STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	A01

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

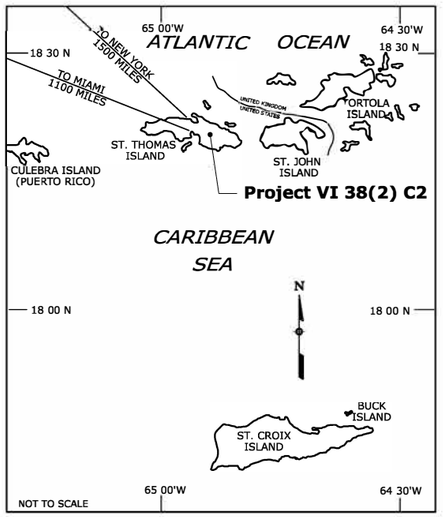
GOVERNMENT OF THE VIRGIN ISLANDS
OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

PLANS FOR PROPOSED

PROJECT VI 38(2) C2

RELOCATION OF ROUTE 381

ST. THOMAS, U.S. VIRGIN ISLANDS



KEY MAP

INDEX TO SHEETS

DESCRIPTION OF PROJECT

IMPROVEMENT: Work includes embankment construction, culverts, concrete paved waterways, ripraps, asphalt concrete pavement, sidewalks, guardrail systems, and other miscellaneous work.

PROJECT LENGTH: 0.27 Miles

LANE MILES: 0.52 Miles

ROAD:	WIDTH	SURFACE	BASE	SUBGRADE
RTE 381	22'	5.5" ACP	Aggr.	Emb. const.
Hotel Driveway	10'	5.5" ACP	Aggr.	Emb. const.

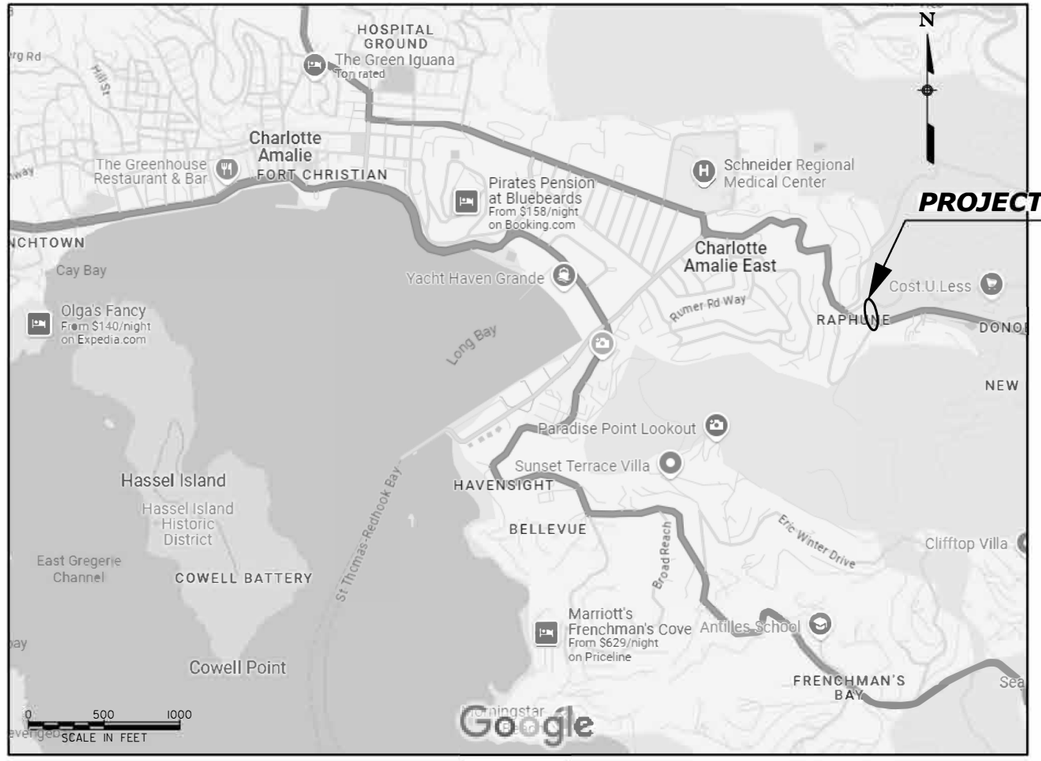
BRIDGE: None

DESIGN DESIGNATION:

	RTE 381
ADT (2006)	<100
ADT (2026)	100
DHV	N/A
D	50/50
%Truck	N/A
V (MPH)	20
C/A	None
e(max)	4%

SPECIFICATIONS:

"Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects", FP-14.



811 Know what's below. Call before you dig.

Intermediate PLANS

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

MAY, 2025

Project Manager	Highway Design Manager	Lead Designer
Ramesh Kotadia	Shoukat Narwaz	Thang Nguyen

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
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

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	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

National Forest Boundary

National Wildlife Refuge Boundary — 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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

PLAN.B.US

SHEET SUB-TITLE 1

SHEET SUB-TITLE 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	000

North Arrow

	EXISTING	PROPOSED
Slope Stake Limits — Top of Cut		
Slope Stake Limits — Toe of Fill		
Slope Stake Limits — 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
Underground Utilities	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:

Concrete Sidewalk or Paved Waterway

RECP

NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

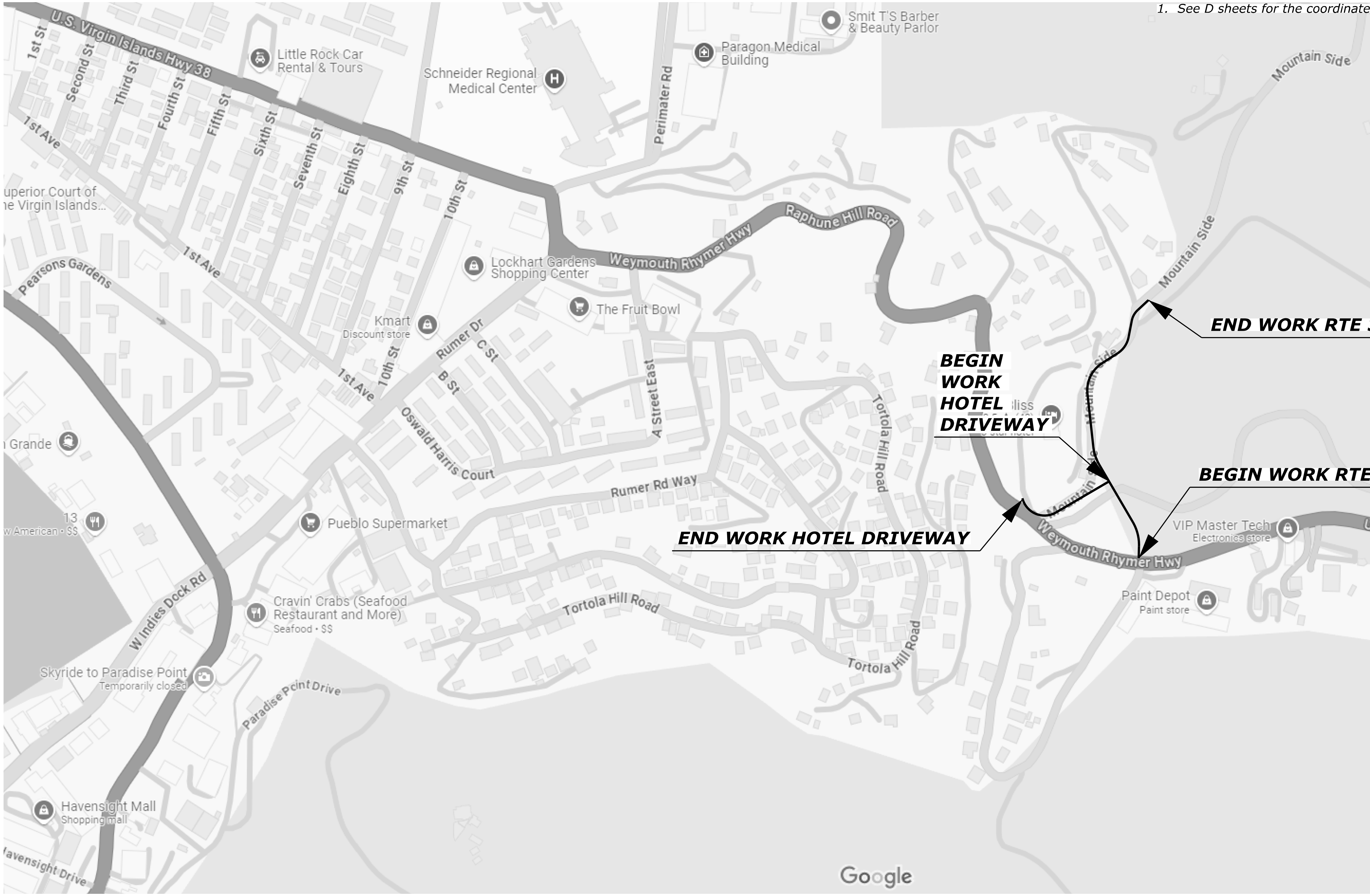
PLAN.B.US

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	A04

NOTE:

1. *See D sheets for the coordinates of the work limits.*



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11 April 2025 8:41 AM

NO.	DATE	BY	REVISIONS

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

NO SCALE

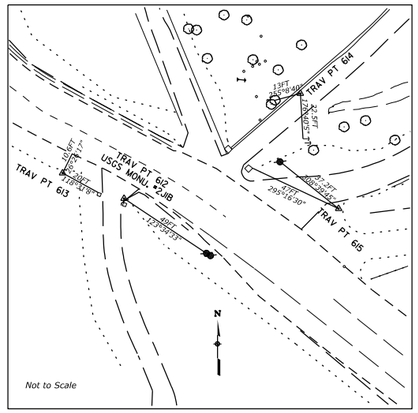
GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

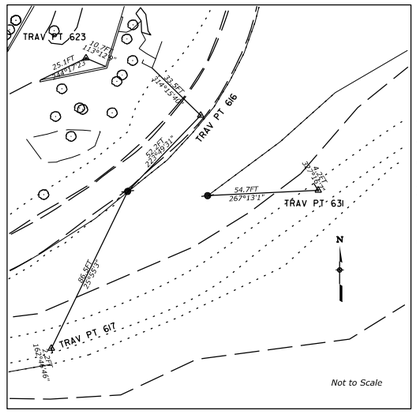
LOCATION MAP

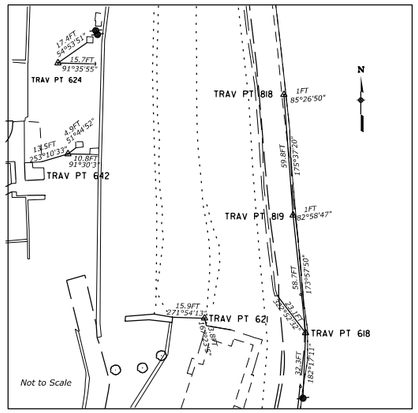
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	A05

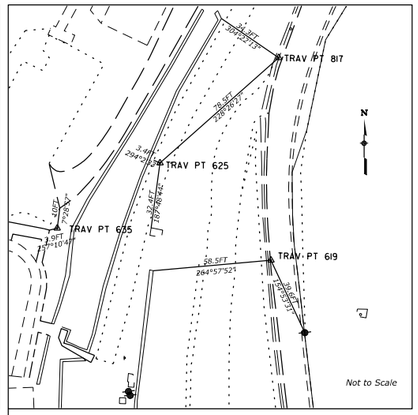
NOTE:

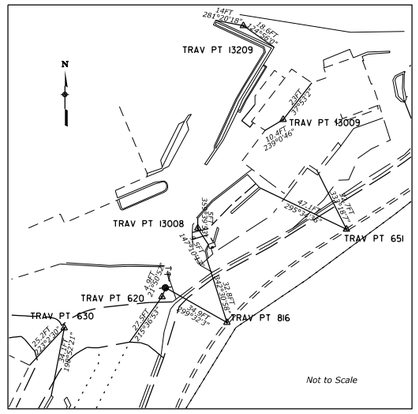
1. See D sheets for the coordinates of the work limits.

