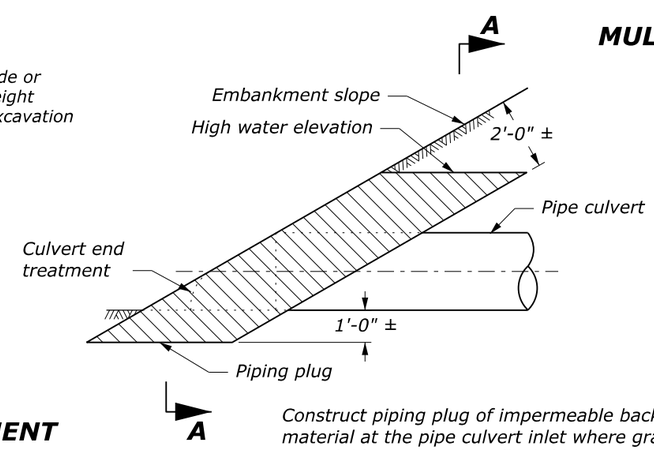
MULTIPLE PIPE INSTALLATION

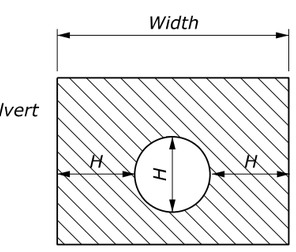


ABOVE AND BELOW NATURAL GROUND



BELOW NATURAL GROUND OR TRENCH EXCAVATION IN EMBANKMENT





SECTION A-A

Construct piping plug of impermeable backfill material at the pipe culvert inlet where granular material is used for backfill. Width may be adjusted to tie into impervious material.

PIPING PLUG

LEGEND:

- Bedding material (uncompacted)
- Embankment material placed in layers not exceeding 6" compacted depth.
- Compacted backfill material placed in layers not exceeding 6" compacted depth; or flowable backfill according to Section 614.
- Impermeable backfill material.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

METAL AND PLASTIC PIPE CULVERT BEDDING

FLH STANDARD 602-3

SPECIFICATION FP-24

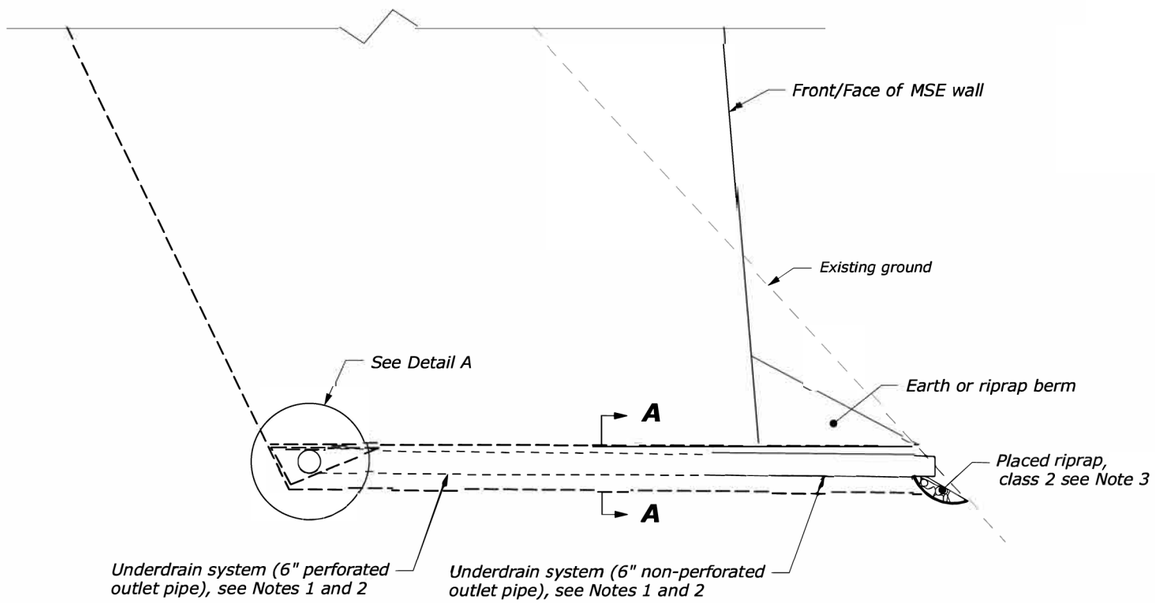
APPROVED FOR USE 1/2024

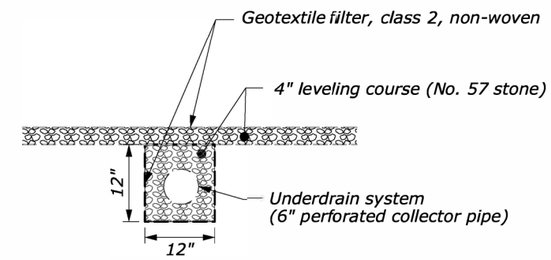
c:\pw_working\infra03\lfwdss\d0173515\Std602-3.dgn [Std 602-3]
2 February 2026 2:30 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S08

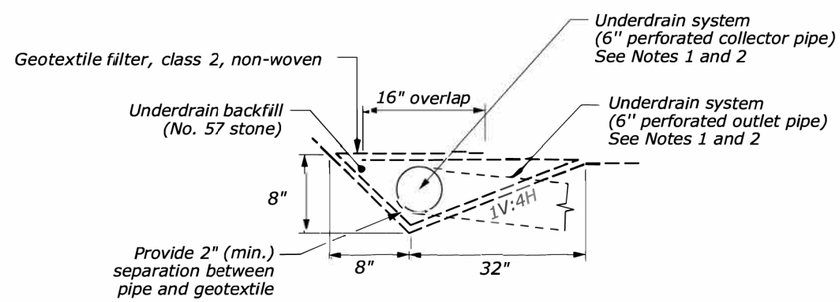
NOTES:

1. Install a minimum of one outlet underdrain at the low point or as directed.
2. Place non-perforated outlet pipes and perforated collector pipes at a minimum 2% slope.
3. At the end of each outlet pipe, place a riprap (class 2) pad with a dimensioning of 2'W x 2'L x 2'D





SECTION A-A



DETAIL A - COLLECTOR PIPE

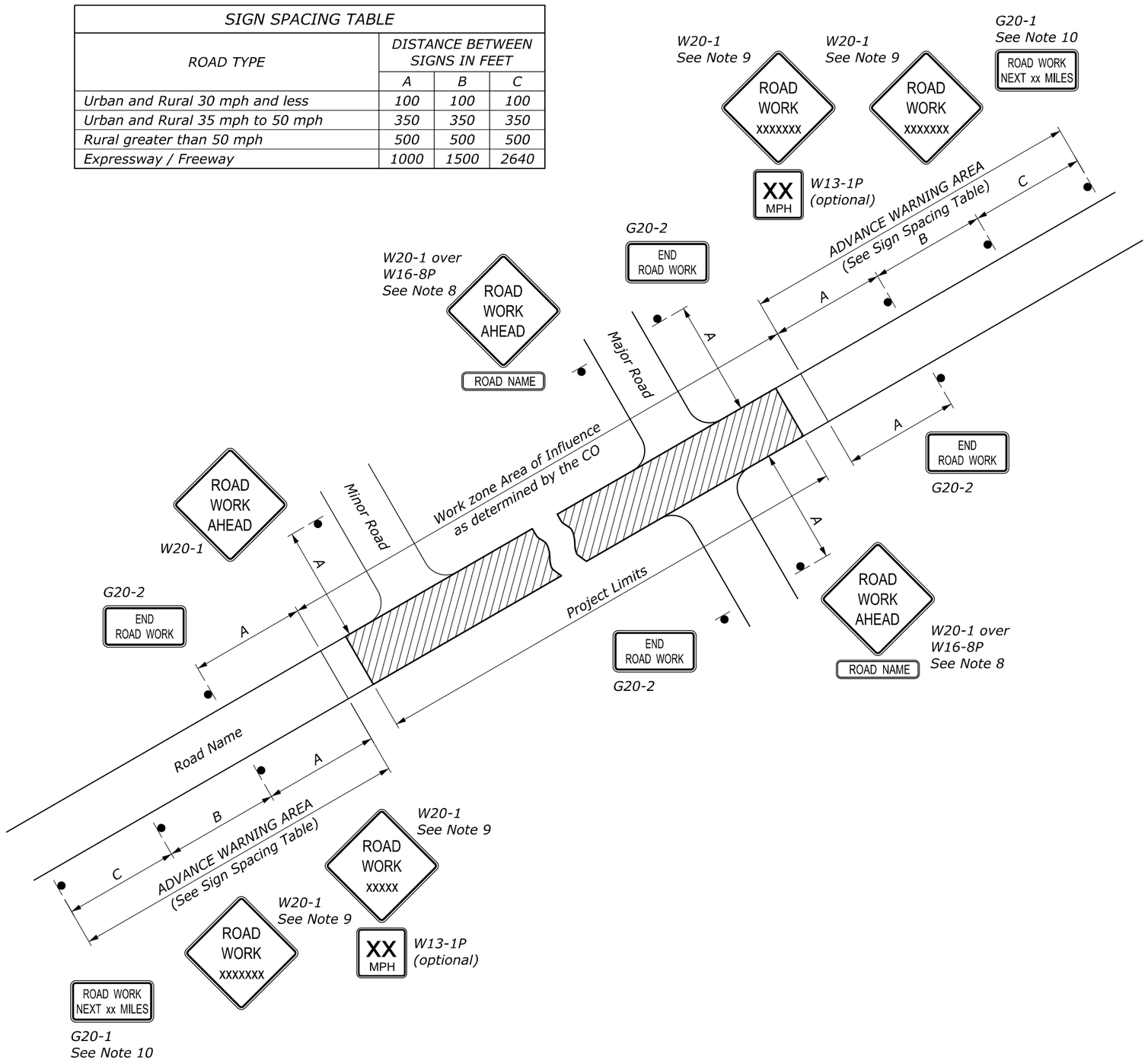
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E605-A
UNDERDRAIN	SPECIFICATION FP-24

c:\pw_working\infra03\rakes\d0173515\E605-A.dgn [E605-A]
5 March 2026 3:44 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S09

SIGN SPACING TABLE			
ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban and Rural 30 mph and less	100	100	100
Urban and Rural 35 mph to 50 mph	350	350	350
Rural greater than 50 mph	500	500	500
Expressway / Freeway	1000	1500	2640



NOTE:

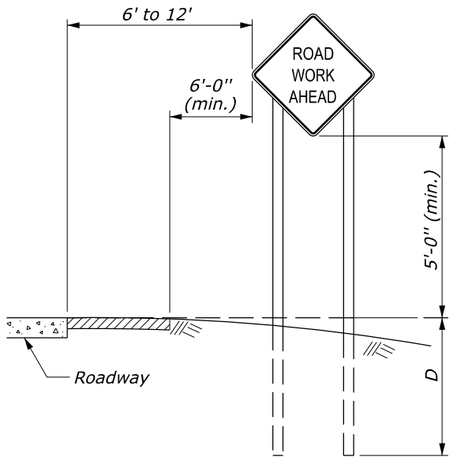
1. Erect all project advance warning signs before starting construction work.
2. Not all details shown on the temporary traffic control sheets may be applicable to this project. The Contractor may add or delete information and details in this traffic control plan as necessary to accommodate actual operations.
3. Where advance warning signs, placed as shown, interfere with permanent signs, locate the warning signs to fit field conditions as approved. Vary messages as required.
4. Install advisory speed plaques under the W20 series warning signs as needed to indicate a maximum recommended speed through the construction area.
5. Ensure all sign supports exposed to traffic are crashworthy.
6. Maintain two-way traffic during all non-work hours except as approved.
7. Do not store traffic control devices along the roadway when not in use. Cover post-mounted signs when not applicable.
8. If W20-1 is placed on a roadway other than that on which the actual construction work occurs, include a supplementary plaque indicating the name of the road on which the construction does occur (applies to major roads only).
9. The message on the W20-1 signs may be ROAD WORK AHEAD or may specify the distance to the work area in feet or in miles. Install an additional W20-1 sign when approach speeds exceed 50 mph. When used, place the two W20-1 signs "B" feet apart according to the Sign Spacing Table.
10. For work zones that are 2 miles or more in length, install G20-1 signs at each end of the project. Show the distance on the G20-1 sign to the nearest whole mile.
11. If signing on a roadway under a jurisdiction other than the client agency, verify that an encroachment permit has been obtained.
12. State standards may be used as an alternative if approved.

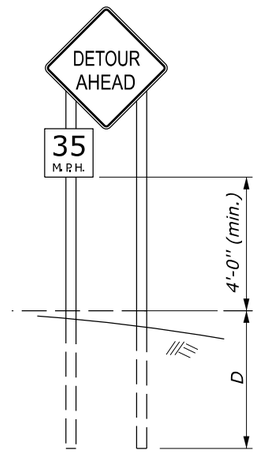
NO SCALE

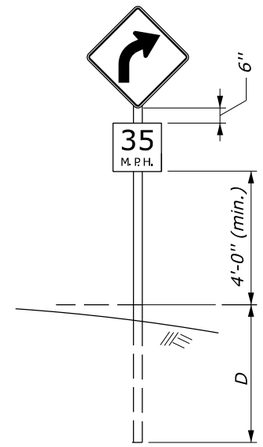
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 635-1
TEMPORARY TRAFFIC CONTROL ADVANCE SIGNING	SPECIFICATION FP-24
	APPROVED FOR USE 2/2024

c:\pw_working\infra03\Halds\d0173515\Std635-1.dgn [Std 635-1]
2 February 2026 2:41 PM

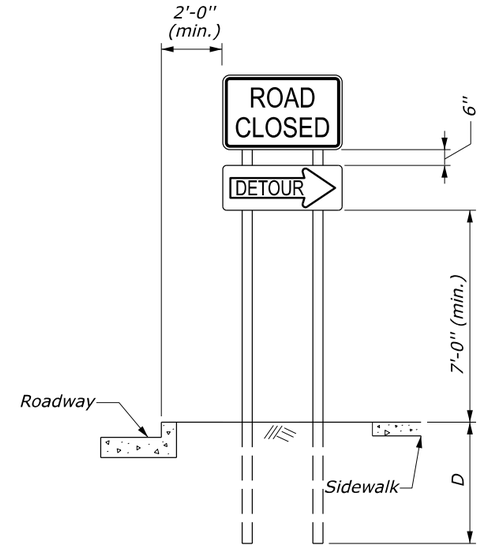
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	S10







RURAL AREA

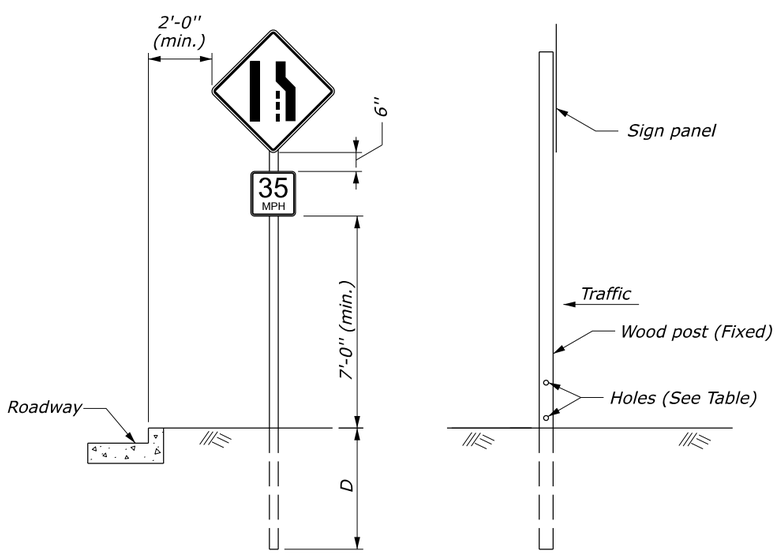


URBAN AREA

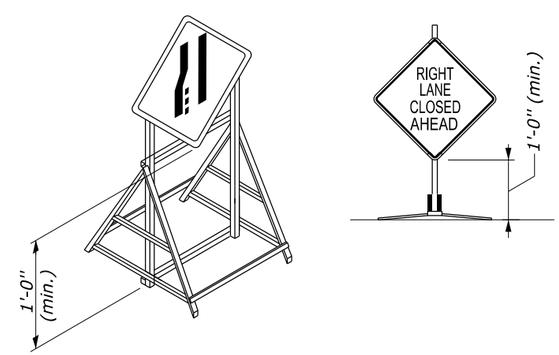
FIXED ROADWAY SIGNS

NOTES:

1. Mount signs that are wider than 3 feet or larger than 10 square feet on double posts.
2. All lumber dimensions are nominal.
3. Submit alternate details for portable signs. Ensure sign mounts hold the sign face in a vertical plane. Portable signs may be mounted lower than fixed signs when approved. Ensure all portable sign supports are crashworthy.
4. When parking is permitted within 200 feet of the sign, mount the sign a minimum of 7 feet above the pavement surface.
5. When approved by the CO and the Utility Company, utility poles may be used for sign mounting.
6. For 4- by 6-inch and greater posts, see the Breakaway Sign Support View. If breakaway design cannot be used due to post spacing, place the sign outside the clearzone or shield with a barrier. Do not place holes in posts of non-breakaway signs.
7. Signs requiring 6- by 6-inch and greater posts are considered non-breakaway if multiple posts are required and the posts cannot be spaced a minimum of 7 feet apart.



BREAKAWAY SIGN SUPPORT
(FIXED SIGNS 4'' X 6'' AND GREATER POSTS)
See Notes 6 and 7



PORTABLE SIGNS
See Notes 3 and 4

POST SIZE TABLE

POST SIZE	D	HOLE DIAMETER	MAXIMUM SIGN AREA (SQFT)			
			1 Post	2 Post	3 Post	4 Post
4'' x 4''	4'	None Required	10	20		
4'' x 6''	4'	1.5''		35	50	70
6'' x 6''	5'	2''		50	75	100
6'' x 8''	5'	3''		85	125	165

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

EFLHD DETAIL
E635-01

SPECIFICATION
FP-24, FP-14

APPROVED FOR USE
06/2024

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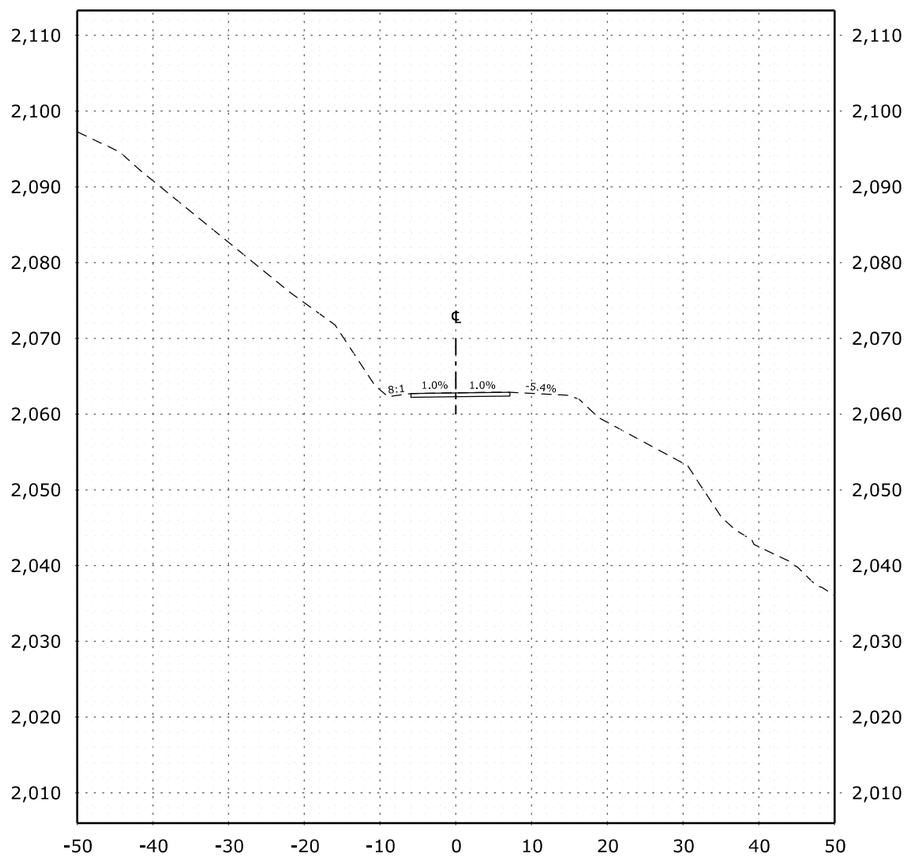
3 February 2026 9:38 AM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T01



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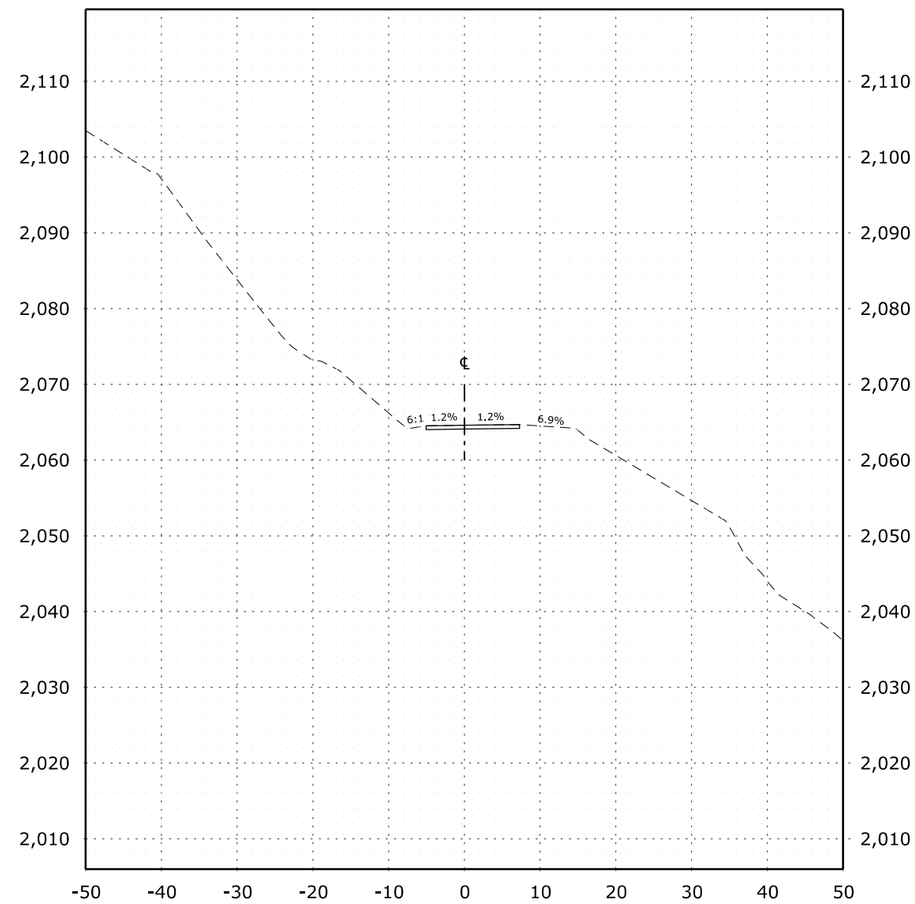

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Des Grade = 2,064.60

FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD
MP 0.40

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5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
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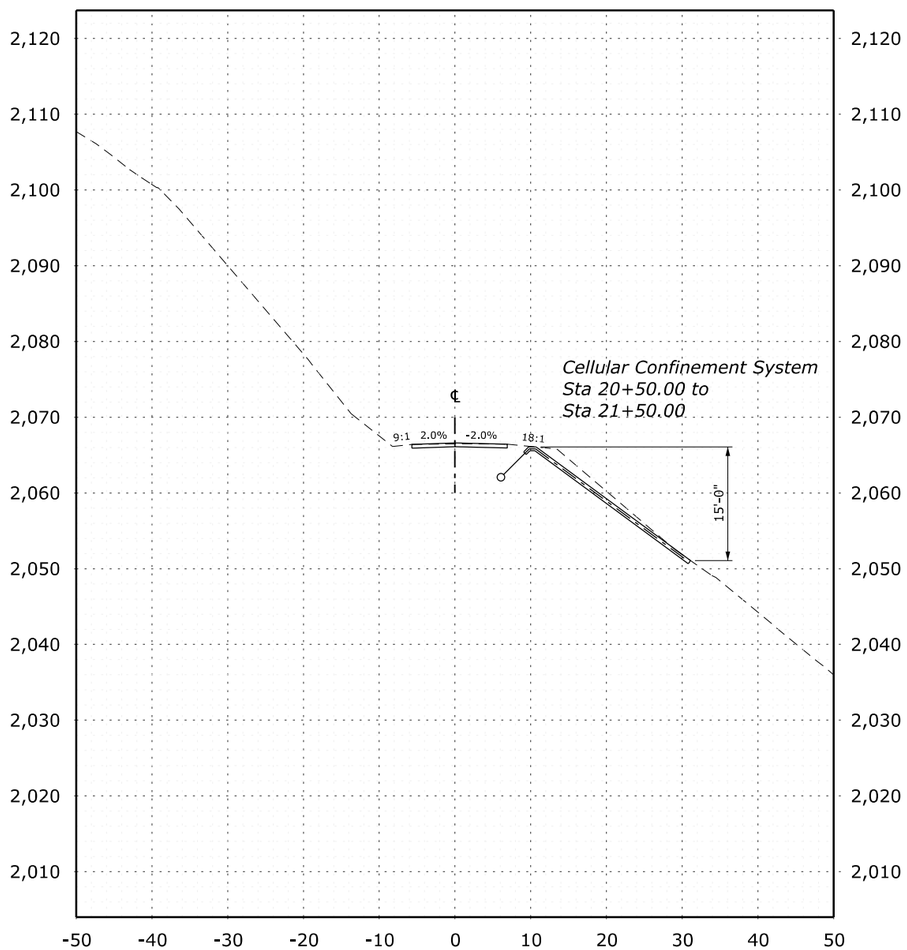

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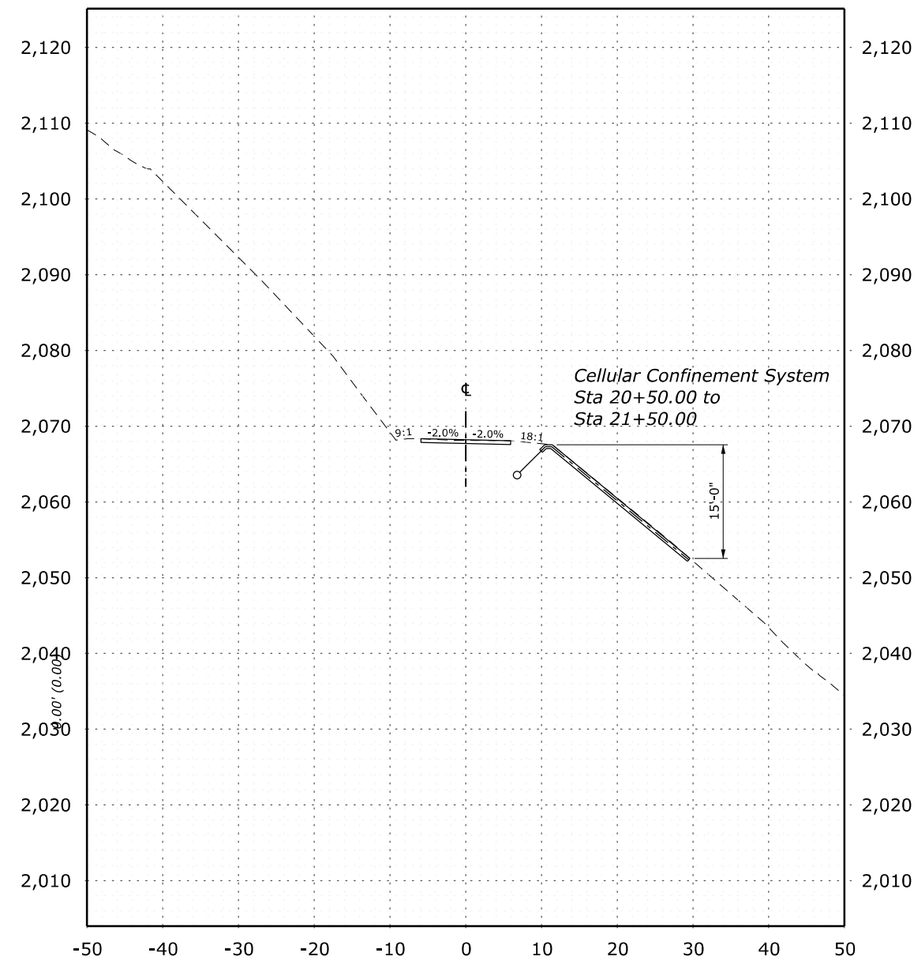

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FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 0.40

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5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
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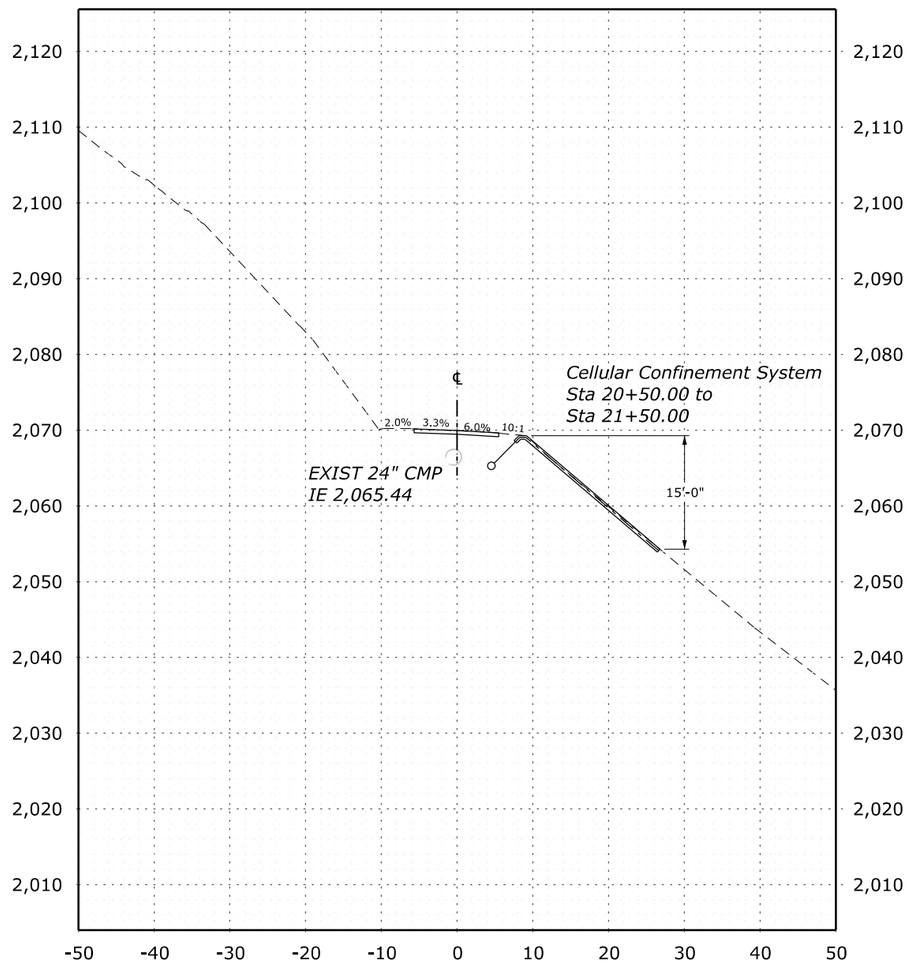

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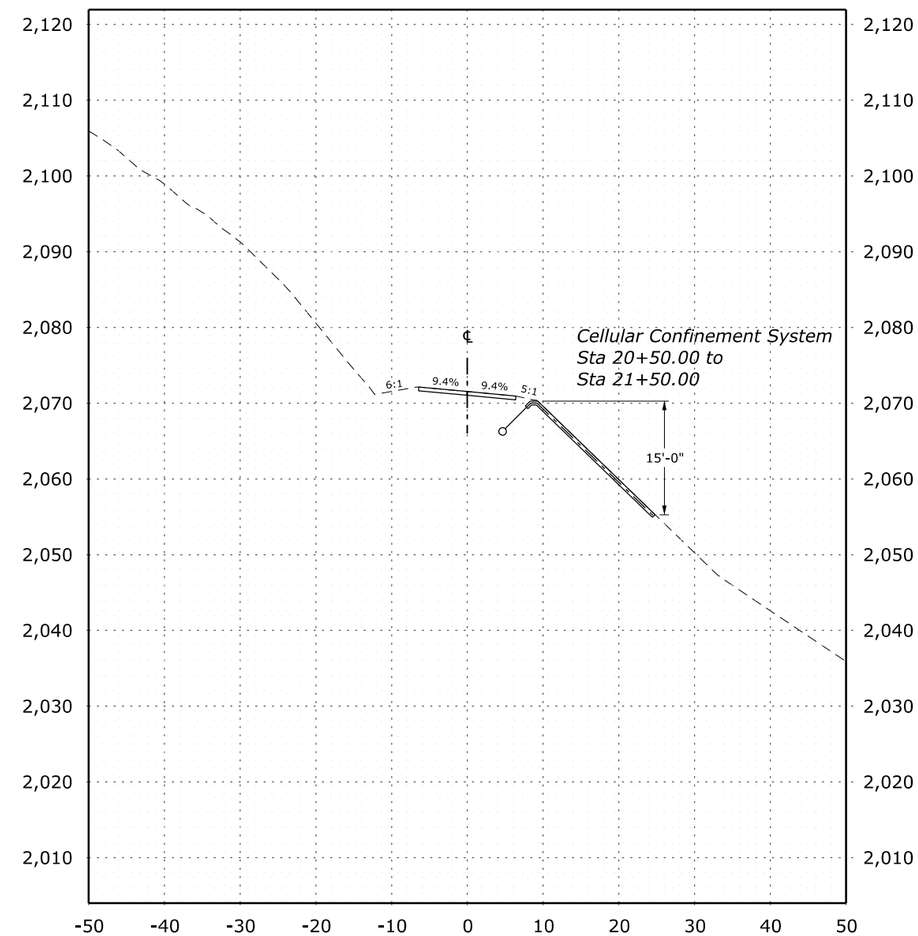

21+00.00
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FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 0.80

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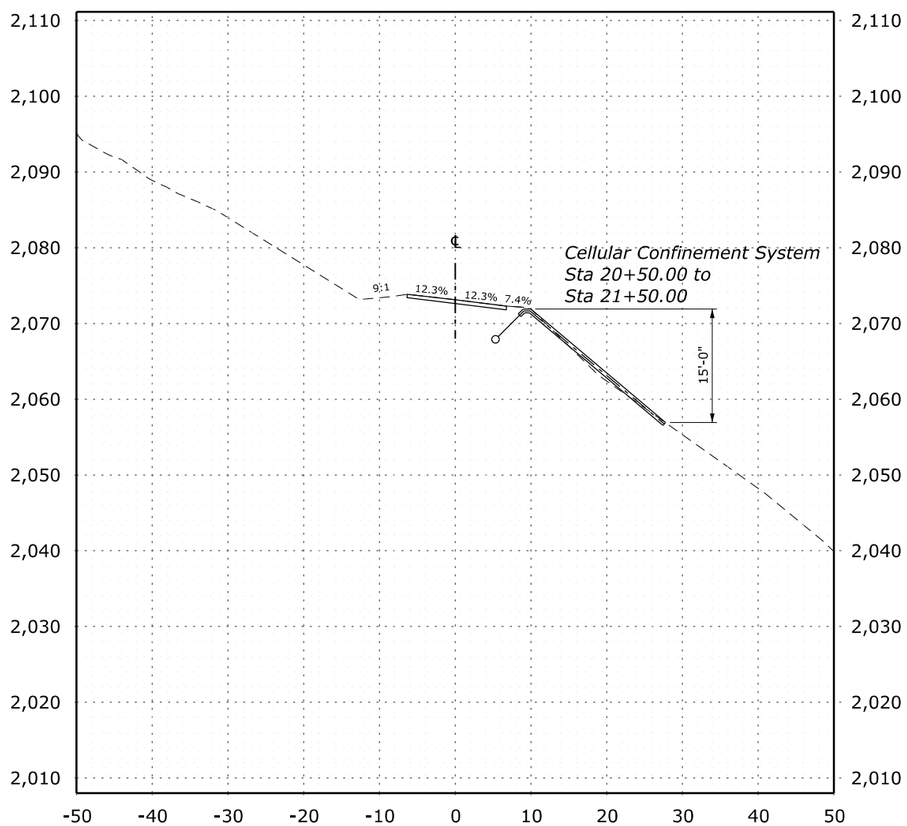
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T04