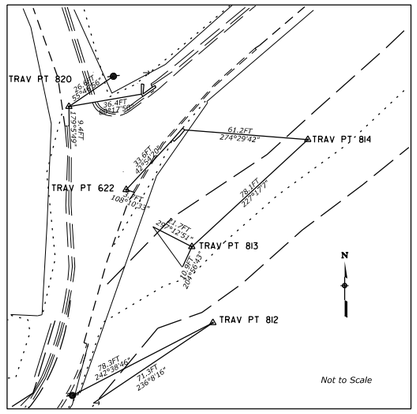


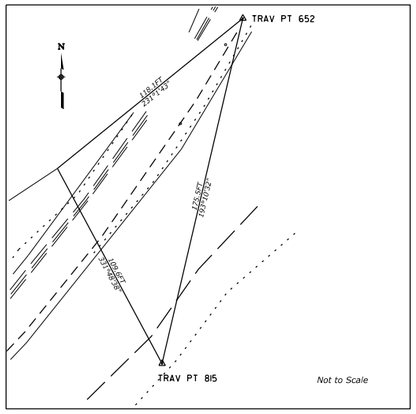


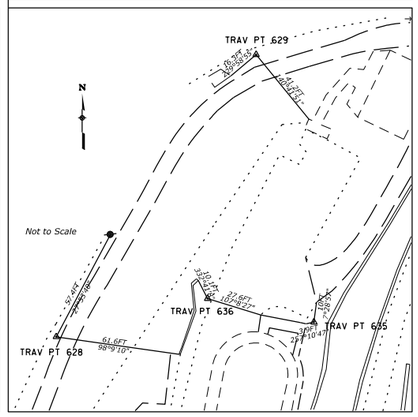


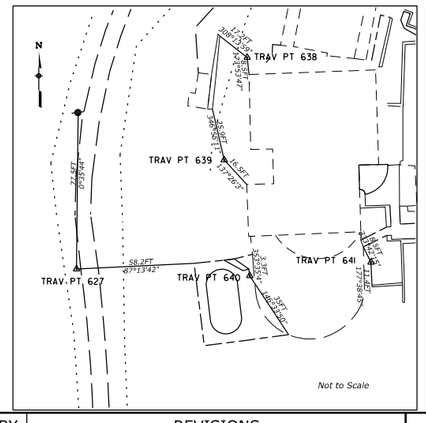


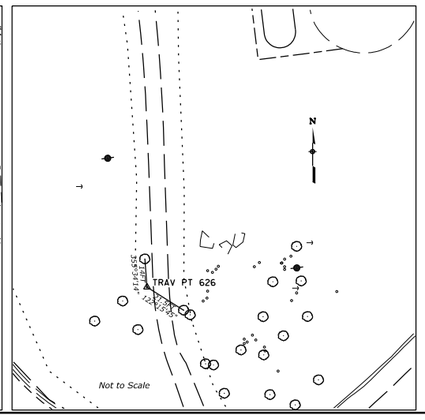












Coordinate System
Name: United States/State Plane 1927
Datum: NAD 1927
Zone: PR /VI 5200
Geoid: GEOID03 (PR/VI)
Vertical datum: NAVD88

PT#	NORTHING	EASTING	ELEV	TYPE
612	185350.16	1028343.33	336.72	TRAV
613	185362.81	1028312.92	338.74	FLY
614	185402.19	1028430.65	341.61	FLY
615	185345.17	1028449.55	330.08	FLY
616	185448.09	1028601.02	340.82	TRAV
617	185332.64	1028527.10	320.98	TRAV
618	185569.55	1028637.21	348.95	TRAV
619	185784.18	1028603.88	373.89	TRAV
620	185957.40	1028624.50	399.61	TRAV
621	185576.83	1028587.23	366.43	FLY
622	186150.17	1028811.87	413.02	FLY
623	185476.45	1028544.25	363.70	FLY
624	185703.22	1028514.64	402.69	FLY
625	185832.35	1028548.97	398.98	FLY
626	185472.19	1028346.31	351.54	FLY
627	185622.69	1028338.16	374.00	FLY
628	185792.79	1028370.56	388.95	FLY
629	185932.44	1028469.49	397.29	FLY
630	185942.01	1028576.16	404.26	FLY
631	185410.97	1028659.24	314.24	TRAV
635	185800.05	1028498.09	417.59	FLY
636	185811.75	1028445.47	417.62	FLY
638	185727.48	1028422.62	413.74	FLY
639	185676.71	1028411.25	407.07	FLY
640	185619.42	1028423.86	405.10	FLY
641	185626.04	1028483.89	404.66	FLY
642	185658.21	1028519.59	399.11	FLY
651	185990.89	1028715.83	404.49	CTRAV
652	186450.98	1029061.27	476.19	CTRAV
812	186084.27	1028854.81	390.43	TRAV
813	186121.95	1028844.43	404.17	TRAV
814	186174.95	1028901.83	405.14	TRAV
815	186280.06	1029021.30	417.03	TRAV
816	185944.75	1028656.69	399.21	TRAV
817	185884.44	1028607.73	389.62	TRAV
818	185687.50	1028626.47	359.14	TRAV
819	185627.88	1028631.04	352.36	TRAV
820	186191.36	1028783.58	415.22	TRAV
13008	185991.38	1028642.24	395.10	TRAV
13009	186045.20	1028684.49	408.82	TRAV
13209	186091.65	1028664.78	380.99	TRAV

NO.	DATE	BY	REVISIONS

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

NO SCALE

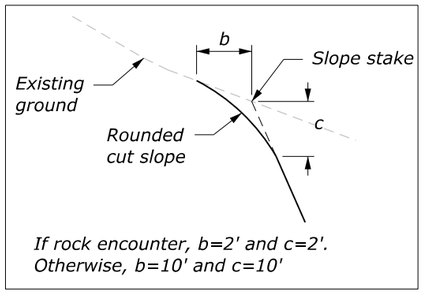
GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

SURVEY CONTROL POINTS

M:\PROJECTS\vifilestthomas\vi38(2)_c2\Proj_Dev\CADD\A05-VI38(2)_sur.dgn [Location Map]
14 April 2025 1:57 PM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	B01

DETAIL A



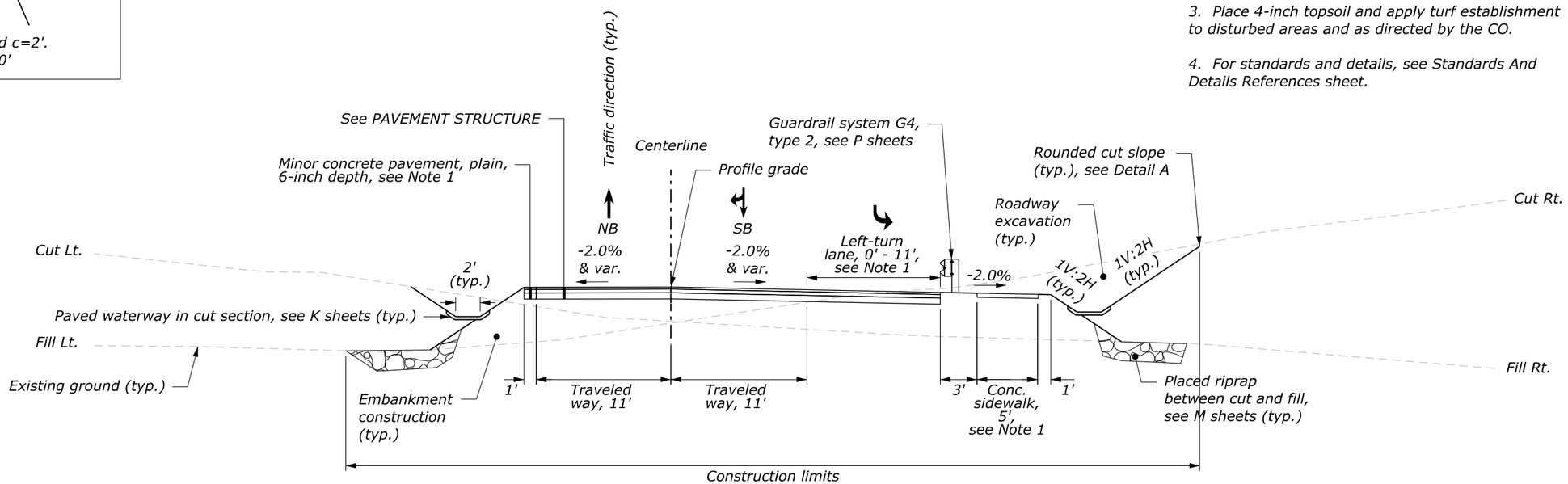
NOTES:

1. see D sheets for limits of left-turn lane, sidewalk, and minor concrete pavement.

2. Construction limits may be changed to fit field conditions as approved by the CO.

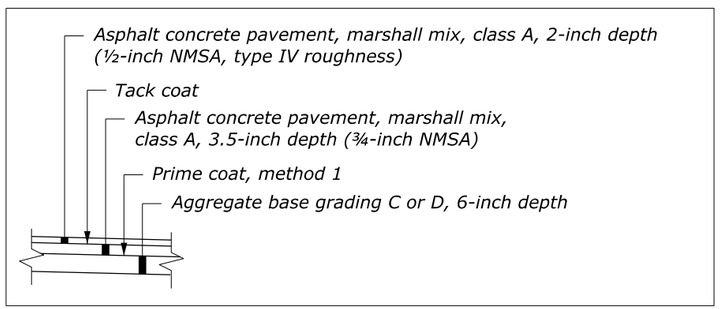
3. Place 4-inch topsoil and apply turf establishment to disturbed areas and as directed by the CO.

4. For standards and details, see Standards And Details References sheet.



30+11.81 to 33+50.00

PAVEMENT STRUCTURE



NO.	DATE	BY	REVISIONS

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

NO SCALE

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TYPICAL SECTIONS

ROUTE 381

Sheet 1 of 3

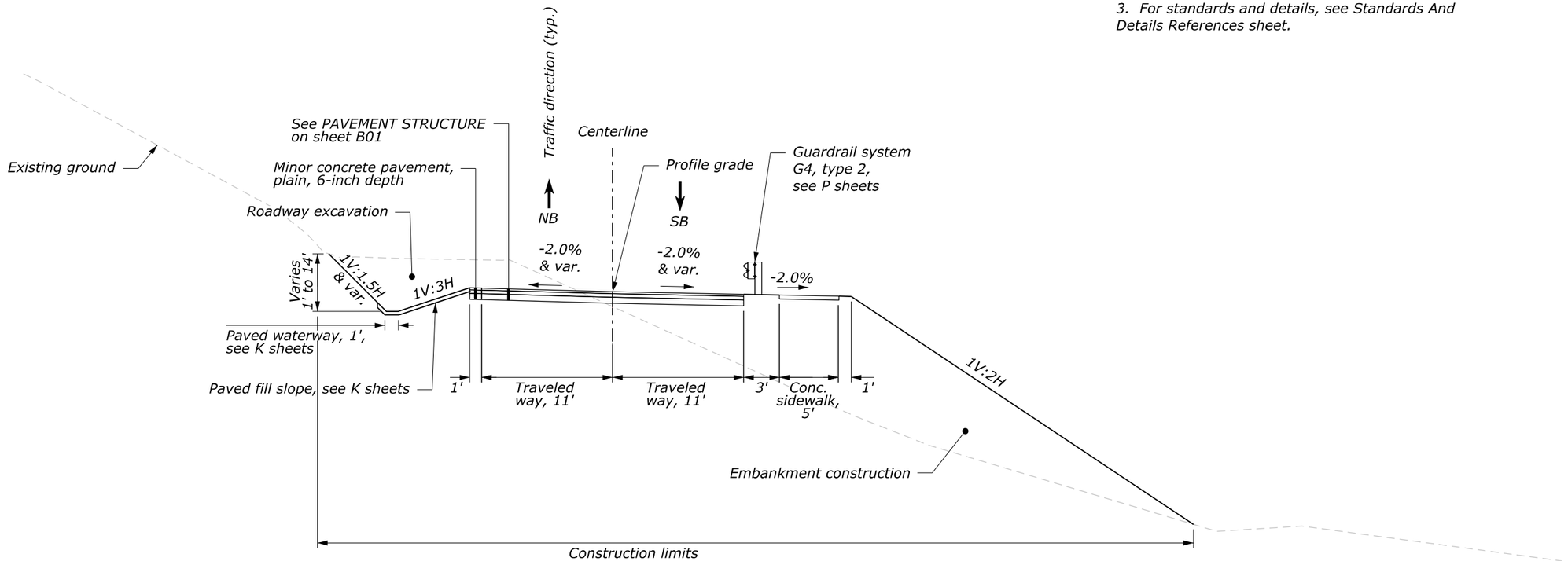
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	B02

NOTES:

1. Construction limits may be changed to fit field conditions as approved by the CO.

2. Place 4-inch topsoil and apply turf establishment to disturbed areas and as directed by the CO.

3. For standards and details, see Standards And Details References sheet.



33+50.00 to 37+54.73

NO.	DATE	BY	REVISIONS

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

NO SCALE

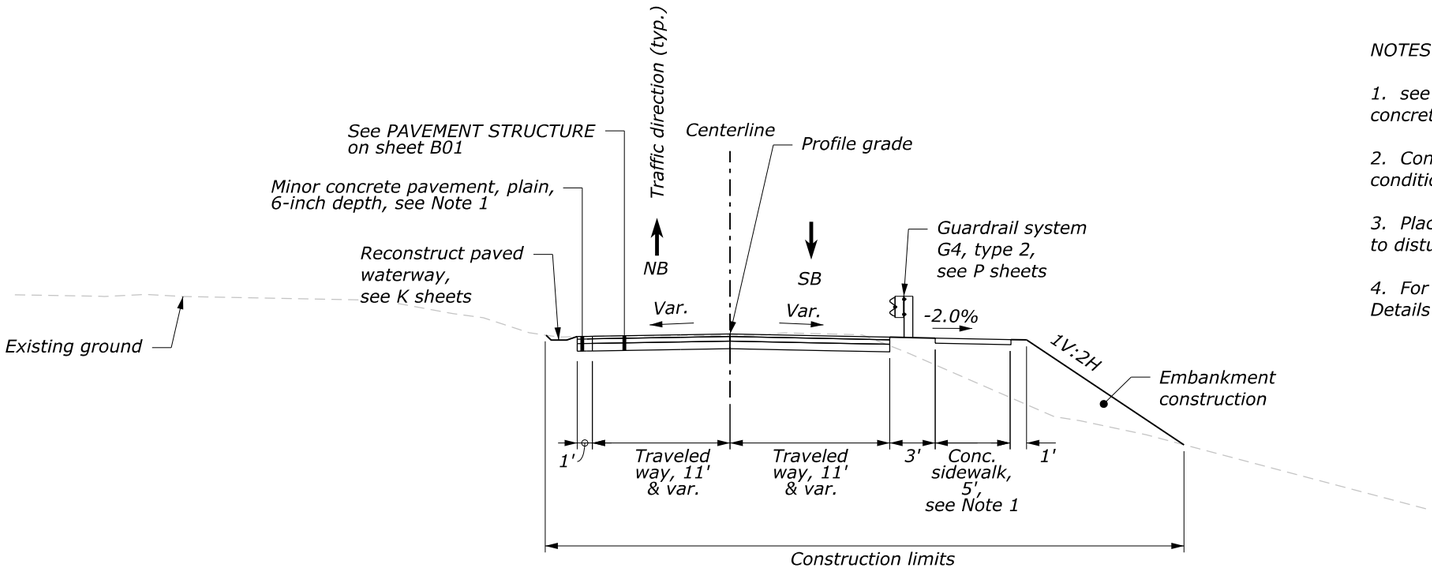
GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TYPICAL SECTIONS