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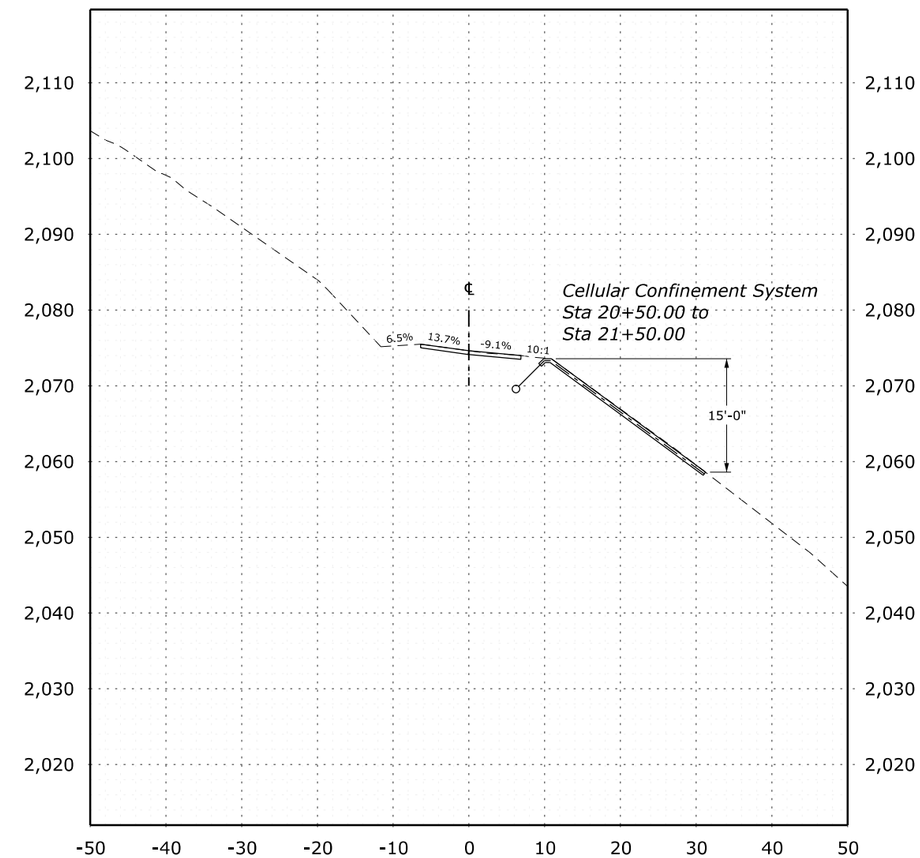

21+40.00
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FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 0.40

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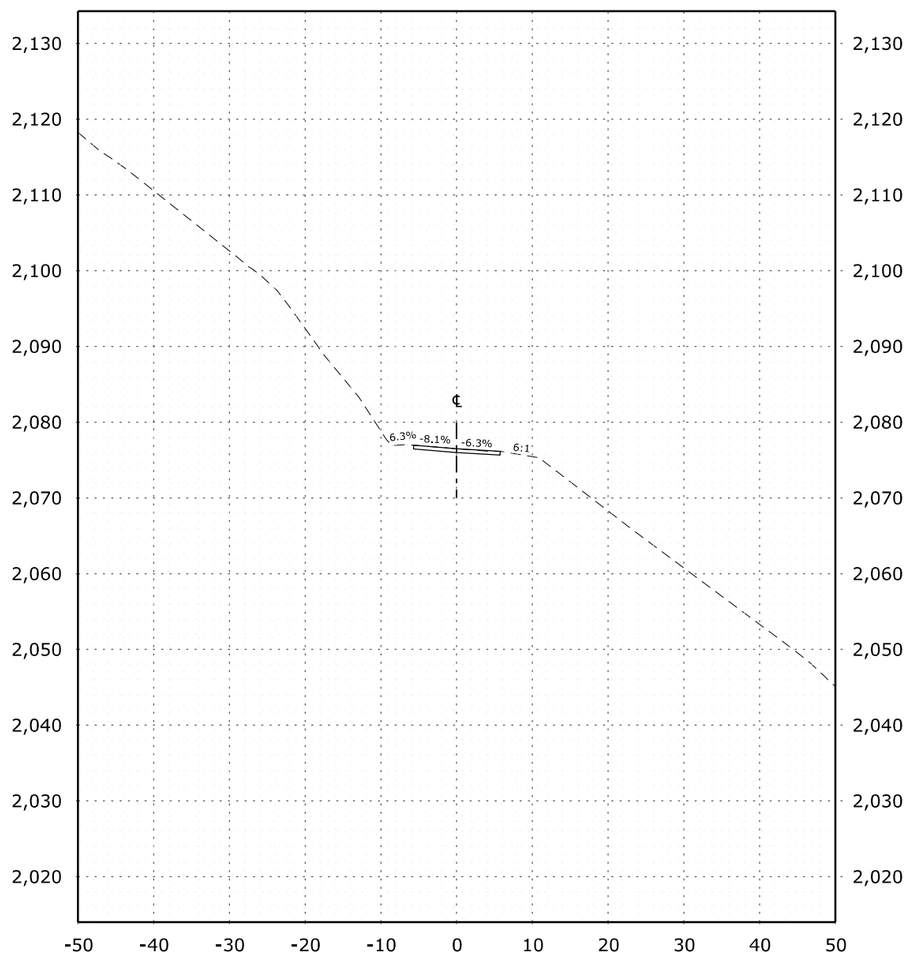
PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T05



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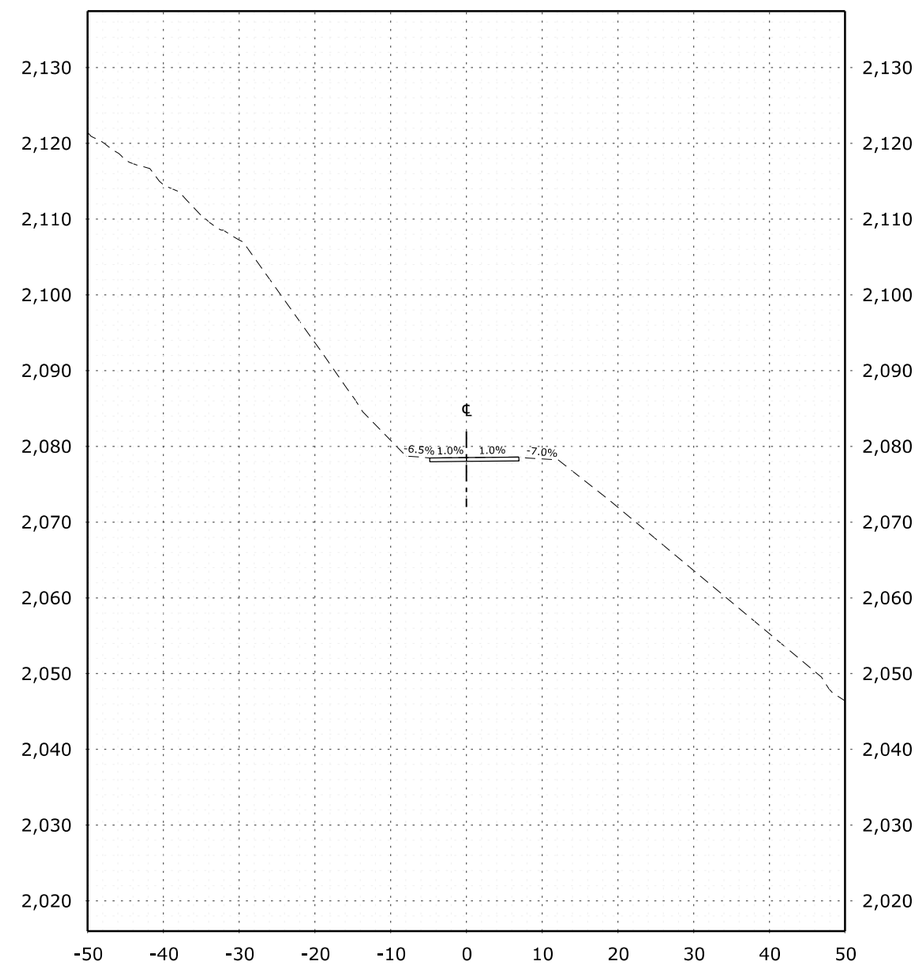

21+80.00
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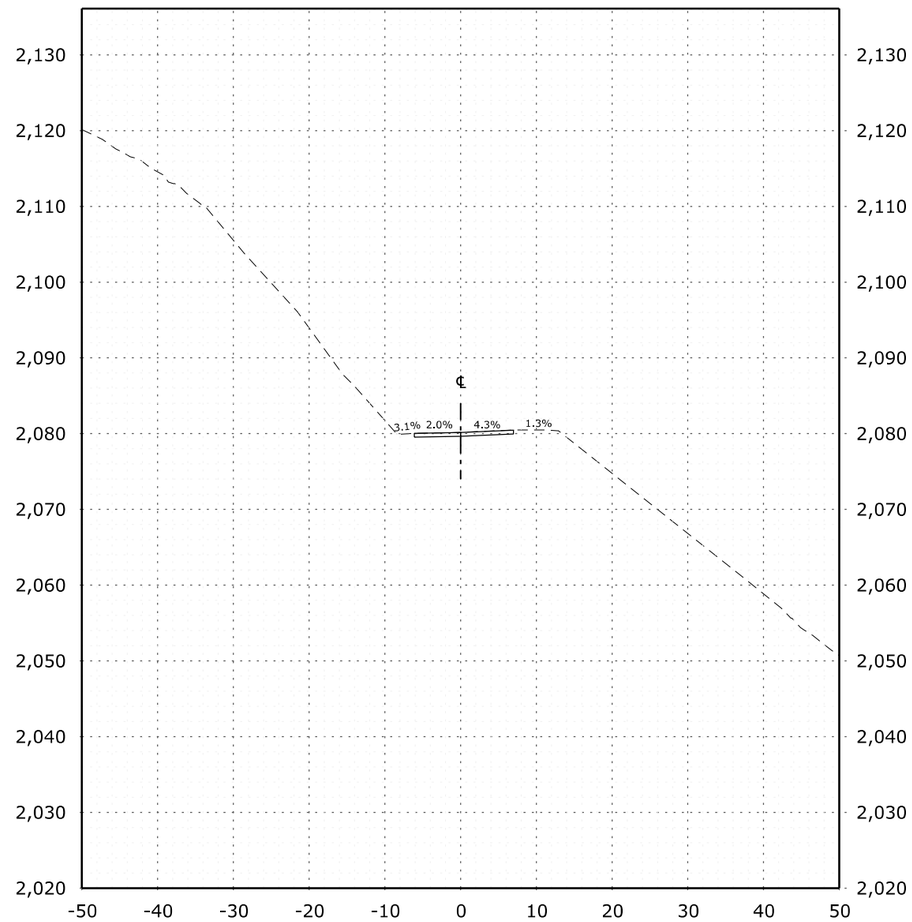
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 0.40

c:\pw_working\infra03\ifields\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [Briar603]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T06



22+00.00
Des Grade = 2,080.16

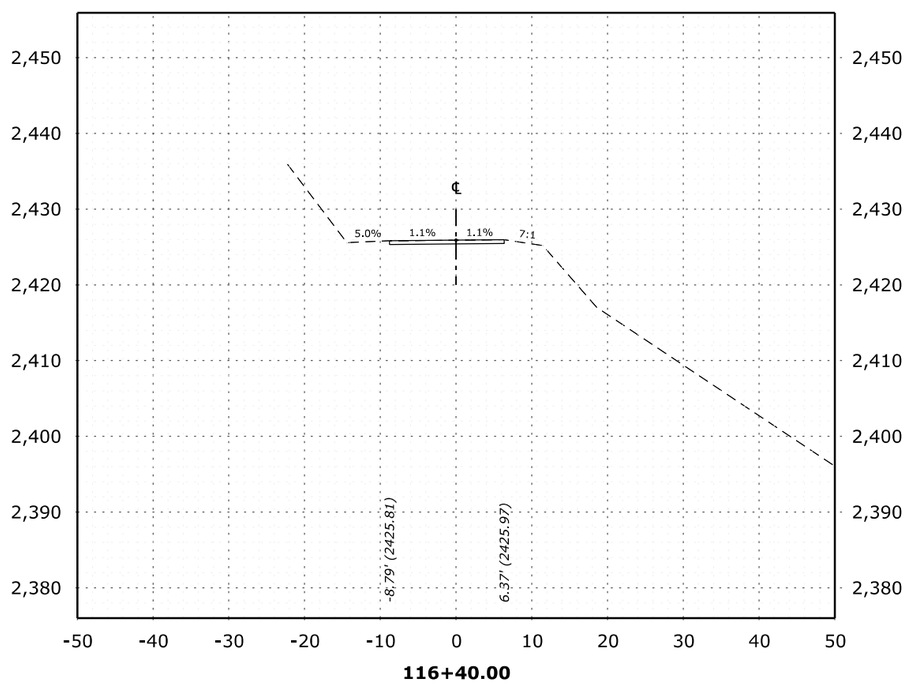
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 0.40

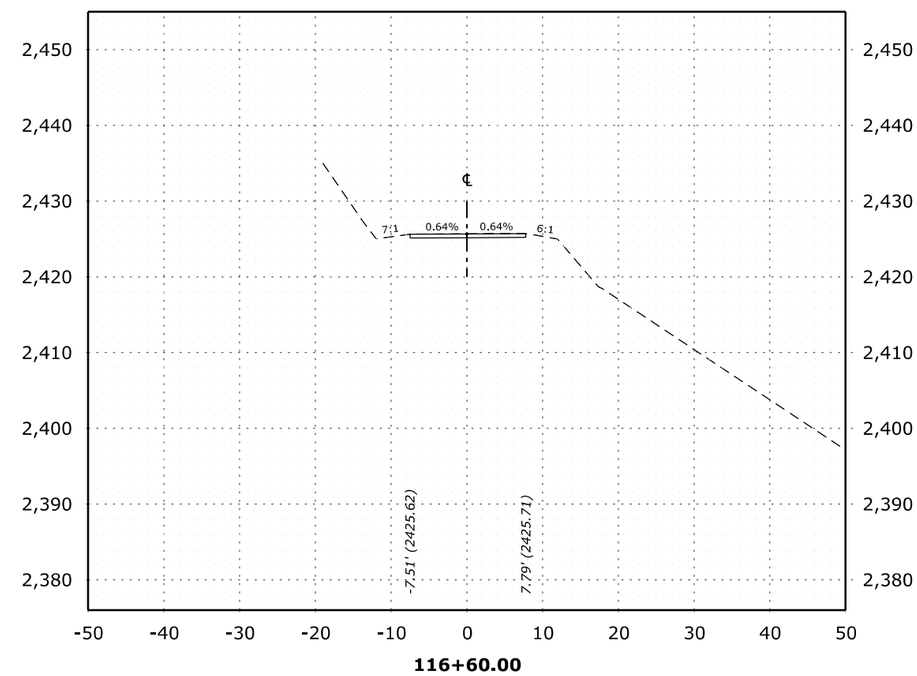
c:\pw_working\infra03\ifields\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [Briar604]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T07



116+40.00

Des Grade = 2425.90



116+60.00

Des Grade = 2425.66

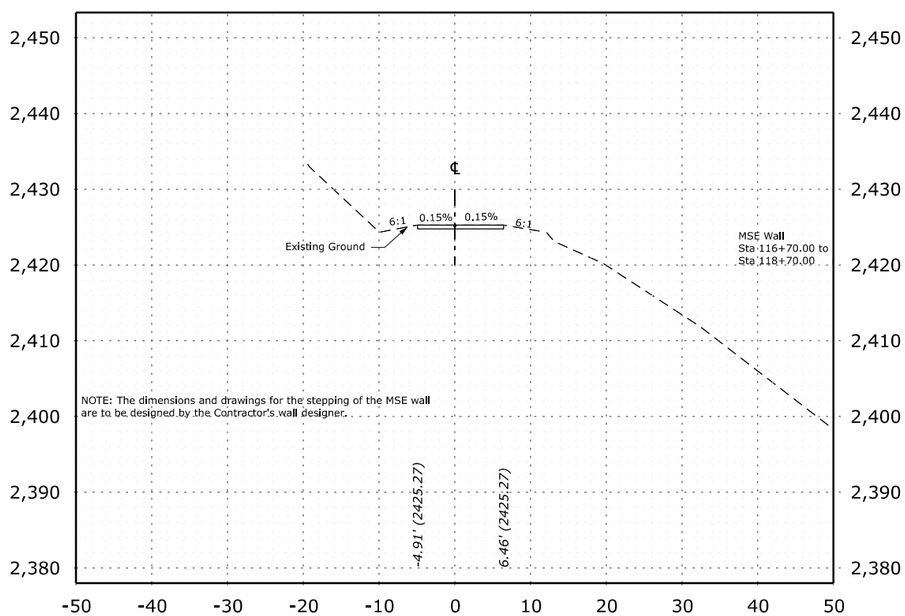
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

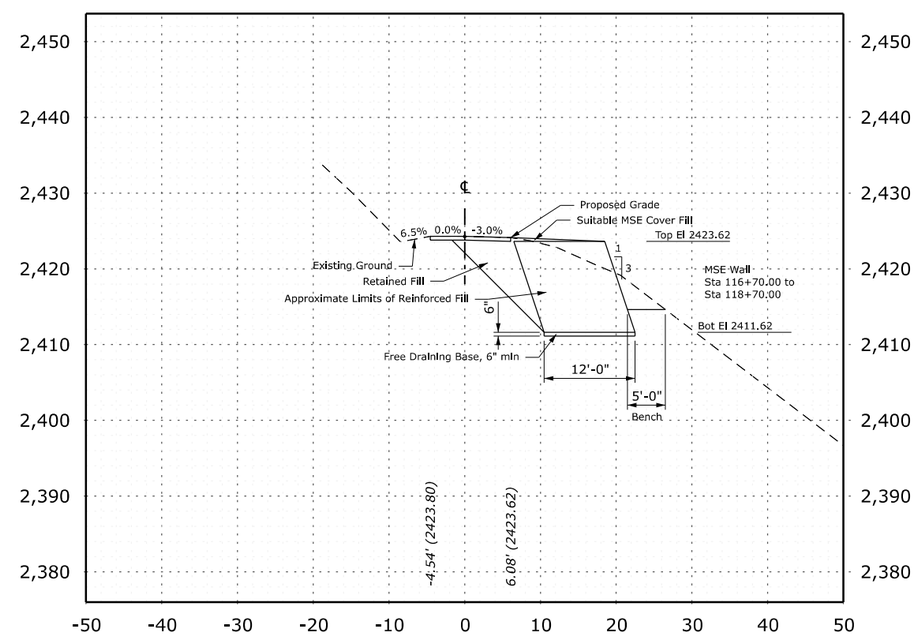
MP 2.20

c:\pw_working\infra03\ffields\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [briar633 - 116+40.00]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T08



116+80.00
Des Grade = 2425.28



117+00.00
Des Grade = 2424.30

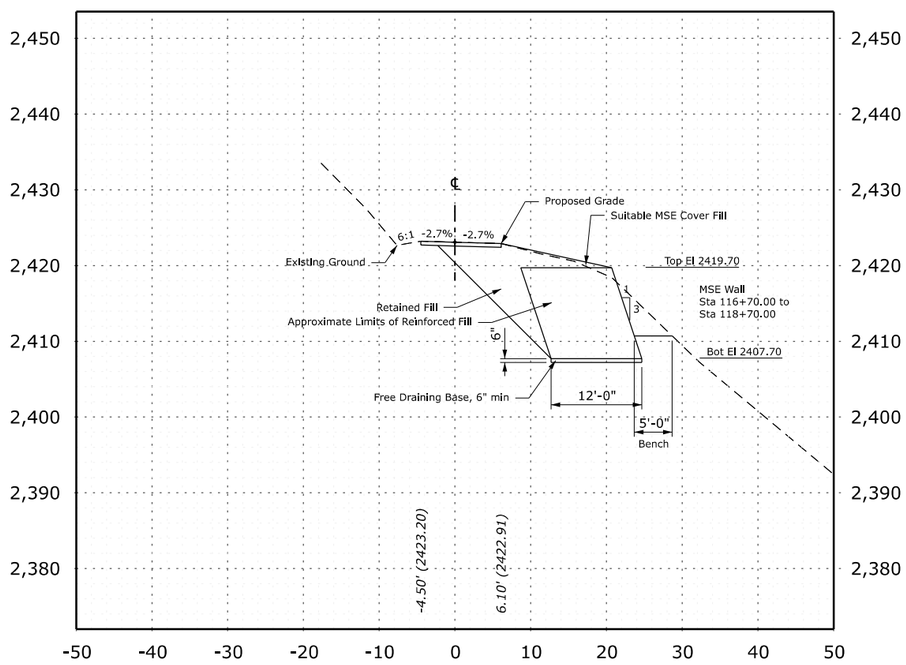
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

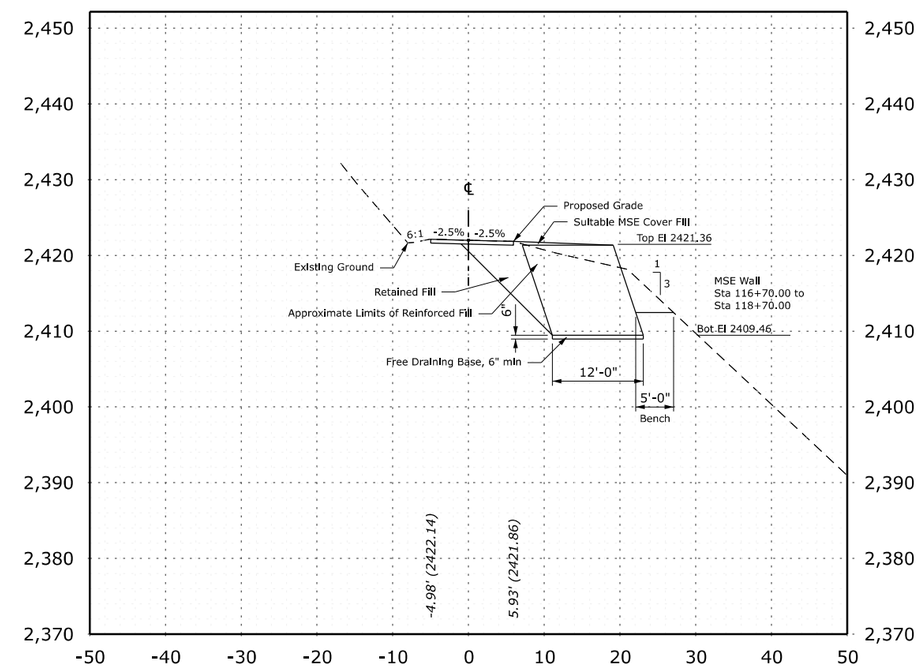
MP 2.20

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [briar633 - 116+80.00]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T09



117+20.00
Des Grade = 2423.08



117+40.00
Des Grade = 2422.00

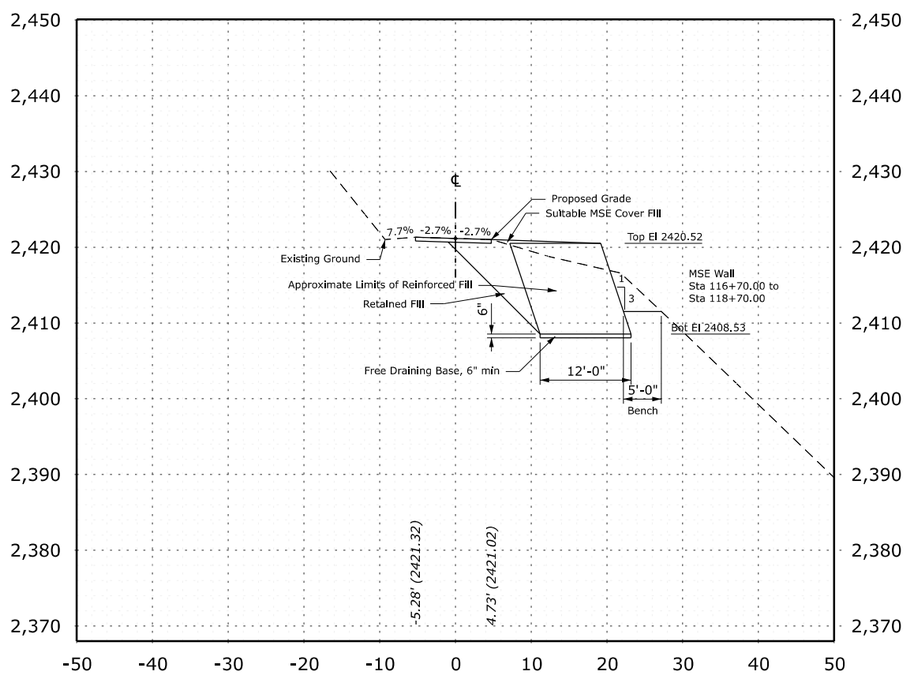
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 2.20

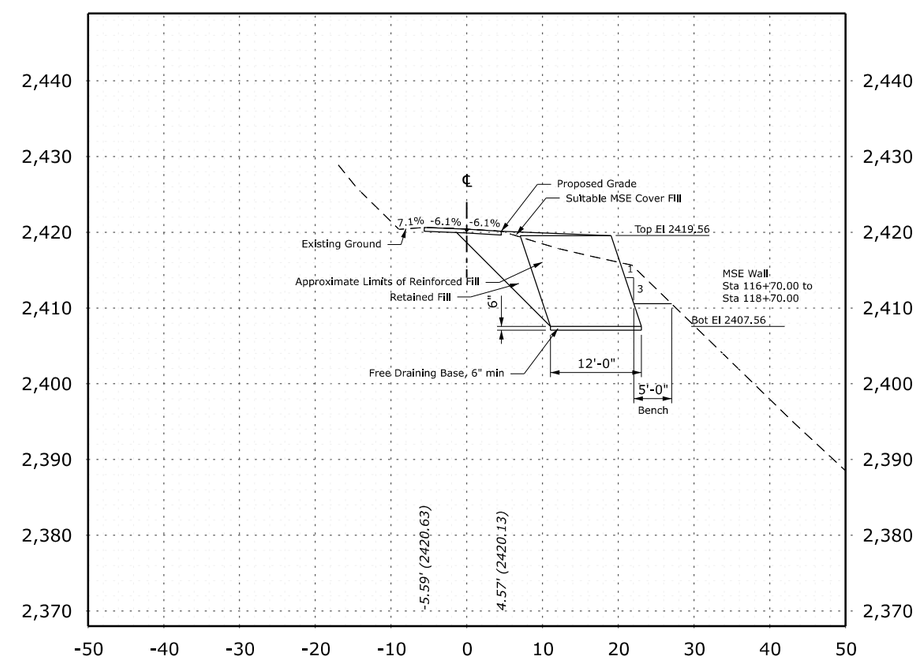
c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [briar633 - 117+20.00]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T10



117+60.00

Des Grade = 2421.15



117+80.00

Des Grade = 2420.41

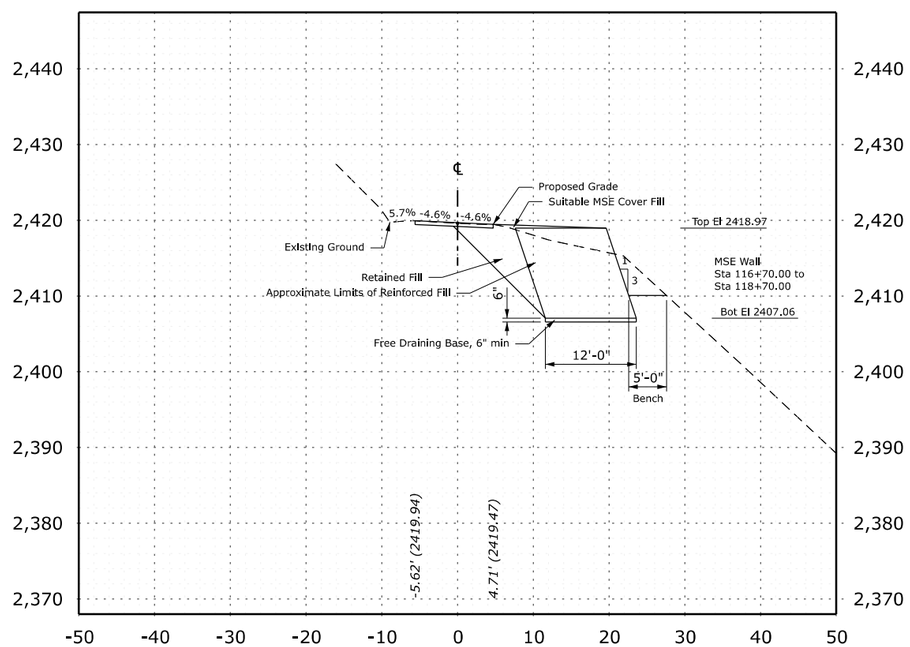
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

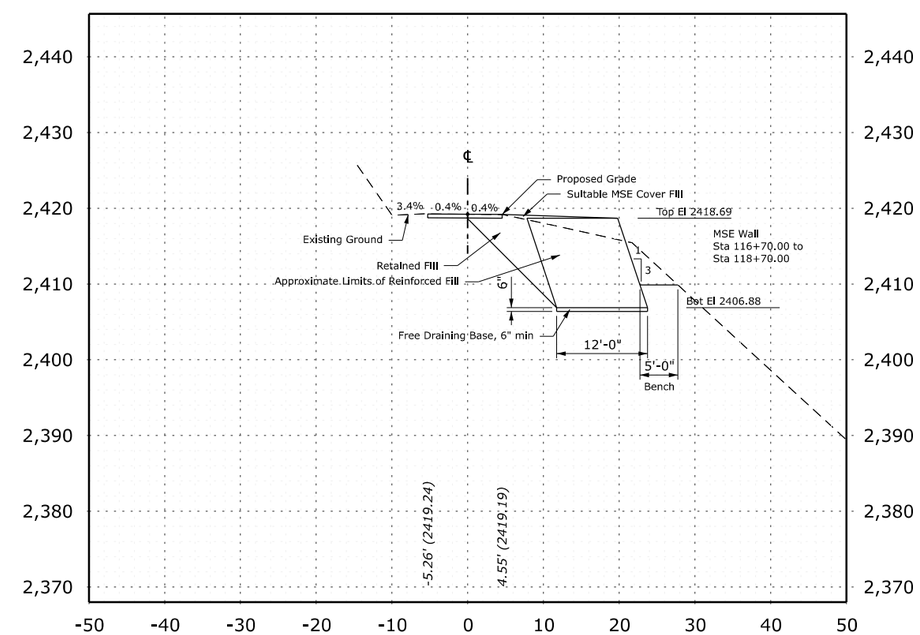
MP 2.20

c:\pw_working\infra03\fields\0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [brfar633 - 117+60.00]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T11



118+00.00
Des Grade = 2419.68



118+20.00
Des Grade = 2419.21

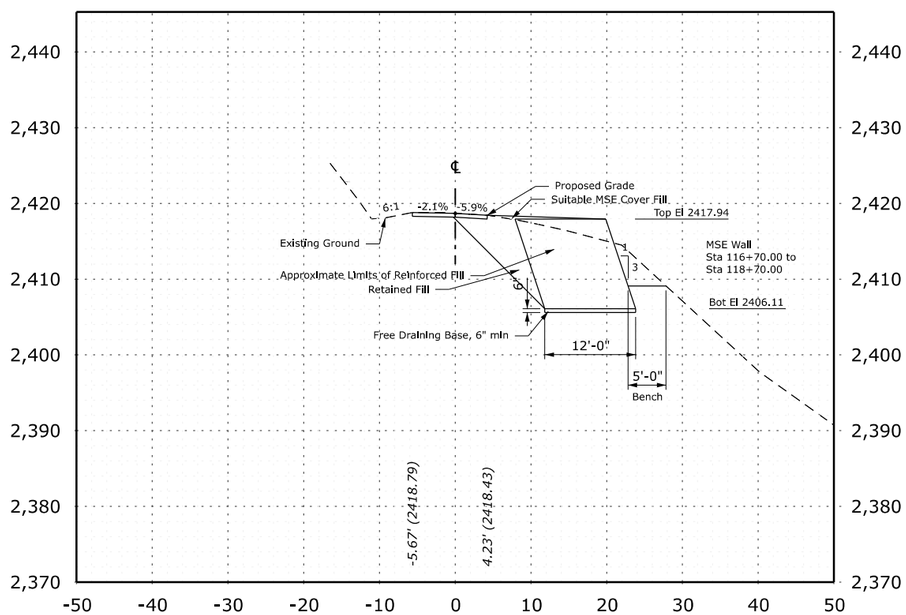
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

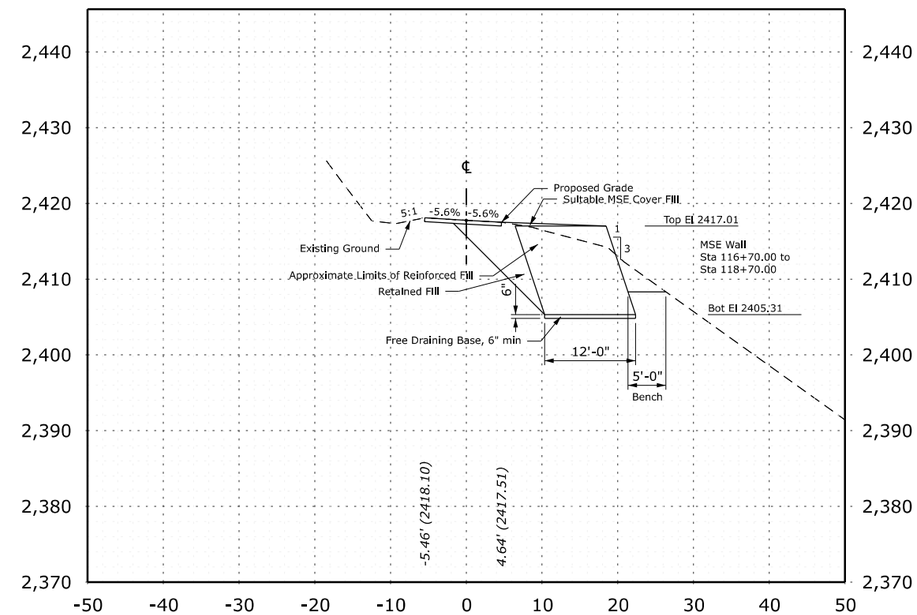
MP 2.20

c:\pw_working\infra03\ffalds\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [briar633 - 118+00.00]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T12