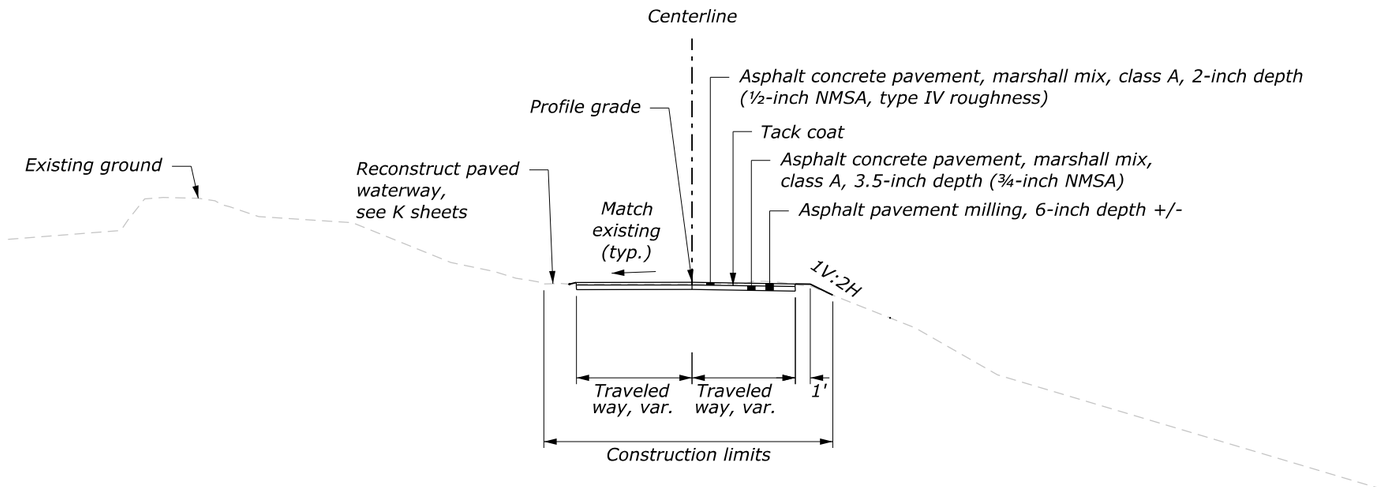
ROUTE 381

Sheet 2 of 3

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	B03



37+54.73 to 40+30.00



40+30.00 to 40+56.15

NOTES:

1. see D sheets for limits of sidewalk and minor concrete pavement.

2. Construction limits may be changed to fit field conditions as approved by the CO.

3. Place 4-inch topsoil and apply turf establishment to disturbed areas and as directed by the CO.

4. For standards and details, see Standards And Details References sheet.

NO.	DATE	BY	REVISIONS

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

NO SCALE

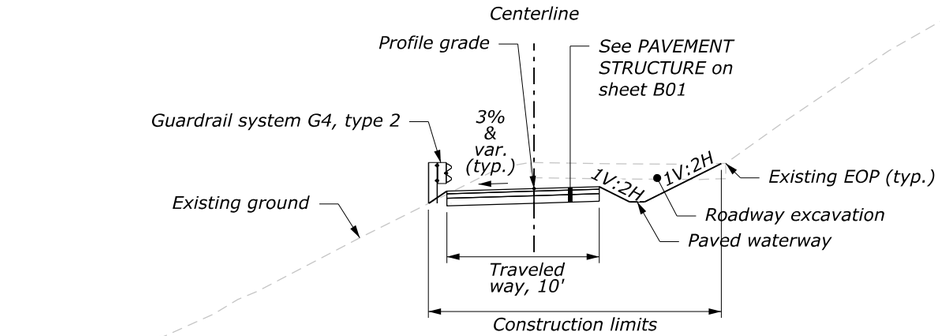
GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

PLAN.B.US

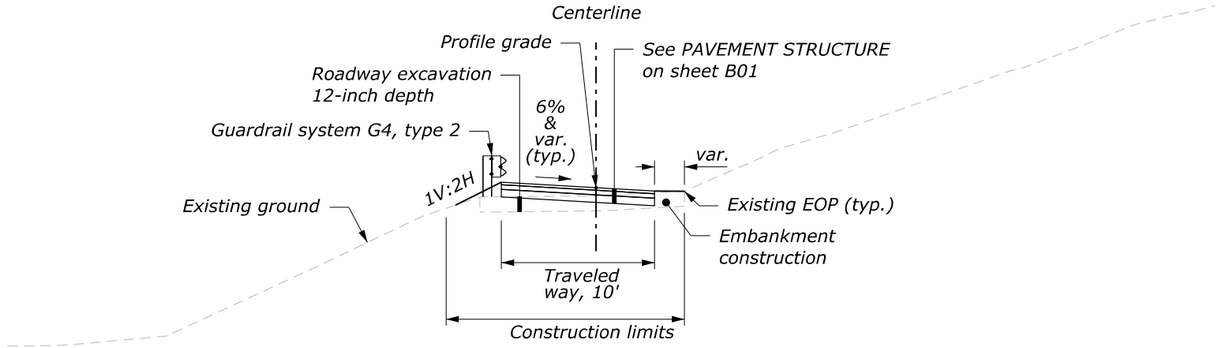
SHEET SUB-TITLE 1

SHEET SUB-TITLE 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	B04



80+20.00 to 81+25.00



81+25.00 to 83+82.47

NOTES:

1. Construction limits may be changed to fit field conditions as approved by the CO.

2. Place 4-inch topsoil and apply turf establishment to disturbed areas and as directed by the CO.

3. For standards and details, see Standards And Details References sheet.

NO.	DATE	BY	REVISIONS

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

NO SCALE

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TYPICAL SECTIONS

HOTEL DRIVEWAY

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28 April 2025 7:44 AM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	C1

Line Item No.	Pay Item Number	Pay Item Description	Unit					Estimated Quantities
				1:ALL	2:RTE 381	3:HOTEL DRIVEWAY	4:AS NEEDED	Bid Schedule
A0200	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM	All				ALL
A0220	15401-0000	CONTRACTOR TESTING	LPSM	All				ALL
A0240	15401-0000	CONTRACTOR TESTING (ARCHAEOLOGICAL MONITORING)	LPSM	All				ALL
A0260	15705-0100	SOIL EROSION CONTROL, SILT FENCE	LNFT		1,660	800	340	2,800
A0280	15706-1600	SOIL EROSION CONTROL, STABILIZED CONSTRUCTION EXIT	EACH		1			1
A0300	15720-0000	STORMWATER POLLUTION PREVENTION PLAN	LPSM	All				ALL
A0320	20101-0000	CLEARING AND GRUBBING	ACRE		1.3	0.1	0.2	1.6
A0340	20302-0400	REMOVAL OF CURB, ASPHALT	LNFT		565		35	600
A0360	20302-0700	REMOVAL OF FENCE	LNFT		200			200
A0380	20302-1200	REMOVAL OF GUARDRAIL	LNFT	180				180
A0400	20302-1900	REMOVAL OF PAVED WATERWAY, CONCRETE	LNFT		292		8	300
A0420	20302-2100	REMOVAL OF PIPE CULVERT	LNFT		80			80
A0440	20304-1000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (TWO EXISTING STONE PILLARS)	LPSM			All		ALL
A0460	20401-0000	ROADWAY EXCAVATION	CUYD			136	4	140
A0480	20420-0000	EMBANKMENT CONSTRUCTION	CUYD		5,018		32	5,050
A0500	21101-1000	ROADWAY OBLITERATION, METHOD 1	SQYD			235	15	250
A0520	25102-0200	PLACED RIPRAP, CLASS 2	TON		316		4	320
A0540	30101-4000	AGGREGATE BASE GRADING C OR D	TON		690	124	46	860
A0560	40201-0100	ASPHALT CONCRETE PAVEMENT, MARSHALL MIX, CLASS A (1/2 INCH NMSA, PG 64-22, ROUGHNESS TYPE IV)	TON		251	45	24	320
A0580	40201-0100	ASPHALT CONCRETE PAVEMENT, MARSHALL MIX, CLASS A (3/4 INCH NMSA, PG 64-22)	TON		443	80	27	550
A0600	41102-1000	PRIME COAT, METHOD 1	SQYD		2,797	423	180	3,400
A0620	41202-0000	TACK COAT	GAL		280	42	28	350
A0640	50101-0600	MINOR CONCRETE PAVEMENT, REINFORCED, 6-INCH DEPTH	SQYD			100		100

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OFFICE OF FEDERAL LANDS HIGHWAY

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TABULATION OF QUANTITIES

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	C2

Line Item No.	Pay Item Number	Pay Item Description	Unit				Estimated Quantities
				1:ALL	2:RTE 381	3:HOTEL DRIVEWAY	4:AS NEEDED	Bid Schedule
A0660	60103-0140	CONCRETE, HEADWALL FOR 24-INCH PIPE CULVERT (WITH WINGWALLS)	EACH		2			2
A0680	60201-0800	24-INCH PIPE CULVERT	LNFT		223		27	250
A0700	60210-0800	END SECTION FOR 24-INCH PIPE CULVERT	EACH		2			2
A0720	60403-1400	INLET, FLH TYPE 5B (MODIFIED)	EACH		1			1
A0740	60403-1900	INLET, FLH TYPE 6B	EACH		1			1
A0760	60802-0400	PAVED WATERWAY, TYPE 4	LNFT		716		34	750
A0780	61001-0100	SIDEWALK, CONCRETE	SQYD		436		14	450
A0800	61701-4500	GUARDRAIL SYSTEM MGS, TYPE 2, CLASS A, STEEL POSTS	LNFT		850	220	30	1,100
A0820	61702-1500	TERMINAL SYSTEM, TYPE MGS TANGENT	EACH	2	3	2		7
A0840	62011-5000	STONE MASONRY PILLAR (4'x 4'x 8', LIGHT FIXTURE INCLUDED)	EACH			2		2
A0860	62401-0300	PROVIDING AND PLACING TOPSOIL, 4-INCH DEPTH	SQYD		2,900	433	167	3,500
A0880	62501-0000	TURF ESTABLISHMENT	ACRE		0.6	0.1	0.1	0.8
A0900	62901-0800	ROLLED EROSION CONTROL PRODUCT, TYPE 2.D	SQYD		2,900	433	267	3,600
A0920	63304-0900	SIGNS, ALUMINUM PANELS, TYPE 3 SHEETING	SQFT			6	6	30
A0940	63401-1500	PAVEMENT MARKINGS, TYPE H, SOLID	LNFT		4,850		150	5,000
A0960	63405-2900	PAVEMENT MARKINGS, TYPE H, TURN ARROW	EACH		1			1
A0980	63405-3000	PAVEMENT MARKINGS, TYPE H, STRAIGHT/TURN ARROW COMBINATION	EACH		1			1
A1000	63406-0000	RAISED PAVEMENT MARKER	EACH		260			260
A1020	63502-0900	TEMPORARY TRAFFIC CONTROL, CONE, TYPE 28-INCH	EACH	64			6	70
A1040	63503-0300	TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	LNFT	36			4	40
A1060	63504-1000	TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	SQFT	55			5	60
A1080	63701-0000	FIELD OFFICE	EACH	1				1

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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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TABULATION OF QUANTITIES