118+40.00
Des Grade = 2418.68



118+60.00
Des Grade = 2417.77

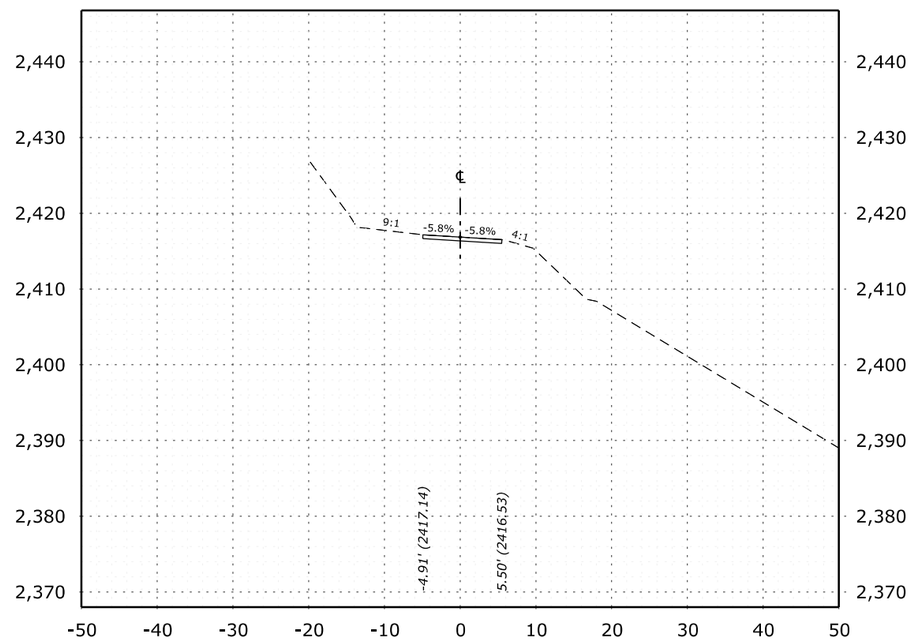
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 2.20

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [briar633 - 118+40.00]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T13



118+80.00
Des Grade = 2416.85

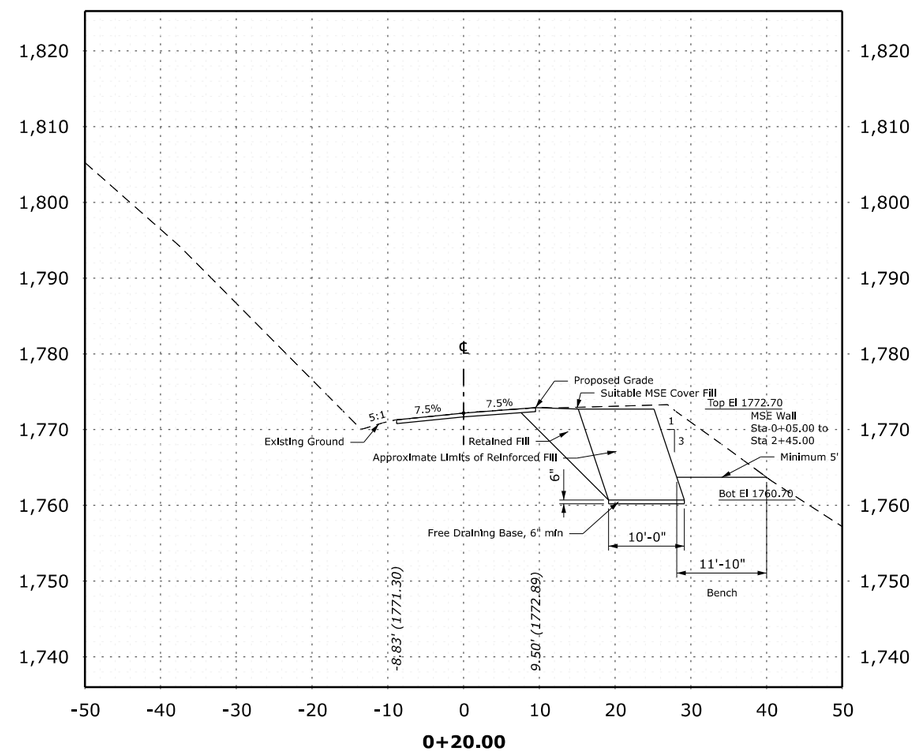
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
BRIAR CREEK ROAD

MP 2.20

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Briar.dgn [briar633 - 118+80.00]
5 February 2026 8:38 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T14



0+20.00

Des Grade = 1772.18

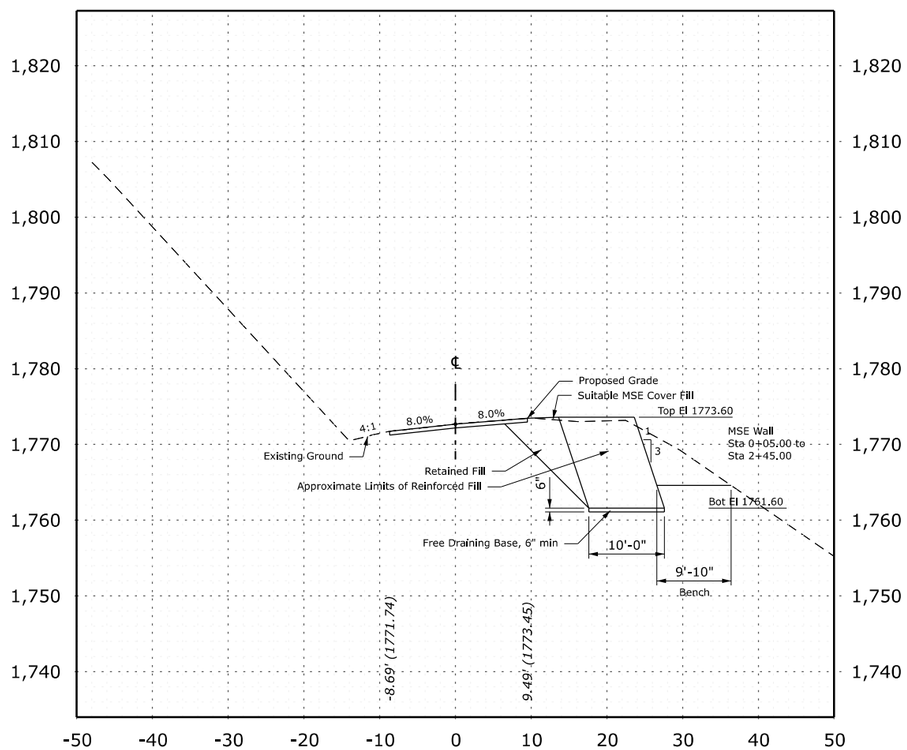
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
FLATWOODS ROAD

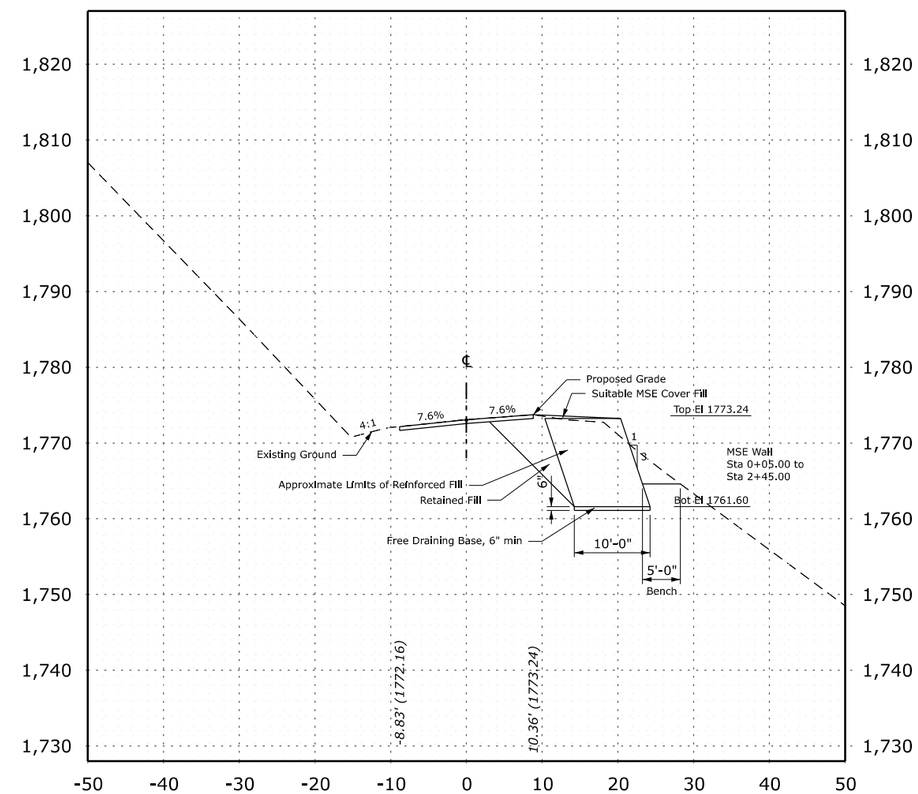
MP 5.78

c:\pw_working\infra03\jfields\d0147832\01_TNERFO-2020-2(1)_xsc_flatwoods.dgn [Flatwoods - 0+20.00]
5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T15



0+40.00
Des Grade = 1772.68



0+60.00
Des Grade = 1773.07

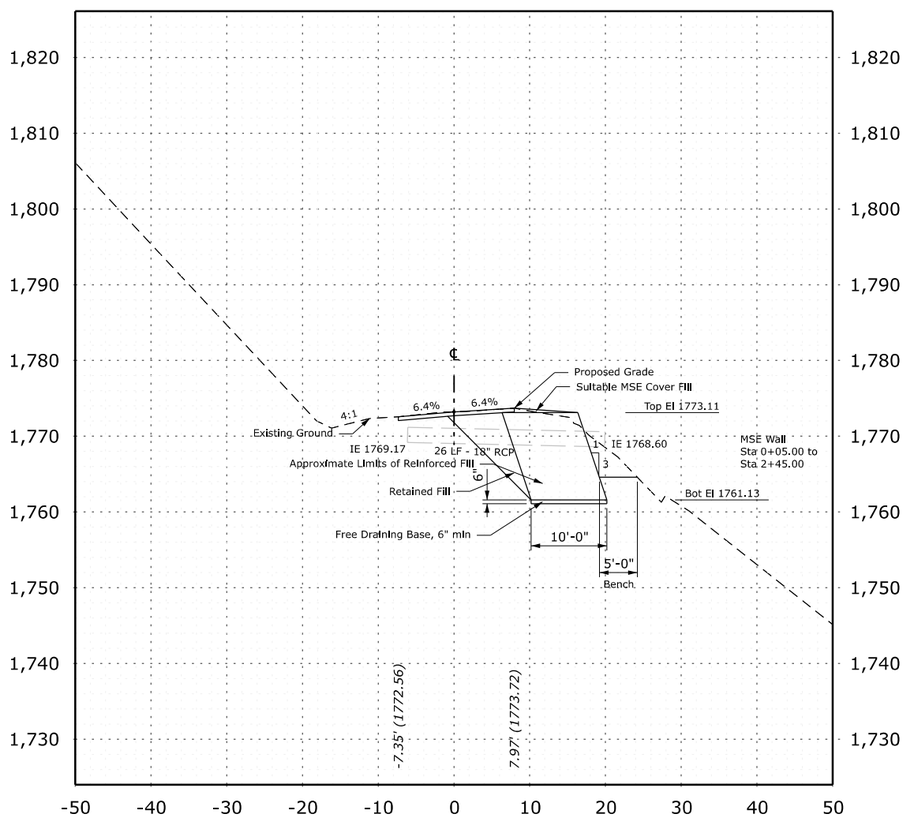
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
FLATWOODS ROAD

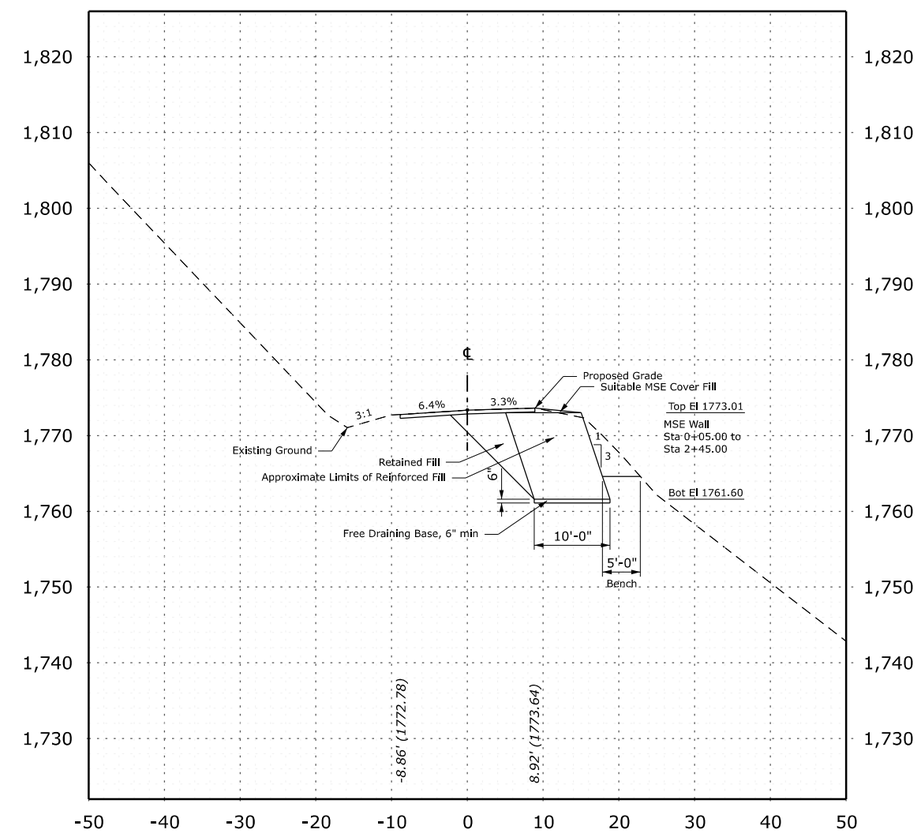
MP 5.78

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Flatwoods.dgn [Flatwoods - 0+40.00]
5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T16



0+80.00
Des Grade = 1773.21



1+00.00
Des Grade = 1773.35

FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

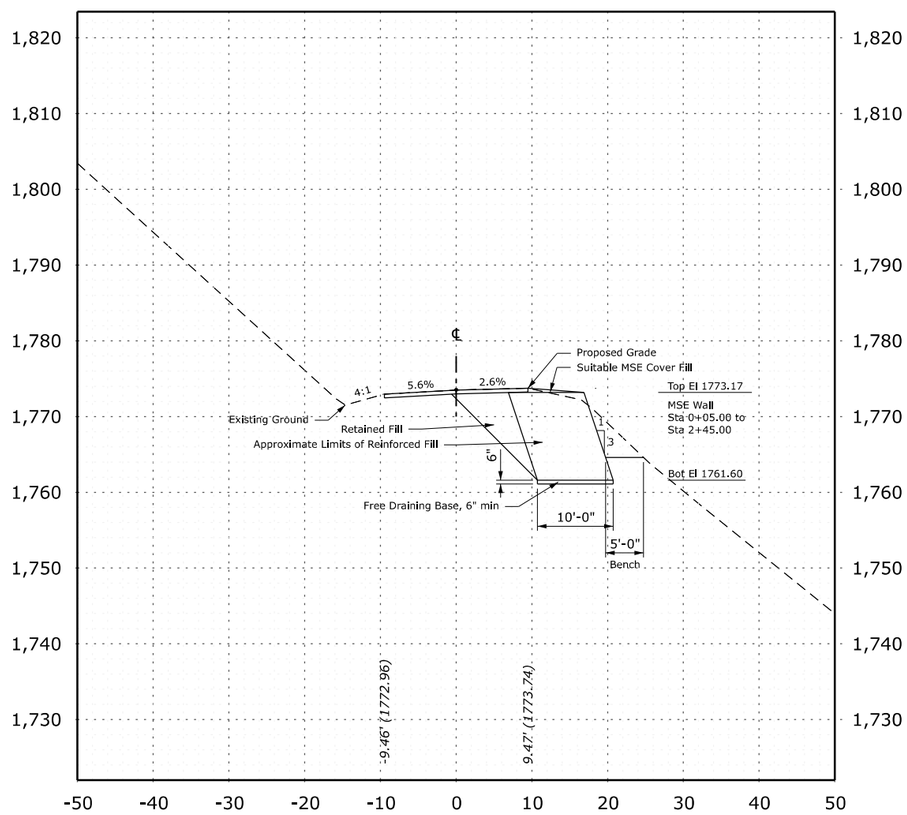
CROSS SECTIONS
FLATWOODS ROAD

MP 5.78

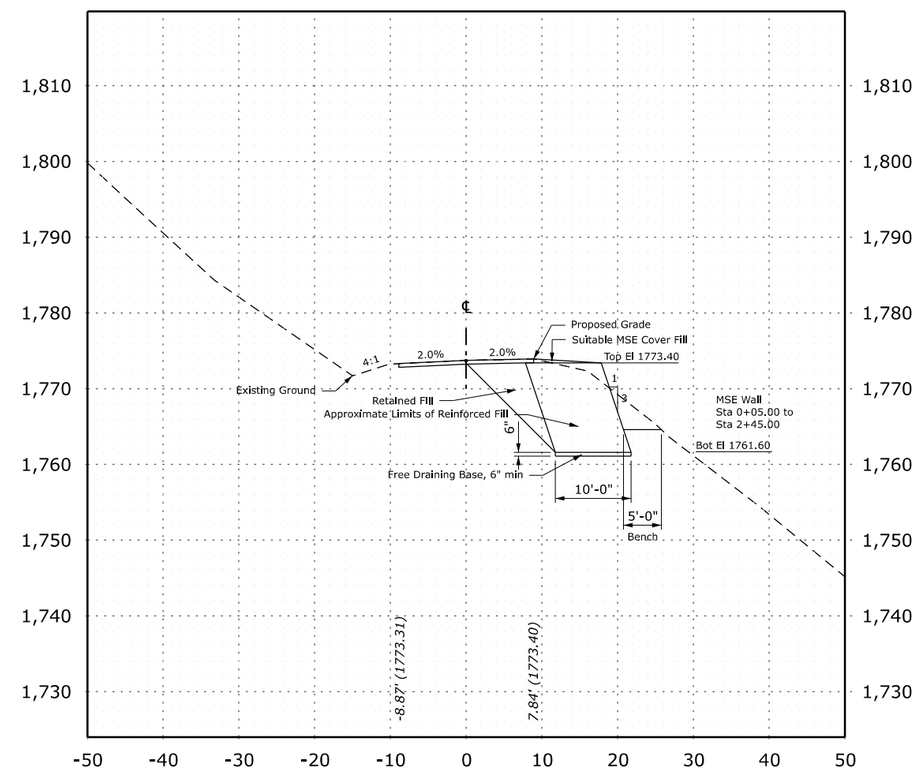
c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_flatwoods.dgn [flatwoods - 0+80.00]