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	C3

STRUCTURE ID	ROUTE NAME	STATION		SIDE	Schedule A Pay Item 20302-1900 REMOVAL OF PAVED WATERWAY, CONCRETE LNFT	Schedule A Pay Item 20302-2100 REMOVAL OF PIPE CULVERT LNFT	Schedule A Pay Item 60103-0140 CONCRETE, HEADWALL FOR 24-INCH PIPE CULVERT EACH	Schedule A Pay Item 60201-0800 24-INCH PIPE CULVERT LNFT	Schedule A Pay Item 60210-0800 END SECTION FOR 24-INCH PIPE CULVERT EACH	Schedule A Pay Item 60403-1400 INLET, FLH TYPE 5B (Modified) EACH	Schedule A Pay Item 60403-1900 INLET, FLH TYPE 6B EACH	Schedule A Pay Item 60802-0400 PAVED WATERWAY, TYPE 4 LNFT
		38+16.00	41+08.04		292.0							
HW 3092L	RTE 381	See sheet K05					1					
C2-P03	RTE 381							66.10				
HW 3075R	RTE 381						1					
Riprap	RTE 381											
I 3325R	Driveway	See sheet K04									1	
C2-P02	Driveway							71.6				
ES 3245R	Driveway								1			
Riprap	Driveway											
I 3373L	Hotel Driveway	See sheet K03								1		
C2-P01	Hotel Driveway							81.1				
ES 3306L	Hotel Driveway								1			
Riprap	Hotel Driveway											
Riprap between cut and fill	RTE 381	31+00.00	31+80.00	LT								
	RTE 381	30+80.00	31+30.00	RT								
Paved waterway	RTE 381	31+32.50	32+37.50	RT								105.0
	RTE 381	31+80.00	32+30.00	LT								50.0
	RTE 381	31+30.00	32+37.50	RT								107.5
	RTE 381	33+81.12	37+54.73	LT								373.6
	RTE 381	Reconstruction		LT								100.0
	Hotel Driveway	80+81.42	81+00.00	RT								18.6
	Driveway	Sheet K01				80.0						
Subtotal this Sheet					292.0	80.0	2	218.8	2	1	1	754.7
Rounded Total					300	80	2	250	2	1	1	750

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DRAINAGE SUMMARY

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	C4

PERMANENT SIGNS SUMMARY

SHEET	ROUTE NUMBER	ROUTE NAME	LOCATION		MUTCD NO.	SIGN TEXT	PANEL SIZE			COLOR COMBINATION	QUANTITY	Schedule A Pay Item 63304-0100 SIGNS, STEEL PANELS, TYPE 3 SHEETING	SUPPORT (NO PAY)
			STATION	SIDE			WIDTH	HEIGHT	AREA				
							Inch	Inch	Sqft			SQFT	Ft
P01	381		30+21	RT	R1-1	STOP	30	30	6.25	White on Red	1	6.3	10
P01		Hotel Drivway	80+25	RT	R1-1	STOP	30	30	6.25	White on Red	1	6.3	10
P01	381		31+61	LT	R2-1	SPEED LIMIT	24	30	5.00	Black on White	1	5.0	10
P02	381		31+61	RT	R3-8	ADVANCE INTERSECTION LANE CONTROL	30	30	6.25	Black on White	1	6.3	10
										Subtotal this Sheet		23.8	40
										Rounded Total		30	*

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

* For information only

PERMANENT PAVEMENT MARKINGS SUMMARY

ROUTE NUMBER	STATION TO STATION				SIDE	MARKING WIDTH *	DOUBLE OR SINGLE LINE	Schedule A Pay Item 63401-1500 PAVEMENT MARKINGS, TYPE H, SOLID		Schedule A Pay Item 63405-2900 PAVEMENT MARKINGS, TYPE H, TURN ARROW	Schedule A Pay Item 63405-2900 PAVEMENT MARKINGS, TYPE H, TURN ARROW	Schedule A Pay Item 63406-0000 RAISED PAVEMENT MARKER
								LNFT		EACH	EACH	EACH
						INCH		White	Yellow	White	White	
381	30+22	to	40+56		CL	4	D		2,068			259
381	30+22	to	40+56		LT	4	S	1,034				
381	30+22	to	40+56		RT	4	S	1,034				
381	30+22	to	31+60		LT	4	S	138				
381	STOP LINE					24	S	576				
381										1		
381											1	
								Split Subtotal This Sheet	2,782	2,068		
								Subtotal This Sheet	4,850	1	1	259
								Rounded Total	5,000	1	1	260

* All pavement marking lengths are in 4-inch width equivalents.

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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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PERMANENT SIGNS & PAVEMENT MARKINGS SUMMARIES

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STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	000

CONSTRUCTION SIGNS SUMMARY

SCHEDULE	ROUTE NUMBER	MUTCD NO.	SIGN TEXT	PANEL SIZE WIDTH (in)	PANEL SIZE HEIGHT (in)	PANEL SIZE AREA (sqft)	COLOR COMBINATION	QUANTITY	Schedule A Pay Item 63504-1000 TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN SQFT	SUPPORT (NO PAY) FT
A	38	G20-2	END ROAD WORK	36	18	4.50	Black on Orange	2	9.0	
A	381	R11-2	ROAD CLOSED	48	30	10.00	Black on White	1	10.0	
A	38	W20-1	ROAD WORK AHEAD	36	36	9.00	Black on Orange	2	18.0	
A	381	W20-1	ROAD WORK AHEAD	36	36	9.00	Black on Orange	1	9.0	
A	38	W21-5	SHOULDER WORK	36	36	9.00	Black on Orange	1	9.0	
								Subtotal this Sheet	55.0	0
								Rounded Total	60	*

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

* For information only

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CONSTRUCTION SIGNS SUMMARY

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D01

Remove stone masonry pillars (2) and stone curbs, 25'. Reconstruction of stone masonry pillars (2) and stone curbs at approved locations. See Section 620

Roadway obliteration, method 2

0+10.00 BEGIN WORK ENTRANCE ROAD = 83+40.39 HOTEL DRIVEWAY

END WORK HOTEL DRIVEWAY
83+82.47
N 185404.025
E 1028374.675

END WORK ENTRANCE ROAD
0+15.50
N= 185,378.816
E= 1,028,409.081

ENTRANCE ROAD

HOTEL DRIVEWAY

RTE 38

RTE 381

BEGIN WORK
RTE 381
30+11.81
N 185189.052
E 1028825.346

30+16.81
OFF -44.28'

Centerline

Limit of disturbance

Remove existing fence

Limit of pavement reconstruction in future project (Contract 3)
31+70.59

Roadway obliteration, method 2

Place riprap class 3 at culvert outlet (typ.)

Paved waterway, see K sheets

Paved fill slope

Centerline

EOP (typ.)

Edge of concrete pavement

Install pipe culvert (typ.), see K sheets

Accessibility ramp

Toe of fill (typ.)

Concrete sidewalk 30+65.70 to 32+72.17

Paved waterway, see K sheets (typ.)

Top of cut (typ.)

DRIVEWAY

Remove existing pipe culvert

END WORK DRIVEWAY
0+44.82, N 185458.182, E 1028777.845

80+00.00 BEGIN WORK HOTEL DRIVEWAY = 33+52.12 RTE 381

Concrete sidewalk 33+13.33 to 38+77.55

Guardrail system G4, type 2 (typ.)

MATCH LINE 35+04.35

NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to Entrance Road and driveways at all time.

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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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CONSTRUCTION PLAN

RTE 381

Sheet 1 of 2

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STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D02

NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to Entrance Road and driveways at all time.

END WORK
RTE 381
40+56.15
N 186106.656
E 1028791.716

Remove existing concrete curb
Remove existing paved waterway
Edge of concrete pavement
Paved waterway, see K sheets
Paved fill slope
Concrete sidewalk 33+13.33 to 38+77.55
Guardrail system G4, type 2 (typ.)
Toe of fill (typ.)
End sidewalk 38+77.55
Centerline
MATCH LINE 35+04.31
1\2 IN REBAR CAP DESTROYED
MAG NAIL FOUND
RTE 381
LOD
R/W
EOP

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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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CONSTRUCTION PLAN

RTE 381

Sheet 2 of 2

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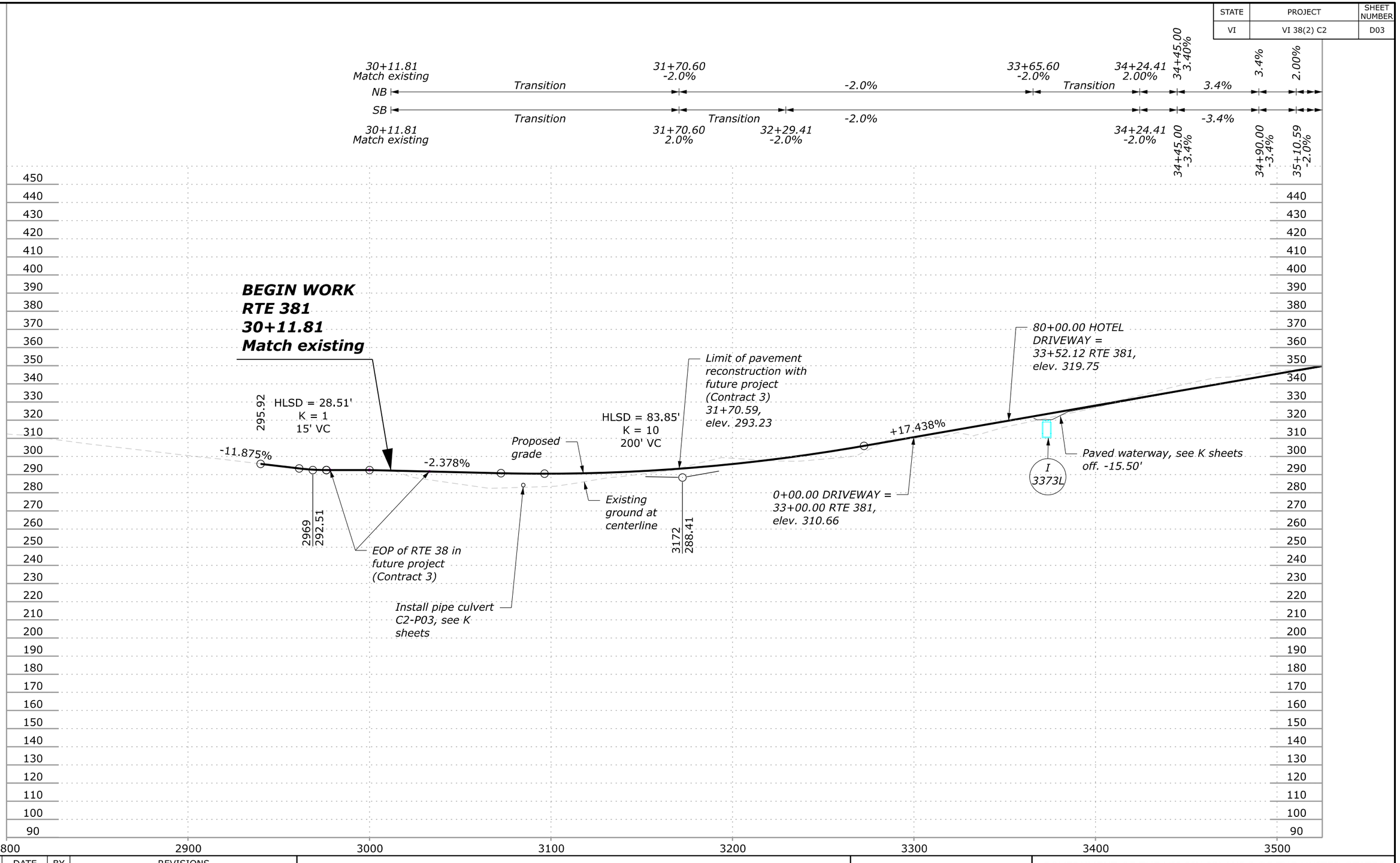
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D03



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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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CONSTRUCTON PROFILE

RTE 381

Sheet 1 of 2

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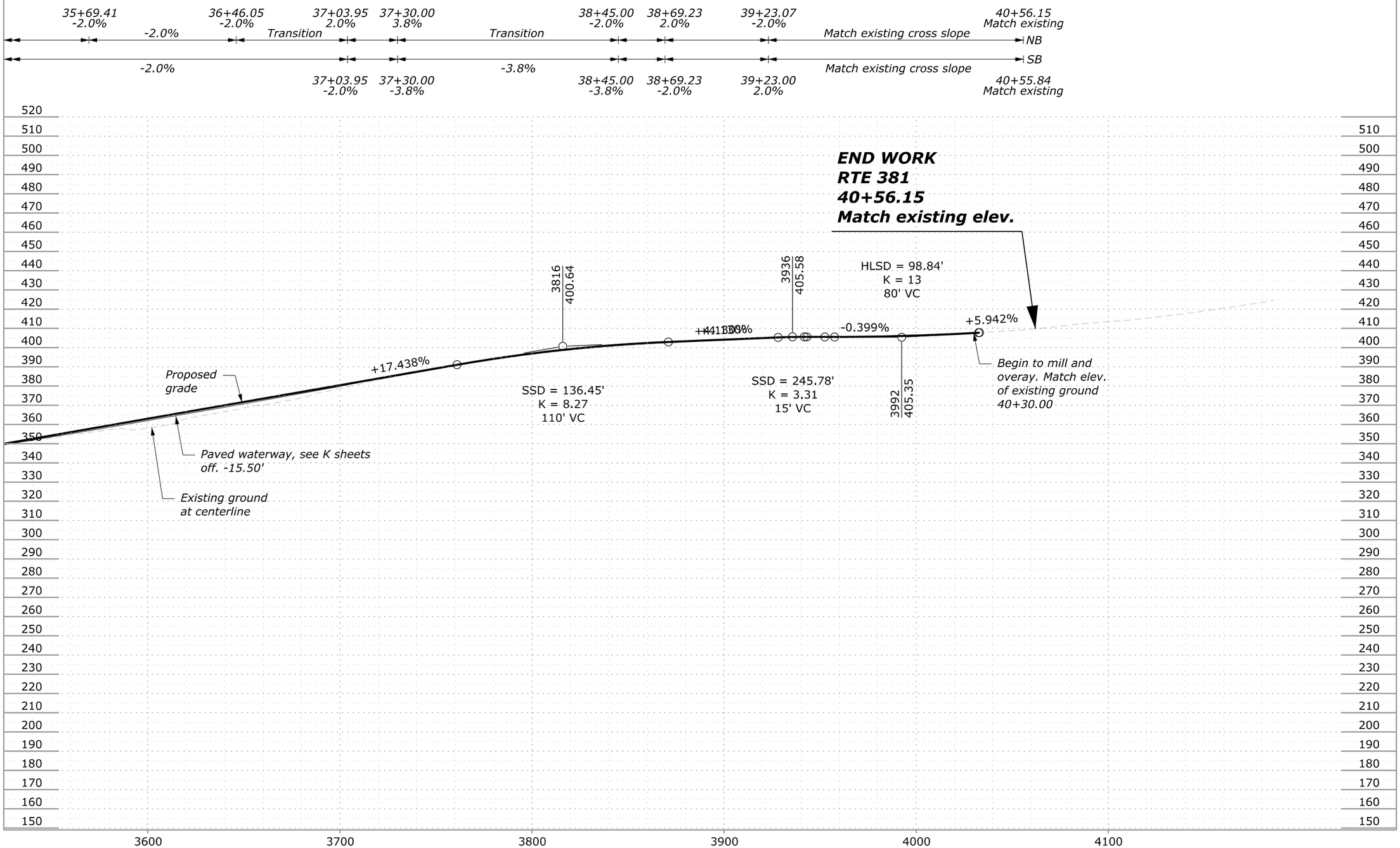
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D04



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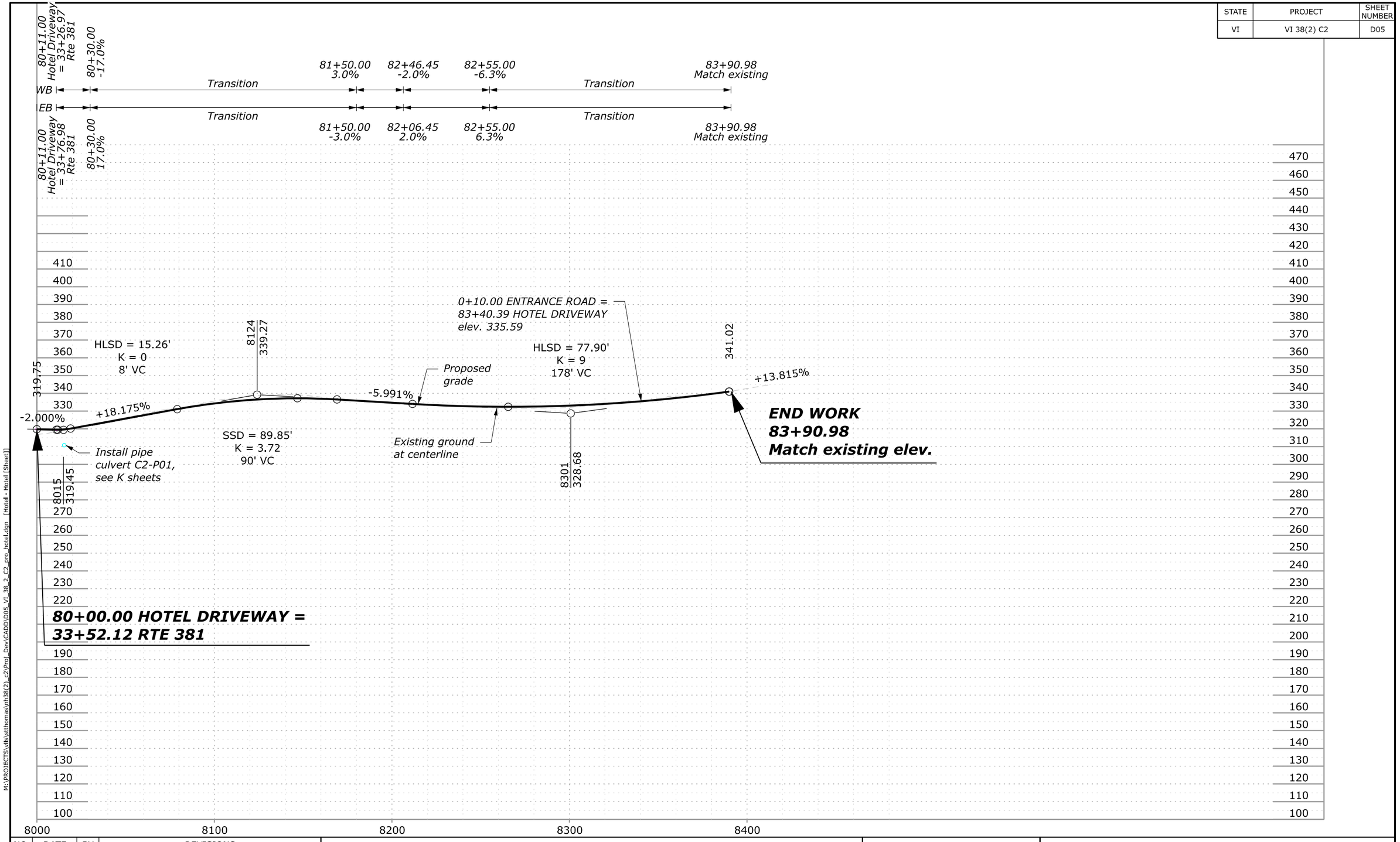
GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PROFILE

RTE 381

Sheet 2 of 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D05



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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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CONTRUCTION PROFILE

HOTEL DRIVEWAY

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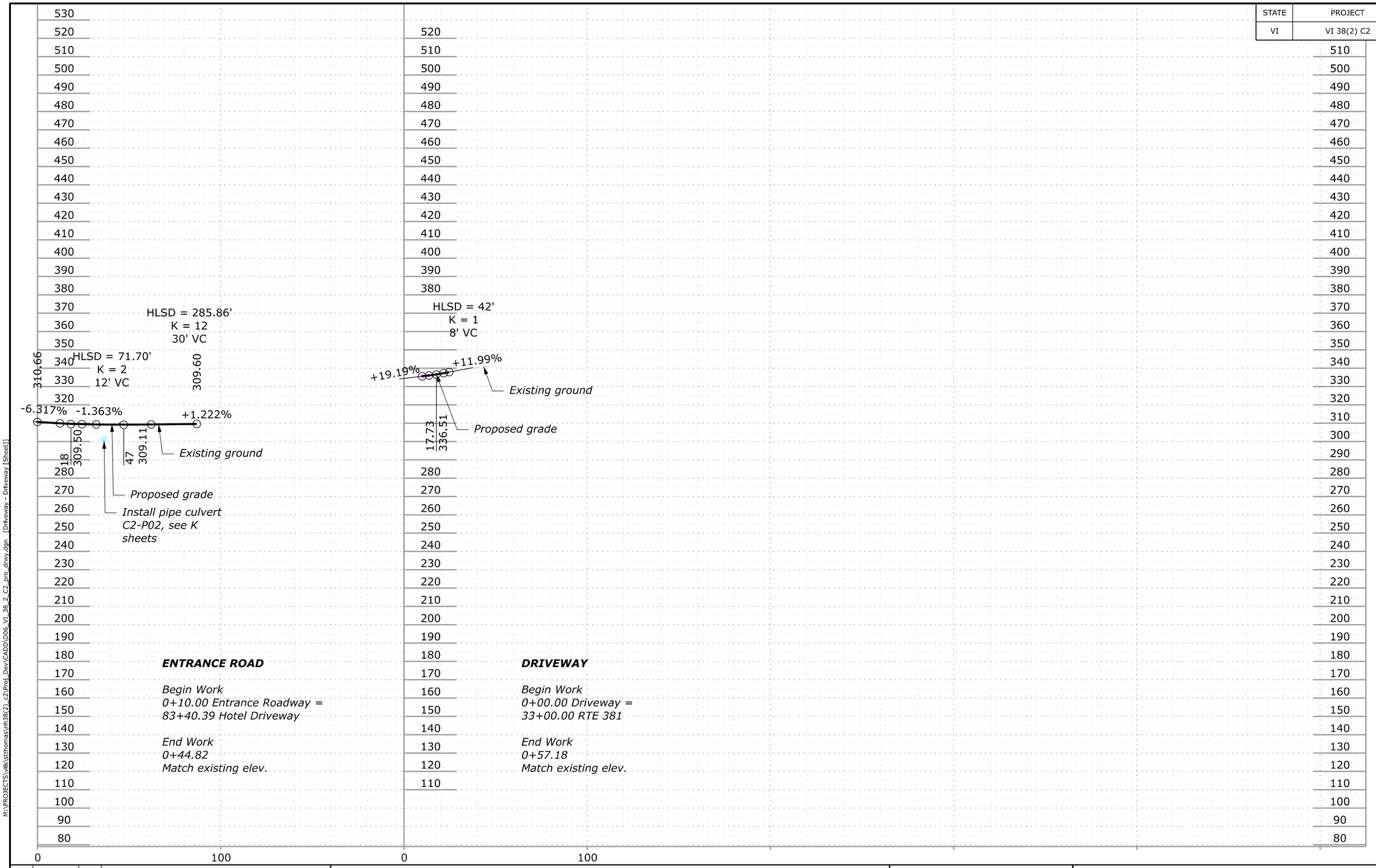
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D06



ENTRANCE ROAD

Begin Work
0+10.00 Entrance Roadway =
83+40.39 Hotel Driveway

End Work
0+44.82
Match existing elev.

DRIVEWAY

Begin Work
0+00.00 Driveway =
33+00.00 RTE 381

End Work
0+57.18
Match existing elev.

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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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CONSTRUCTION PROFILE

ENTRANCE ROAD AND DRIVEWAY

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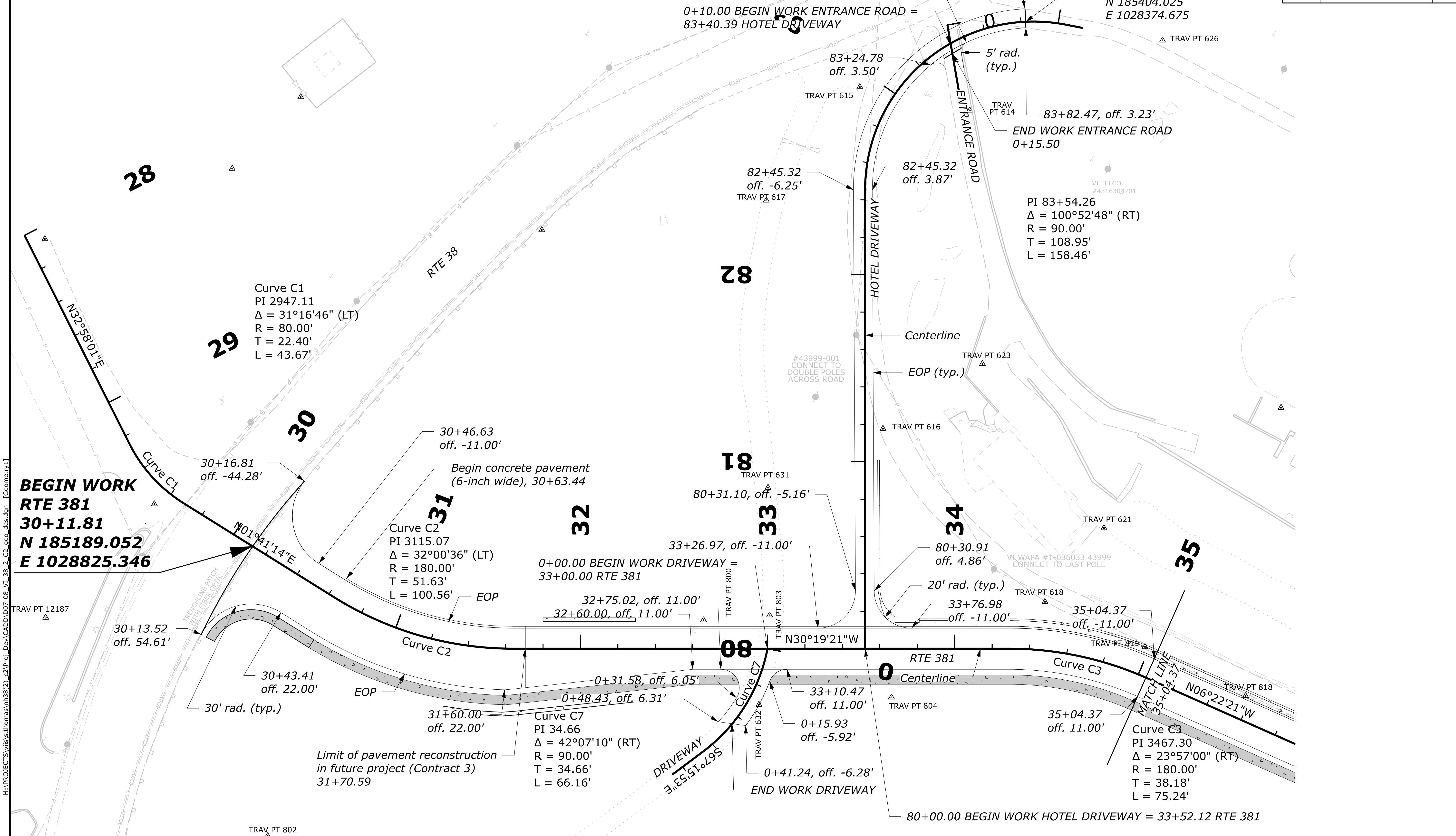
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D07