5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T17



1+20.00
Des Grade = 1773.49



1+40.00
Des Grade = 1773.74

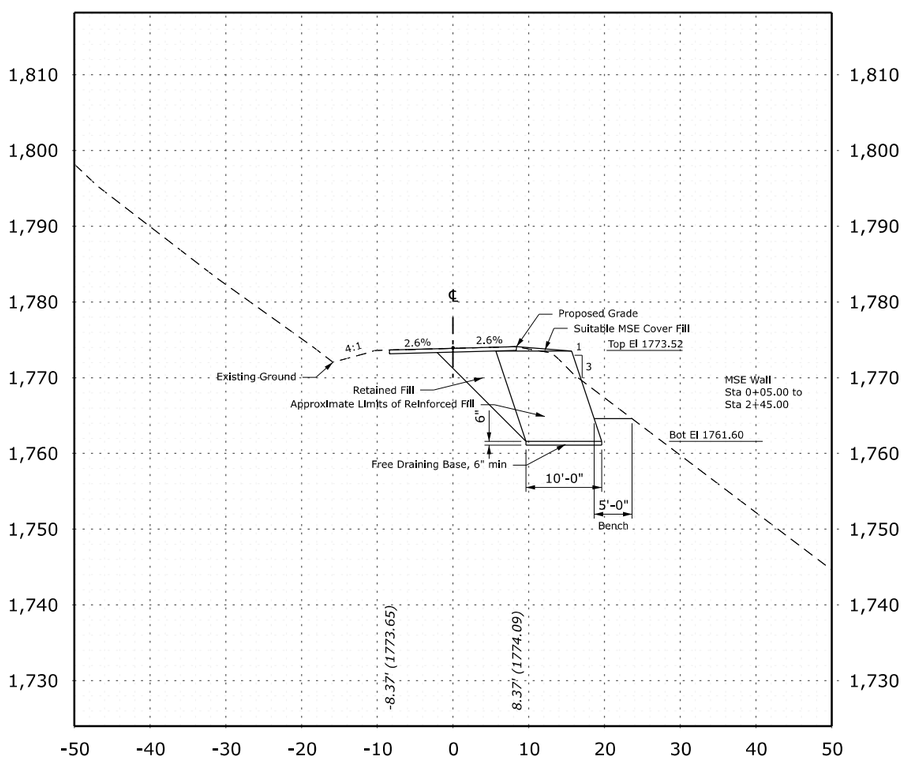
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
FLATWOODS ROAD

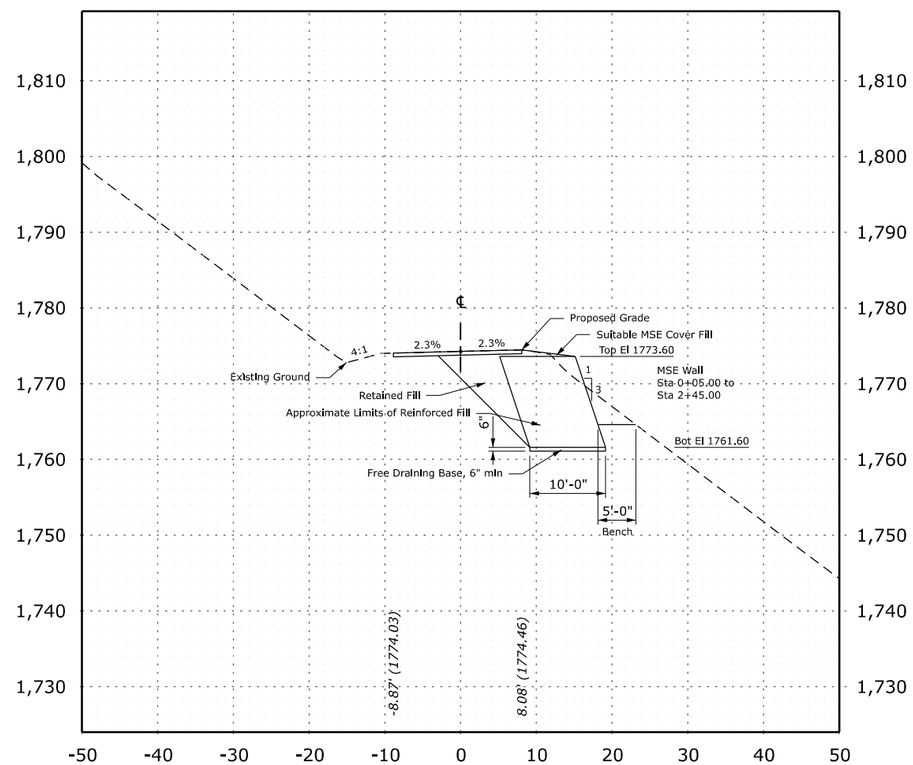
MP 5.78

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Flatwoods.dgn [Flatwoods - 1+20.00]
5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T18



1+60.00
Des Grade = 1773.87



1+80.00
Des Grade = 1774.27

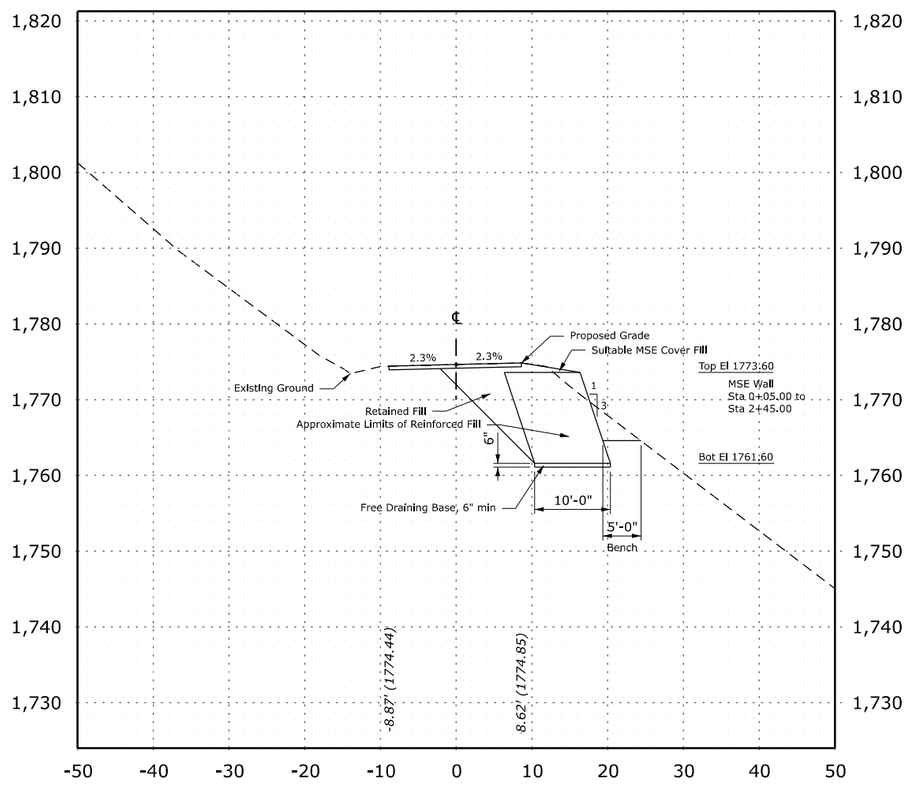
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
FLATWOODS ROAD

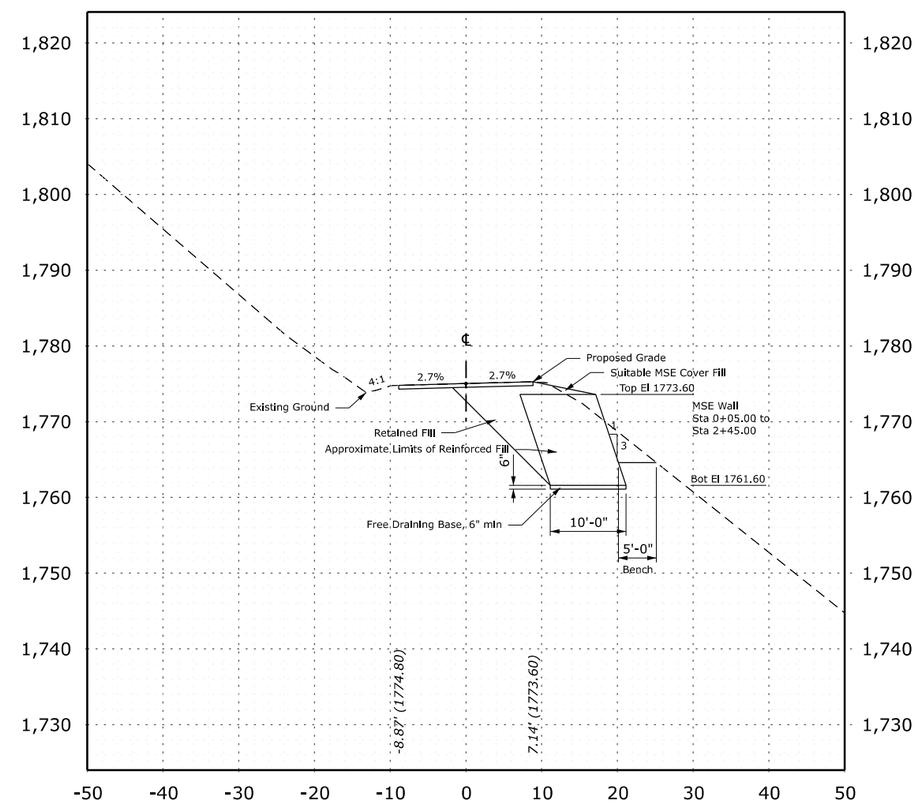
MP 5.78

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_flatwoods.dgn [Flatwoods - 1+60.00]
5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T19



2+00.00
Des Grade = 1774.65



2+20.00
Des Grade = 1775.04

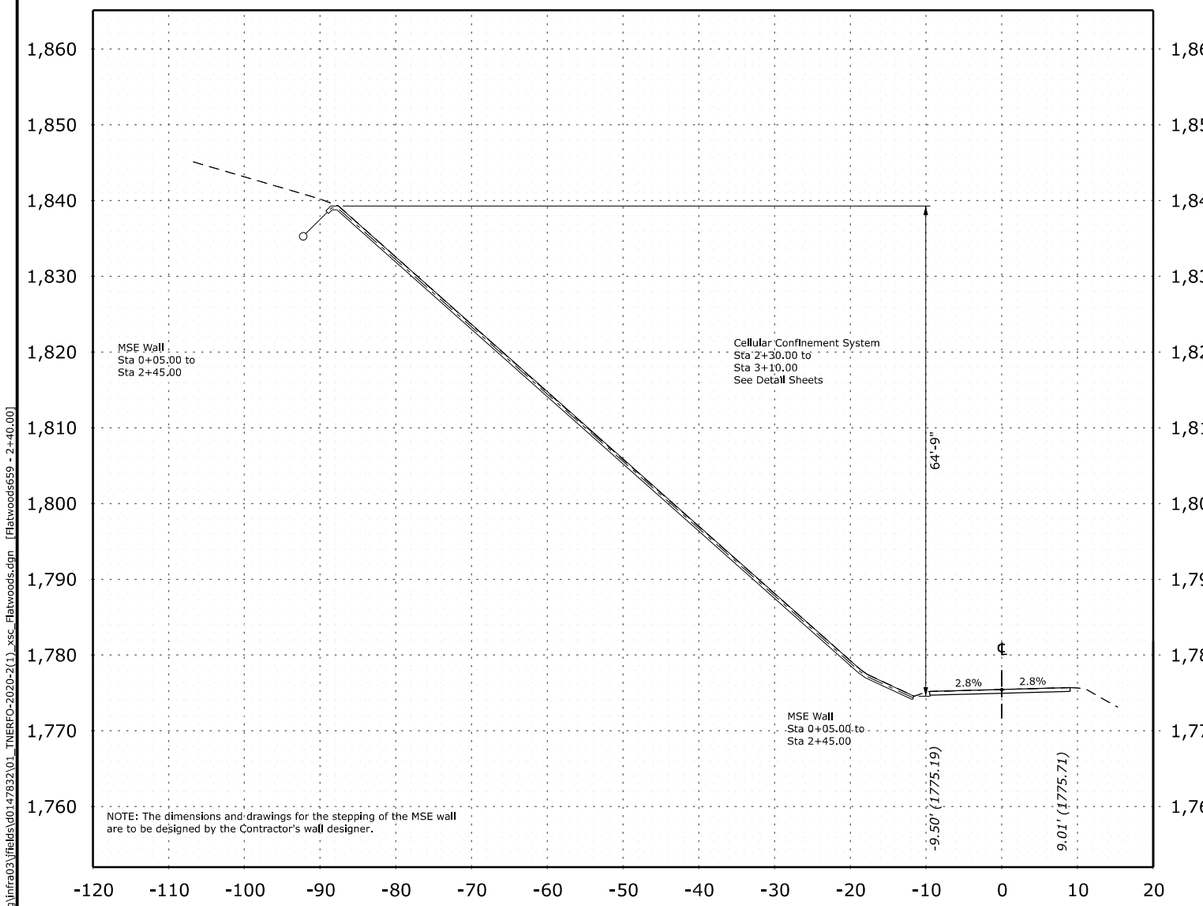
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
FLATWOODS ROAD

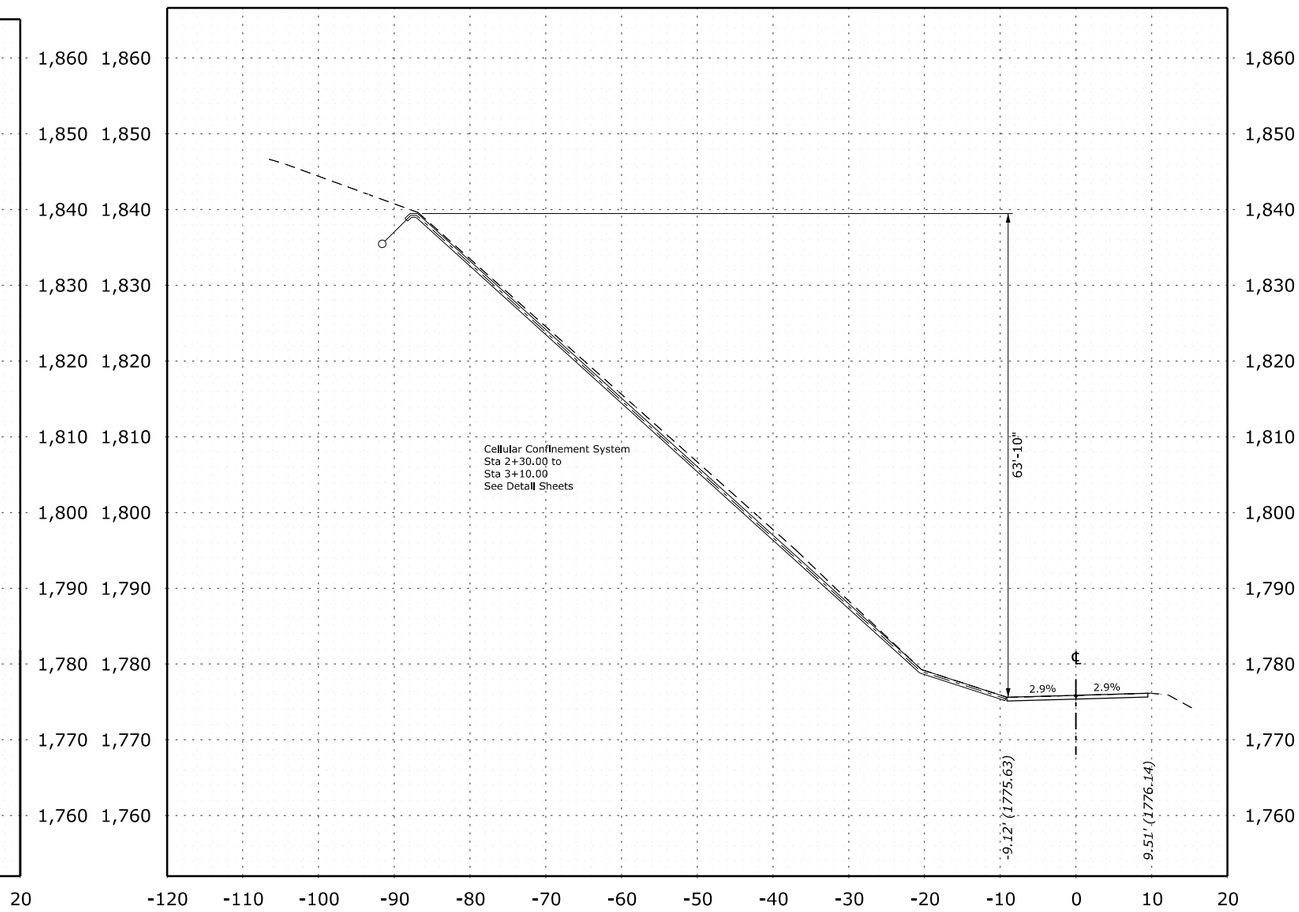
MP 5.78

cc:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Flatwoods.dgn [Flatwoods - 2+00.00]
5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T20