83+82.47, off. -6.94'
83+48.29, off. 3.39'
0+10.00 BEGIN WORK ENTRANCE ROAD = 83+40.39 HOTEL DRIVEWAY
END WORK HOTEL DRIVEWAY
83+82.47
N 185404.025
E 1028374.675
TRAV PT 626
83+24.78
off. 3.50'
5' rad. (typ.)
TRAV PT 615
TRAV PT 614
83+82.47, off. 3.23'
END WORK ENTRANCE ROAD
0+15.50
ENTRANCE ROAD
82+45.32
off. -6.25'
82+45.32
off. 3.87'
TRAV PT 617
VI TELCO
PI 83+54.26
Δ = 100°52'48" (RT)
R = 90.00'
T = 108.95'
L = 158.46'
28
RTE 38
82
HOTEL DRIVEWAY
Curve C1
PI 2947.11
Δ = 31°16'46" (LT)
R = 80.00'
T = 22.40'
L = 43.67'
29
N32°58'01"E
Centerline
EOP (typ.)
#43999-001
CONNECT TO DOUBLE POLES ACROSS ROAD
TRAV PT 623
TRAV PT 616
30
30+46.63
off. -11.00'
30+16.81
off. -44.28'
Begin concrete pavement (6-inch wide), 30+63.44
81
TRAV PT 631
80+31.10, off. -5.16'
Curve C1
BEGIN WORK
RTE 381
30+11.81
N 185189.052
E 1028825.346
31
32
33
34
TRAV PT 621
35
Curve C2
PI 3115.07
Δ = 32°00'36" (LT)
R = 180.00'
T = 51.63'
L = 100.56'
EOP
N01°41'14"E
33+26.97, off. -11.00'
80+30.91
off. 4.86'
0+00.00 BEGIN WORK DRIVEWAY = 33+00.00 RTE 381
20' rad. (typ.)
TRAV PT 618
TRAV PT 12187
32+75.02, off. 11.00'
32+60.00, off. 11.00'
TRAV PT 800
TRAV PT 803
33+76.98
off. -11.00'
35+04.37
off. -11.00'
30+13.52
off. 54.61'
N30°19'21"W
TRAV PT 819
Curve C2
80
RTE 381
Curve C3
30+43.41
off. 22.00'
0
Centerline
MATCH LINE 35+04.37
TRAV PT 818
EOP
0+31.58, off. 6.05'
33+10.47
off. 11.00'
N06°22'21"W
0+48.43, off. 6.31'
Curve C7
TRAV PT 804
30' rad. (typ.)
31+60.00
off. 22.00'
Curve C7
PI 34.66
Δ = 42°07'10" (RT)
R = 90.00'
T = 34.66'
L = 66.16'
TRAV PT 632
0+15.93
off. -5.92'
35+04.37
off. 11.00'
Curve C3
PI 3467.30
Δ = 23°57'00" (RT)
R = 180.00'
T = 38.18'
L = 75.24'
Limit of pavement reconstruction in future project (Contract 3) 31+70.59
DRIVEWAY
S67°15'53"E
0+41.24, off. -6.28'
END WORK DRIVEWAY
80+00.00 BEGIN WORK HOTEL DRIVEWAY = 33+52.12 RTE 381
TRAV PT 802

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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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GEOMETRY & CONTROL POINTS

Sheet 1 of 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	D08

TRAV PT 639
TRAV PT 637
TRAV PT 638
TRAV PT 636
TRAV PT 629
TRAV PT 641
TRAV PT 635
TRAV PT 624
TRAV PT 642
TRAV PT 625
TRAV PT 630
37
38
36
35
Edge of concrete pavement
(6-inch wide)
EOP
TRAV PT 619
TRAV PT 817
#43999004
TRAV PT 13008
TRAV PT 13209
35+04.37
off. -11.00'
TRAV PT 818
N06°22'21"W
RTE 381
Curve C5
TRAV PT 816
Curve C5
PI 3796.51
Δ = 63°51'01" (RT)
R = 130.00'
T = 81.00'
L = 144.87'
38+60.39
off. -11.00'
39
TRAV PT 819
EOP
Centerline
PC 3715.52
PT 3860.39
TRAV PT 651
38+80.00
off. 11.00'
N57°28'40"E
39+04.79
off. 11.00
TRAV PT 13009
End concrete pavement
(6-inch wide), 39+65.07
40
41
PC 3932.05
PT 4013.87
END WORK
RTE 381
40+56.15
N 186106.656
E 1028791.716
TRAV PT 820
MATCH LINE
35+04.37
off. 11.00'
PT 3504.37
Curve C6
PI 3975.41
Δ = 46°52'48" (LT)
R = 100.00'
T = 43.36'
L = 81.82'
Curve C6
#43099905
1-Q36016
N10°35'52"E
Curve C7
TRAV PT 809
Match existing EOP
40+30.00
TRAV PT 622
POE 4186.27
PT 4128.82
N47°15'24"E
TRAV PT 810
TRAV PT 808
TRAV PT 813
PC 4077.63
Curve C7
PI 4104.13
Δ = 36°39'33" (RT)
R = 80.00'
T = 26.50'
L = 51.19'
TRAV PT 812
TRAV PT 811
TRAV PT 814
TRAV PT 807

NO.	DATE	BY	REVISIONS

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

0 25 50
SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

GEOMETRY & CONTROL POINTS

Sheet 2 of 2

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13 May 2025 1:53 PM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	K01

0+10.00 BEGIN WORK ENTRANCE ROAD =
83+40.39 HOTEL DRIVEWAY

END WORK HOTEL DRIVEWAY
83+82.47
N 185404.025
E 1028374.675

END WORK ENTRANCE ROAD
0+15.50
N= 185,378.816
E= 1,028,409.081

NOTES:

1. For referenced standards and details, see S sheets.
2. Work limits may be changed to fit field conditions as approved by the CO.
3. Maintain access to Entrance Road and driveways at all time.

BEGIN WORK
RTE 381
30+11.81
N 185189.052
E 1028825.346

30+16.81
OFF -44.28'

EOP (typ.)
Toe of fill (typ.)
Paved waterway
31+80.00 to
32+30.00
Paved waterway
31+30.00 to
32+37.50
Top of cut
(typ.)
Install pipe culvert (typ.)
24" RCP
C2-P03
Skew
15.75°
HW
3092L
HW
3075R
ES
3306L
Place riprap
class 3 at
culvert
outlet (typ.)
24" RCP
C2-P01
I
3373L
Begin paved waterway, 80+81.42
Begin paved waterway (off. 15.5')
Begin paved fill slope
33+81.12
Centerline
35+04.37
off. 18.00'
MATCH LINE
35+04.37
RTE 381
Remove existing pipe culvert
Skew
20.66°
24" RCP
C2-P02
ES
3245R
I
3325R
End paved waterway
81+00.00
off. 8.7'
HOTEL DRIVEWAY
ENTRANCE ROAD
Centerline
DRIVEWAY
RTE 38
LOD
R/W

NO.	DATE	BY	REVISIONS

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

0 25 50
SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

DRAINAGE PLAN

RTE 381

Sheet 1 of 2

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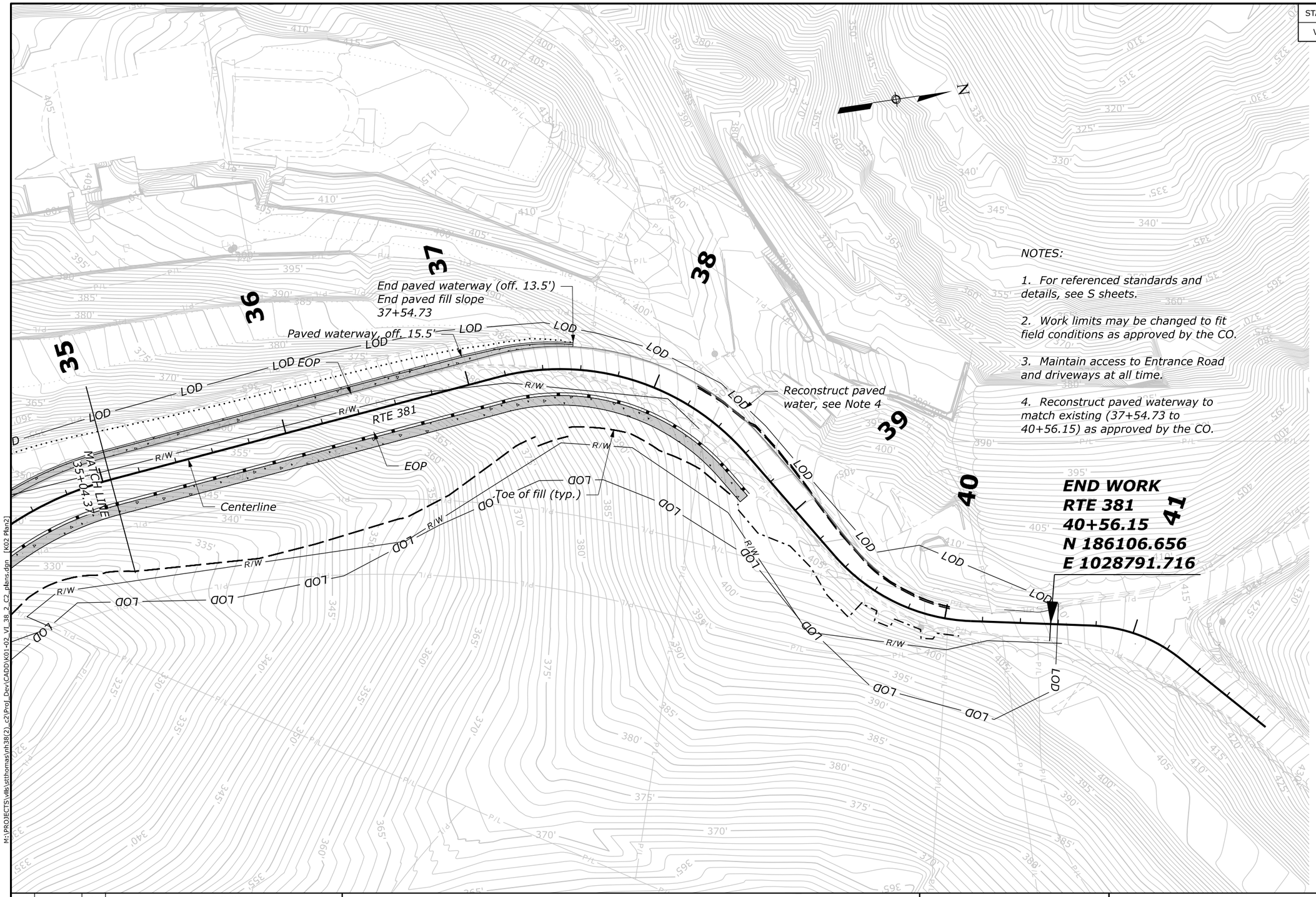
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	K02



NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to Entrance Road and driveways at all time.