2+40.00
Des Grade = 1775.46



2+60.00
Des Grade = 1775.86

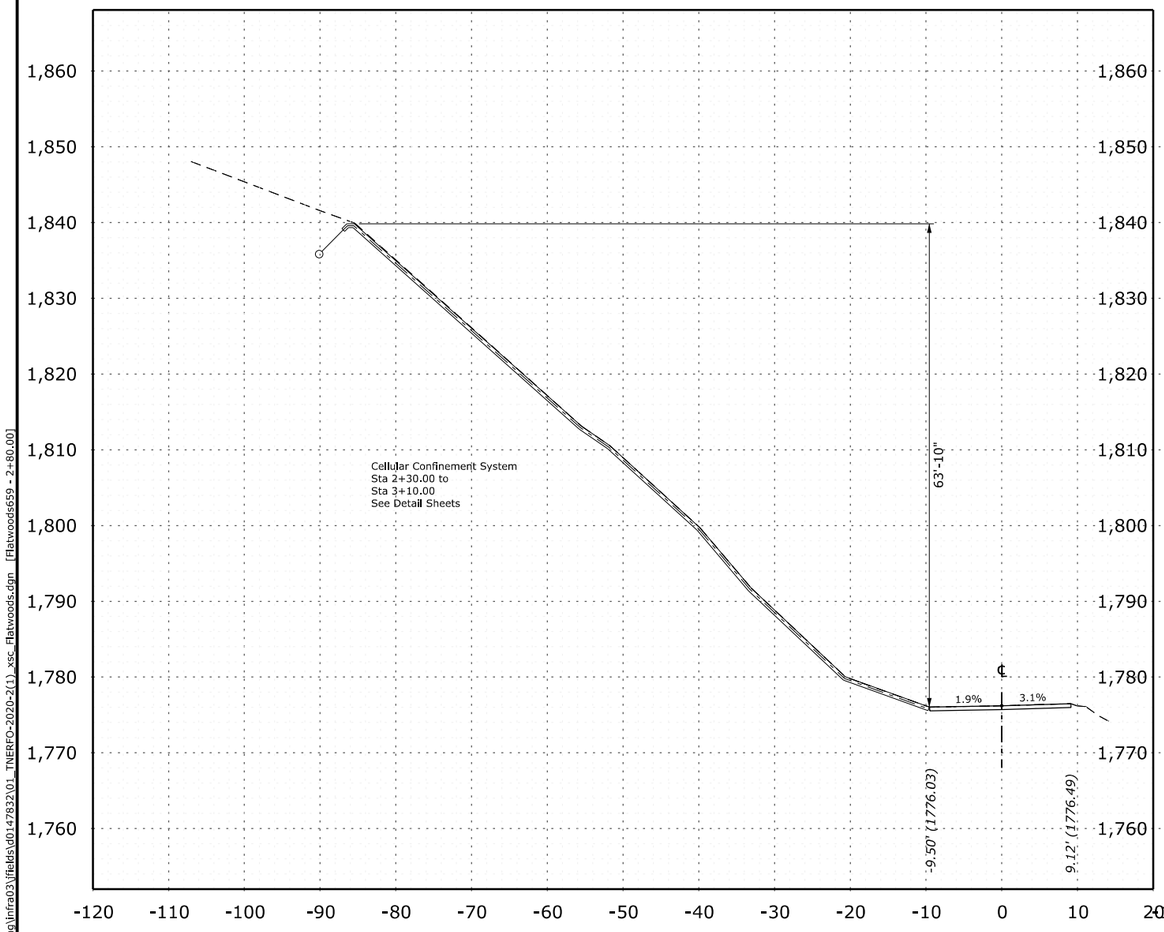
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
FLATWOODS ROAD

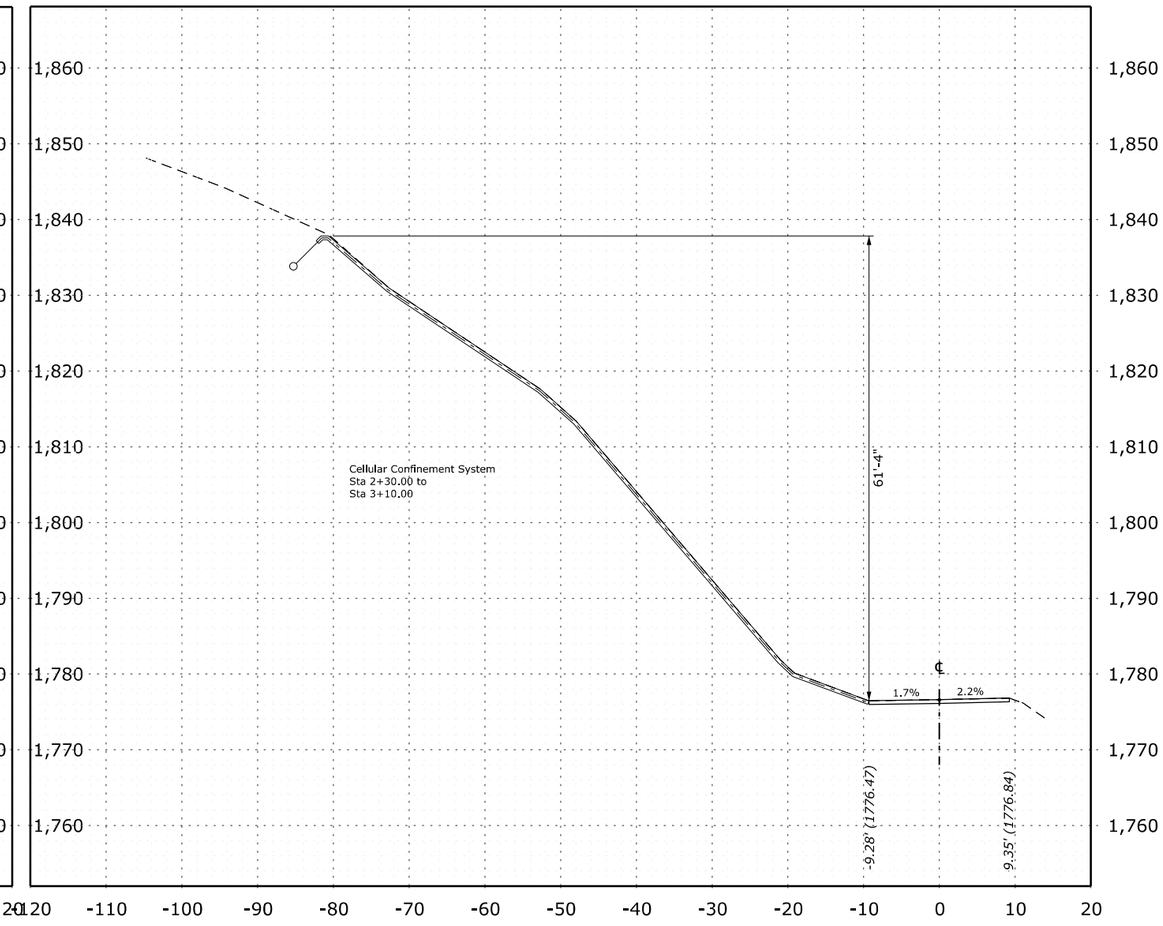
MP 5.78

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Flatwoods.dgn [Flatwoods659 - 2+40.00]
5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T21



2+80.00
Des Grade = 1776.21



3+00.00
Des Grade = 1776.63

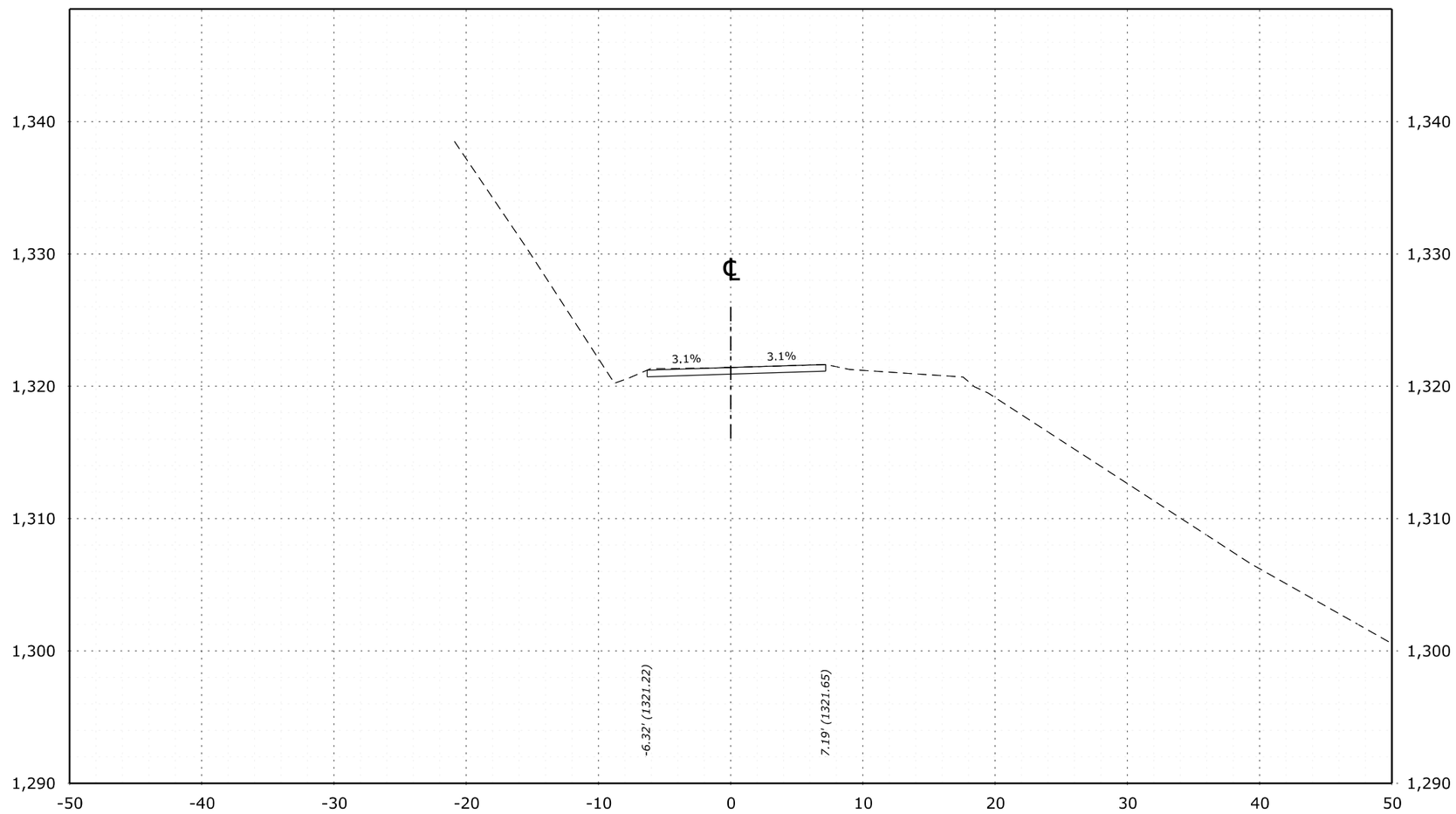
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
FLATWOODS ROAD

MP 5.78

cc:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Flatwoods.dgn [Flatwoods659 - 2+80.00]
5 February 2026 8:41 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T22



0+60.00
Des Grade = 1321.42

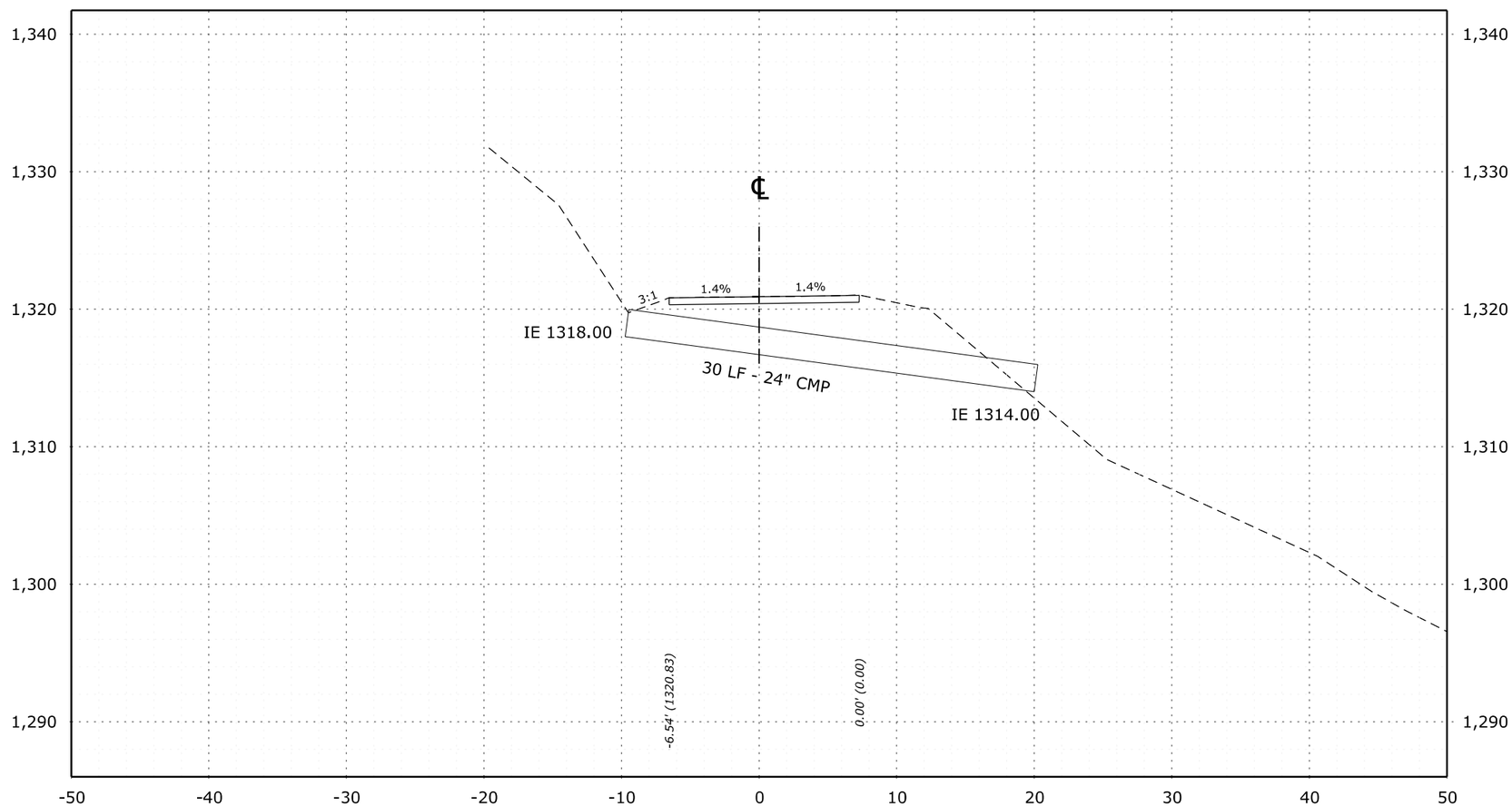
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
PAINT MOUNTAIN ROAD

MP 4.81

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Paint.dgn [Paint590 - 0+60.00]
5 February 2026 8:44 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T23



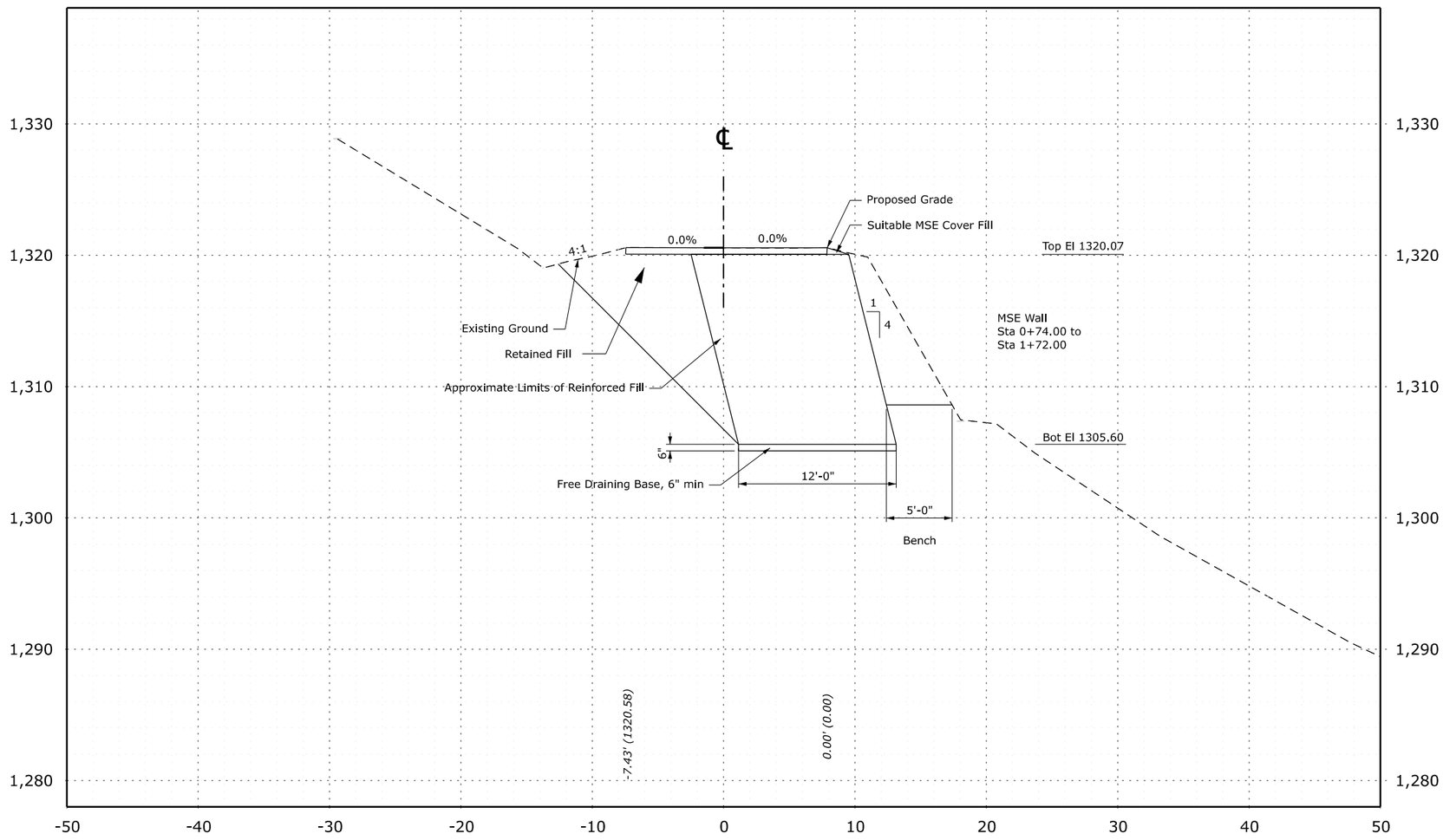
0+80.00
Des Grade = 1320.91

FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
PAINT MOUNTAIN ROAD
MP 4.81

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Paint.dgn [Paint590 - 0+80.00]
5 February 2026 8:44 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T24



1+00.00
Des Grade = 1320.56

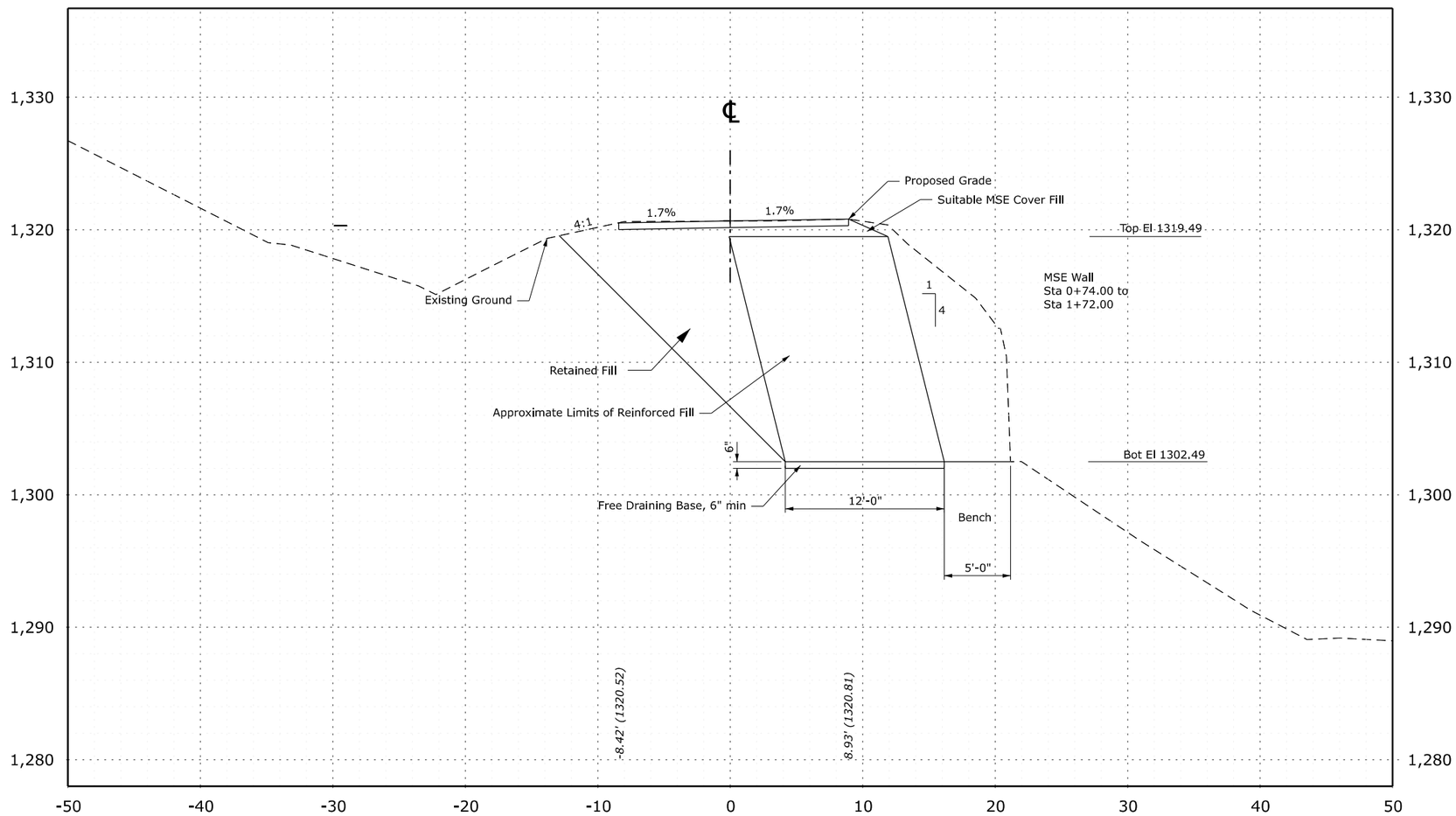
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
PAINT MOUNTAIN ROAD

MP 4.81

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Paint.dgn [Paint590 - 1+00.00]
5 February 2026 8:44 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T25



1+20.00
Des Grade = 1320.66

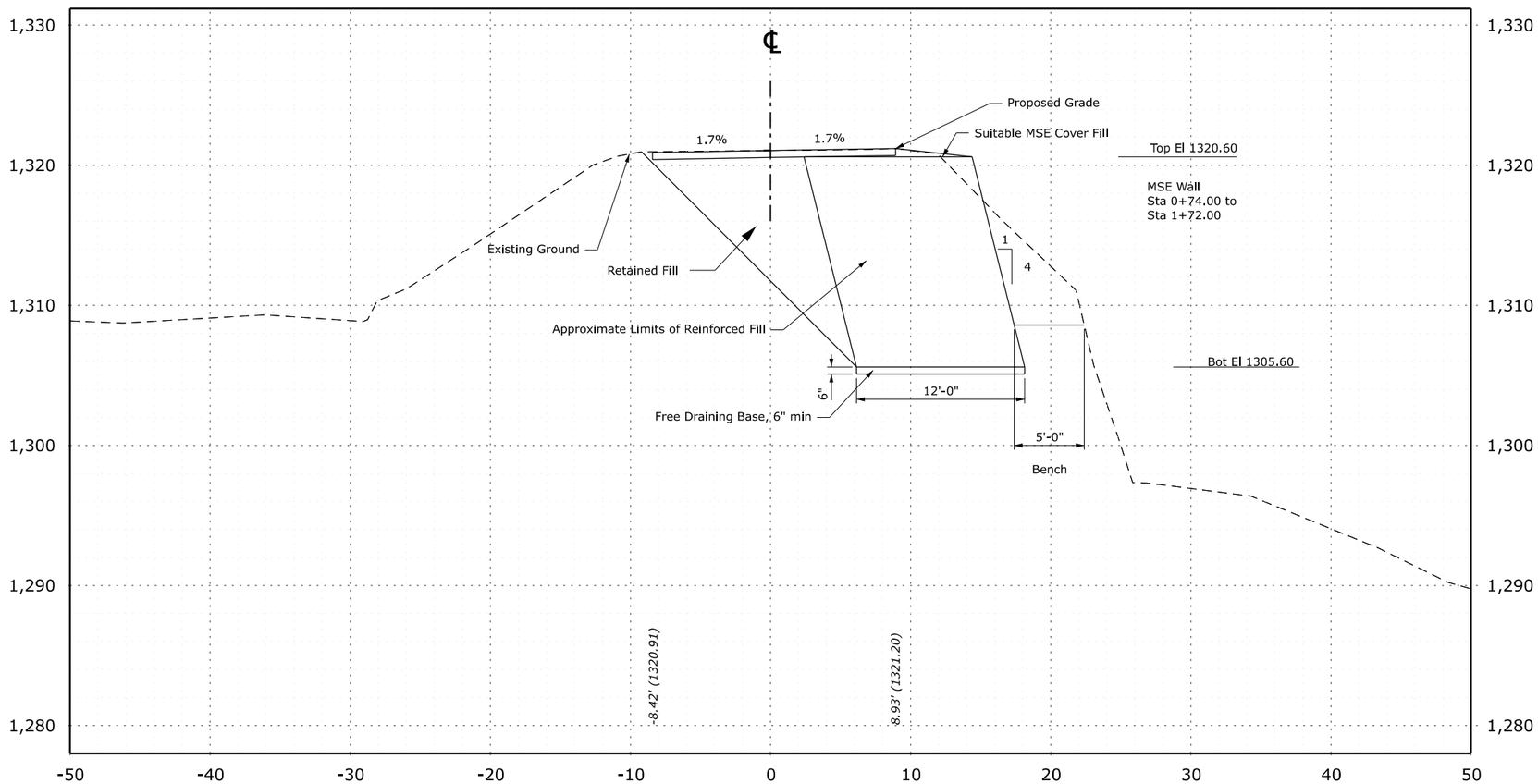
FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
PAINT MOUNTAIN ROAD

MP 4.81

c:\pw_working\infra03\ifields\d0147832\01_TNERFO-2020-2(1)_xsc_Paint.dgn [PaintS90 - 1+20.00]
5 February 2026 8:44 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T26



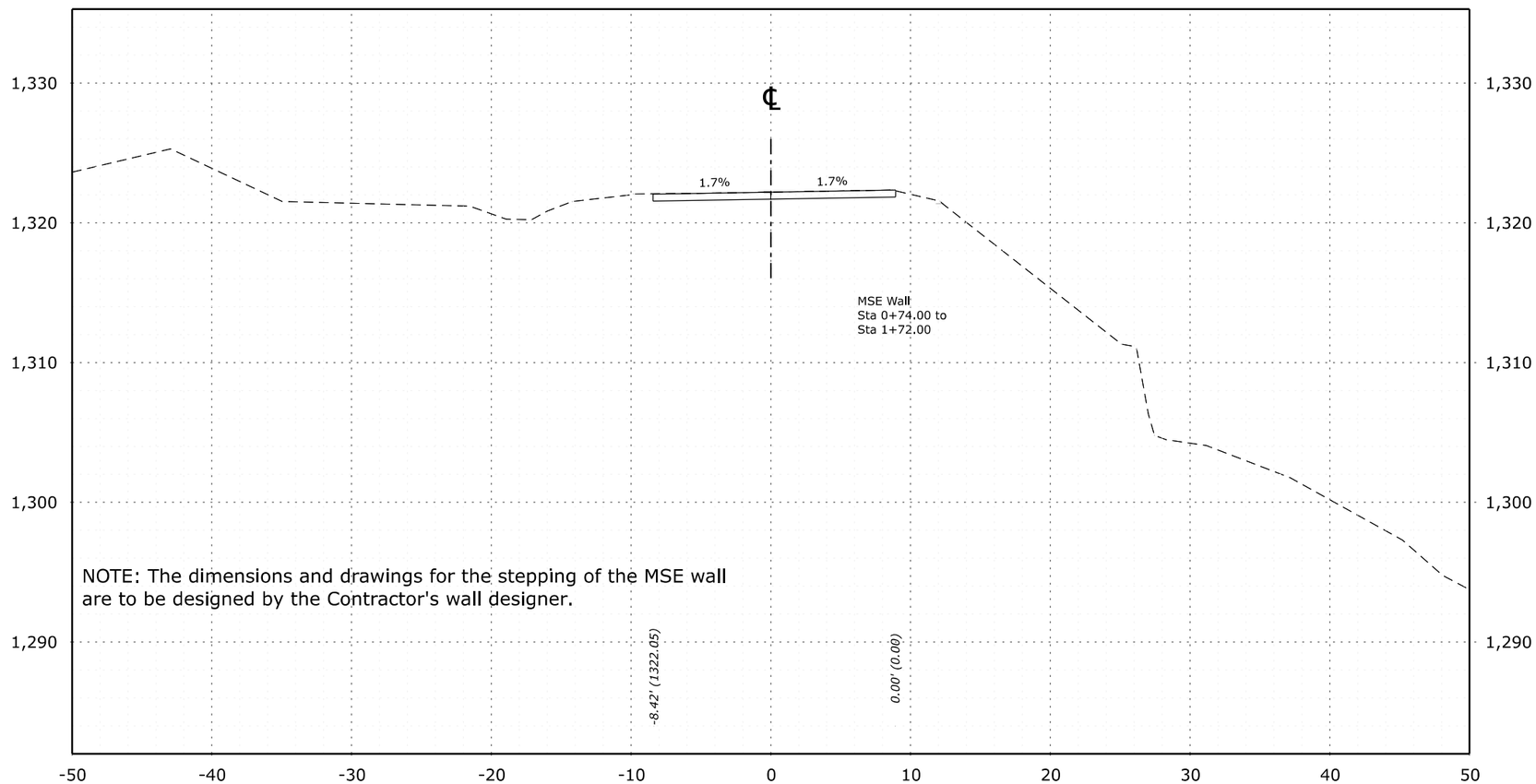
1+40.00
Des Grade = 1321.06

FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
PAINT MOUNTAIN ROAD
MP 4.81

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Paint.dgn [Paint590 - 1+40.00]
5 February 2026 8:44 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T27



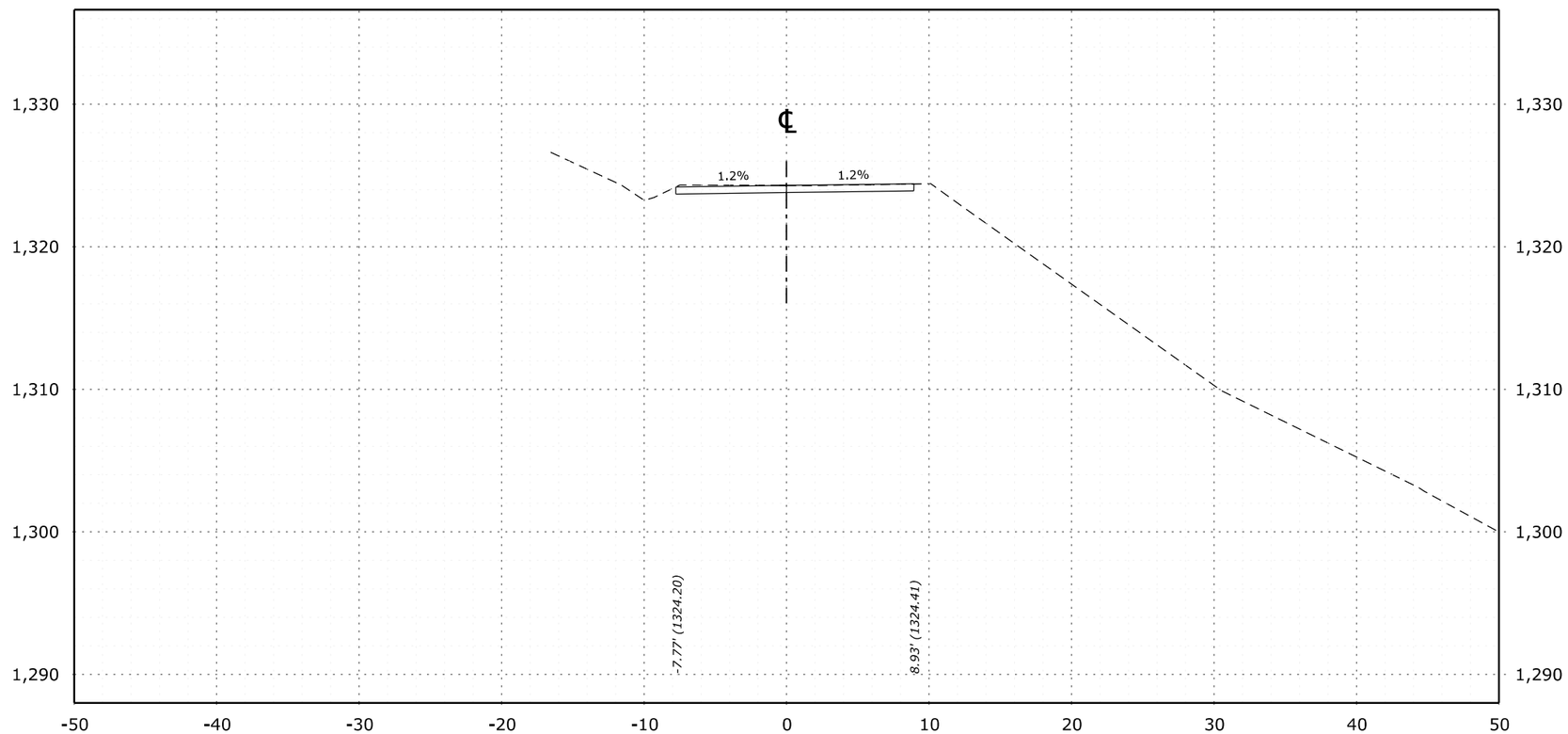
1+60.00
Des Grade = 1322.20

FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
PAINT MOUNTAIN ROAD
MP 4.81

c:\pw_working\infra03\ifields\d0147832\01_TNERFO-2020-2(1)_xsc_Paint.dgn [Paint590 - 1+60.00]
5 February 2026 8:44 PM

PROJECT	SHEET NUMBER
TN ERFO FS CHRKE804 2020-2(1)	T28



1+80.00
Des Grade = 1324.30

FHWA, Office of Federal Lands Highway
REPAIRS OF STORM DAMAGED SITES

CROSS SECTIONS
PAINT MOUNTAIN ROAD
MP 4.81

c:\pw_working\infra03\fields\d0147832\01_TNERFO-2020-2(1)_xsc_Paint.dgn [Paint590 - 1+80.00]
5 February 2026 8:44 PM