4. Reconstruct paved waterway to match existing (37+54.73 to 40+56.15) as approved by the CO.

NO.	DATE	BY	REVISIONS

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

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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

DRAINAGE PLAN

RTE 381

Sheet 2 of 2

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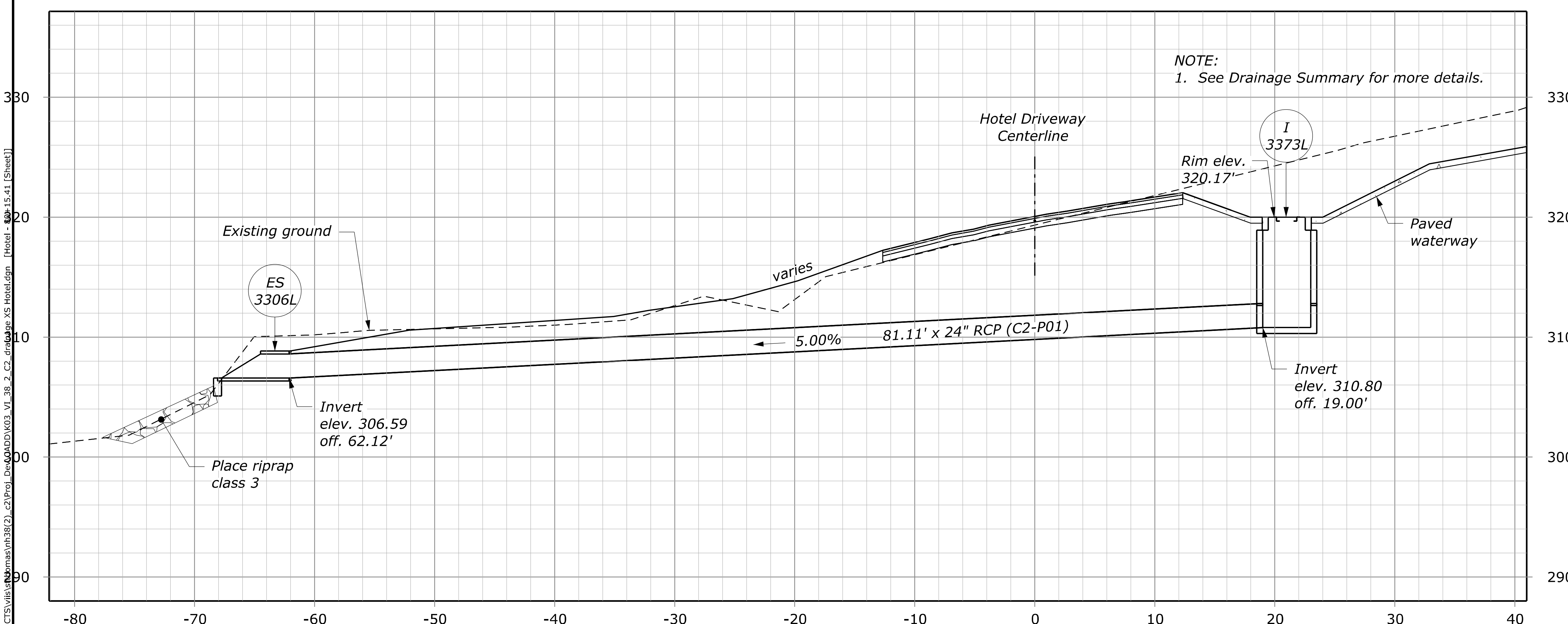
13 May 2025 3:35 PM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	K03



Hotel Driveway
80+15.41
Design grade = 320.36
Barrel skew = 0.00°

M:\PROJECTS\vi\stthomas\vh38(2)_c2\Proj_Dev\CADD\K03_VI_38_2_C2_drainage XS Hotel.dgn [Hotel - 80+15.41 [Sheet]]

13 May 2025 12:47 PM

NO.	DATE	BY	REVISIONS

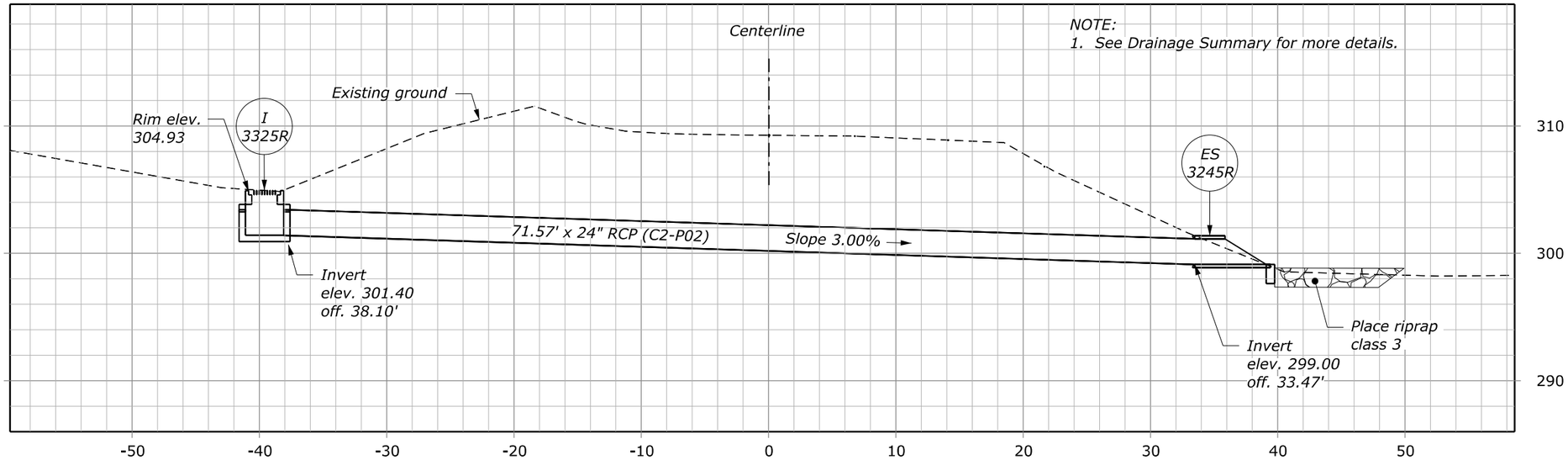
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTION

C2-P01

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	K04



Driveway
0+36.39
Design grade = Match existing
Barrel skew = 20.66°

NO.	DATE	BY	REVISIONS

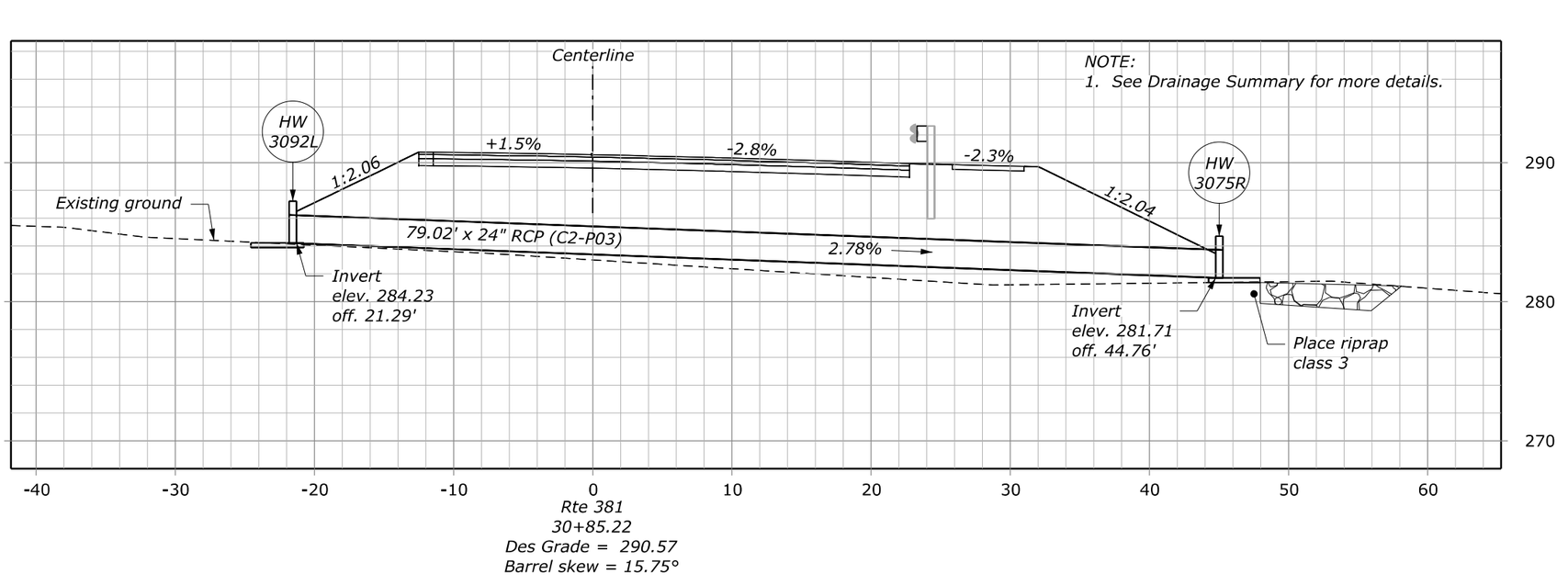
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTION

C2-P02

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	K05



NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTION

C2-P03

STATE	PROJECT	SHEET NO.
VI	VI 38(2) C2	M01

Project Description

This project consists of the construction/reconstruction of a 0.27-mile segment of Route 381. This work includes relocation of route 381, install new pipe culverts, and other miscellaneous work.

Soil disturbing activities include clearing and grubbing, and roadway grading.
The total disturbed area for the project is approximately 2.3 acres. The receiving water is Long Bay.

Approximately 0.60 acres of new impervious surface will be created by the reconstructed roadway.
The Runoff Coefficient prior to construction is 0.60. The Runoff Coefficient after construction will be 0.63.

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-14, 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, grubbing, or excavation, construct perimeter controls to ensure that disturbed sediment does not leave the project site. Perimeter controls include silt fence and other specified measures outside the construction limits.

Phase II Intermediate Controls

Apply intermediate controls during rough grading operations. Install silt fence in areas surrounding the culverts as called out in the Erosion and Sediment Control plans. Install filter berms in ditches along the roadway.

Apply temporary turf establishment in disturbed areas that will remain exposed for over 14 calendar 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.

Provide silt fence around all stockpiled excavated roadway material. 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 silt fence only after all upslope areas are stabilized and vegetation is well established.*

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 roll - Remove sediment deposits from behind the fiber roll when it reaches half the height of the device. Depose of the sediment legally off-site.

Rolled erosion control product - Inspection includes checking for damage and erosion beneath the matting. Replacement of matting may be necessary if damaged by equipment. Check staples and stakes to make sure they are securely in the ground.

Silt fence - inspect for buildup of excess sediment, undercutting, sags, and other failures. If the fabric becomes damaged, repair or replace as necessary. Remove sediment from behind the silt fence when it becomes 0.5 feet deep at the fence.

Stabilized construction exit - Maintain in a condition which will prevent tracking or flow of mud onto public roads.

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

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

RELOCATION OF ROUTE 381

EROSION & SEDIMENT CONTROL NARRATIVE

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	M02

0+10.00 BEGIN WORK ENTRANCE ROAD =
83+40.39 HOTEL DRIVEWAY

END WORK HOTEL DRIVEWAY
83+82.47
N 185404.025
E 1028374.675

END WORK ENTRANCE ROAD
0+15.50
N= 185,378.816
E= 1,028,409.081

ENTRANCE ROAD

HOTEL DRIVEWAY

RTE 38

RTE 381

Centerline

Silt fence (typ.)

EOP (typ.)

Place riprap class 3 at culvert outlet (typ.)

Place riprap class 2 between cut and fill, 31+00 to 31+80

Toe of fill (typ.)

Place riprap class 2 between cut and fill, 30+80 to 31+30

RECP, type 2.D (slope stabilization, typ.)

Top of cut (typ.)

DRIVEWAY

BEGIN WORK
RTE 381
30+11.81
N 185189.052
E 1028825.346

30+16.81
OFF -44.28'

NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to Entrance Road and driveways at all time.

NO.	DATE	BY	REVISIONS

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

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SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

EROSION & SEDIMENT CONTROL

RTE 381

Sheet 1 of 2

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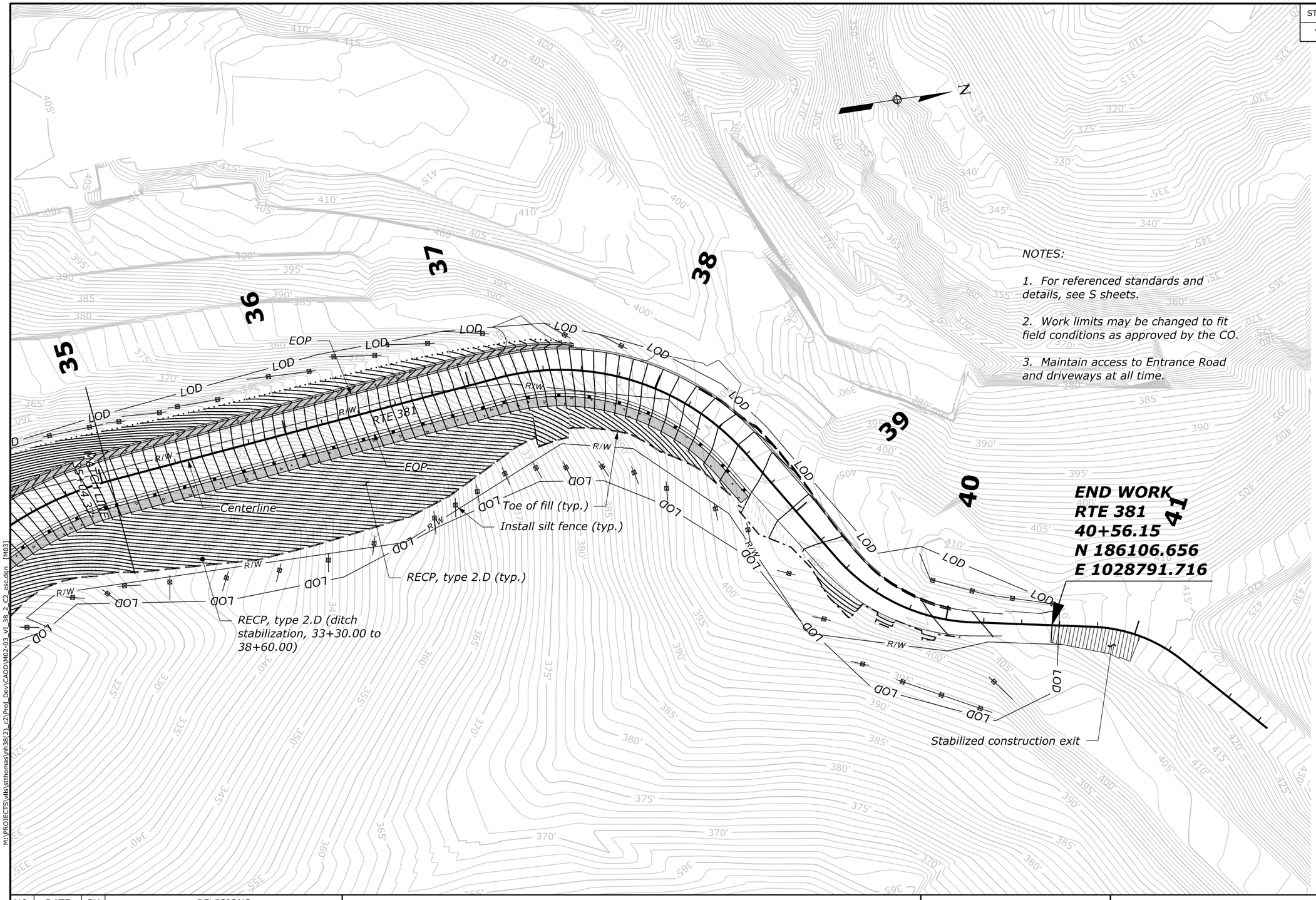
14 May 2025 8:07 AM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	M03



NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to Entrance Road and driveways at all time.

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NO.	DATE	BY	REVISIONS

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

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SCALE IN FEET

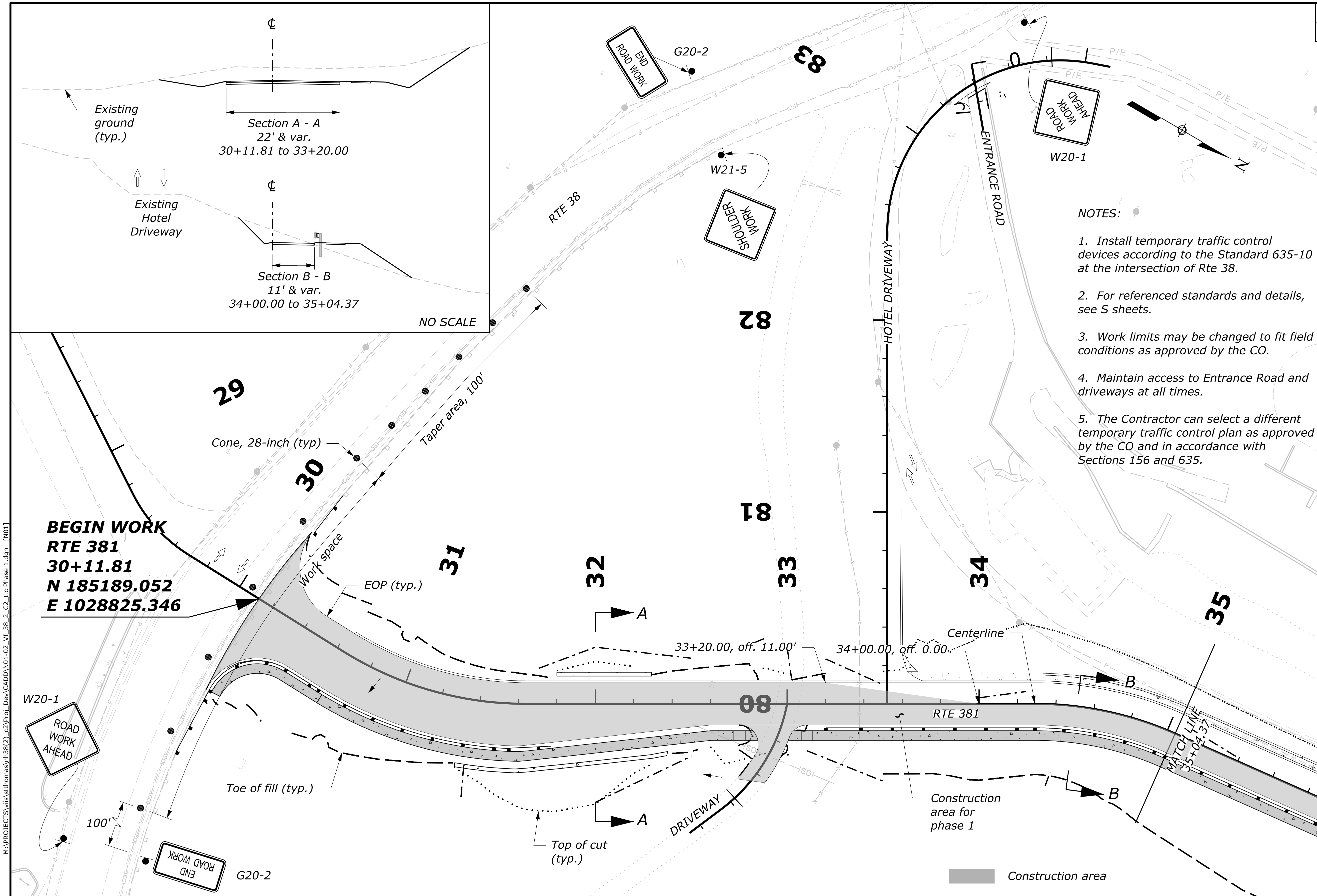
GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

EROSION & SEDIMENT CONTROL

RTE 381

Sheet 2 of 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	N01



NOTES:

1. Install temporary traffic control devices according to the Standard 635-10 at the intersection of Rte 38.

2. For referenced standards and details, see S sheets.

3. Work limits may be changed to fit field conditions as approved by the CO.

4. Maintain access to Entrance Road and driveways at all times.

5. The Contractor can select a different temporary traffic control plan as approved by the CO and in accordance with Sections 156 and 635.

NO.	DATE	BY	REVISIONS

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

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SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TEMPORARY TRAFFIC CONTROL

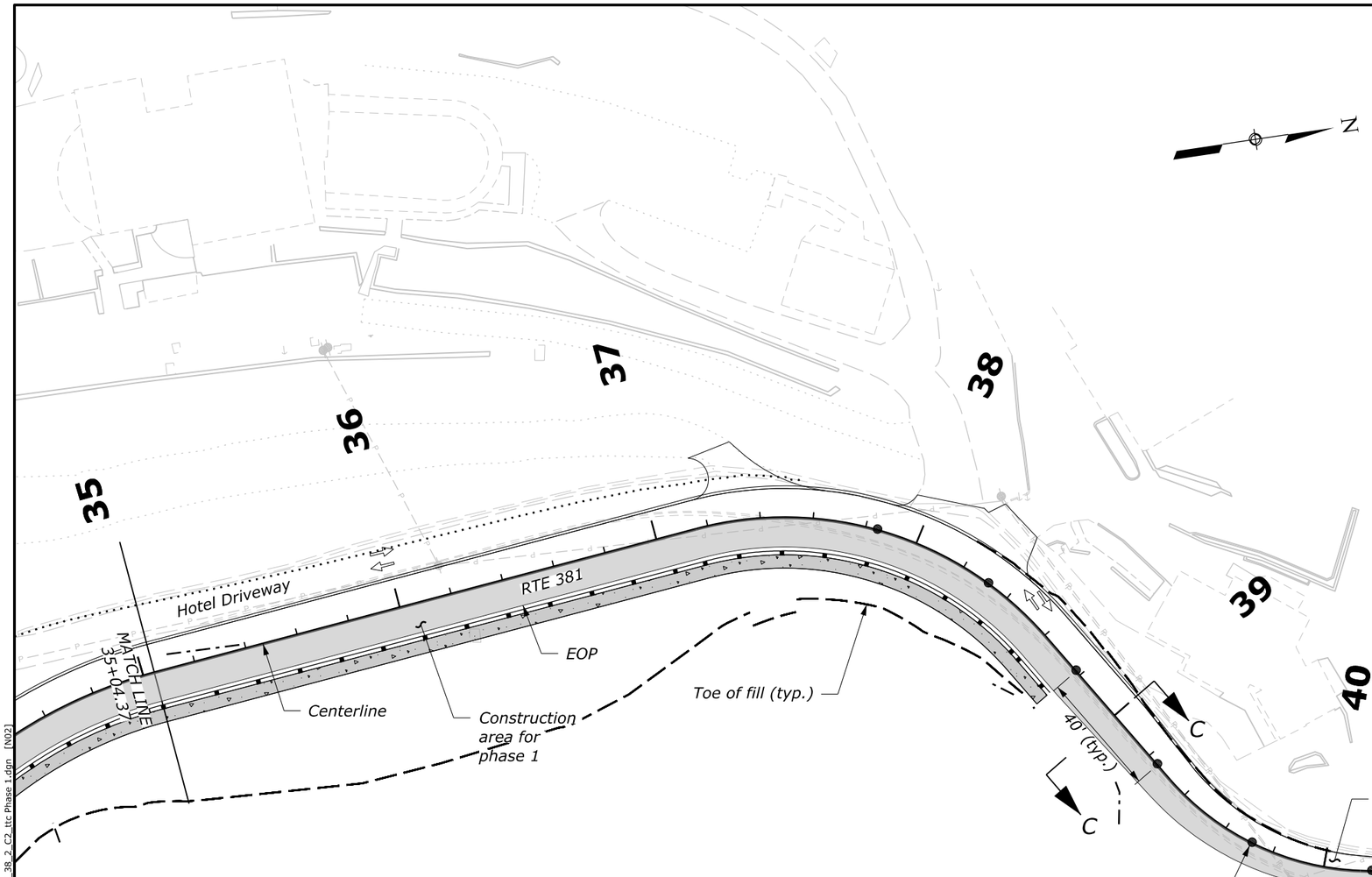
PHASE 1

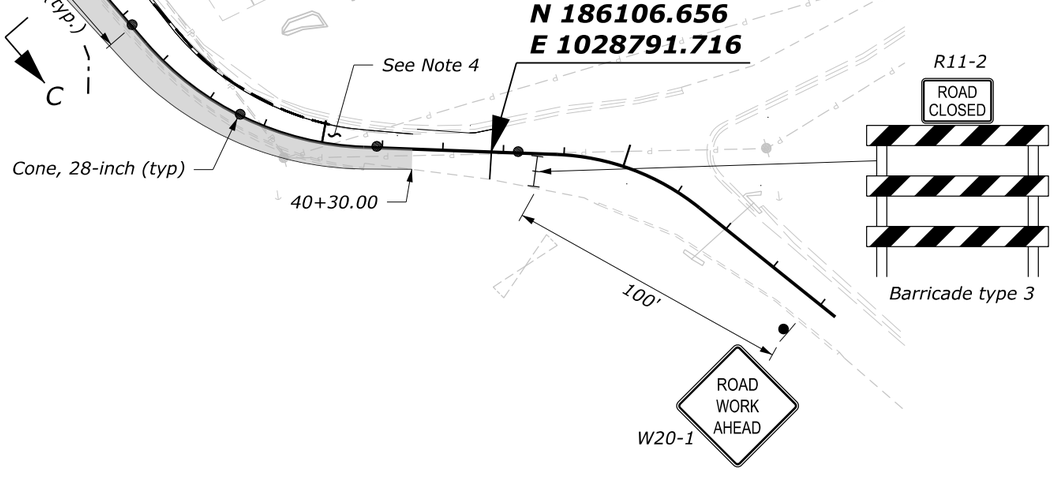
Sheet 1 of 2

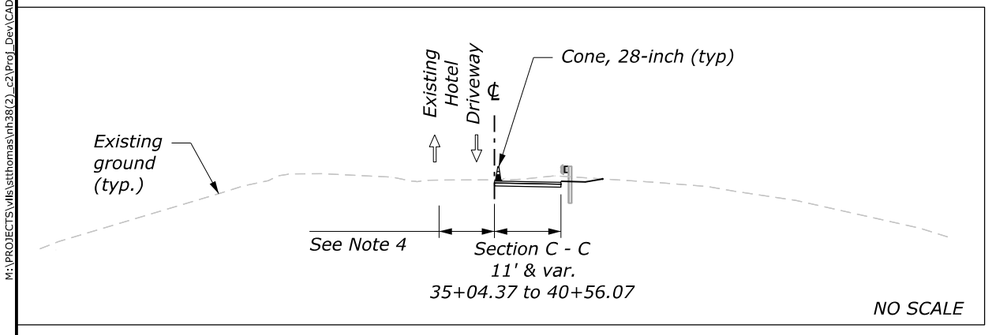
M:\PROJECTS\vi\s\thomas\vi38(2)_c2\Proj_Dev\CADD\N01-02_VI_38_2_C2_ttc Phase 1.dgn [N01]

12 May 2025 2:36 PM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	N02







NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to driveways at all times.

4. Provide a temporary access of at least 10 feet to Hotel Driveway at all times, as approved.

5. The Contractor can select a different temporary traffic control plan as approved by the CO and in accordance with Sections 156 and 635.

END WORK
RTE 381
40+56.15
N 186106.656
E 1028791.716

Construction area

NO.	DATE	BY	REVISIONS

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

0 25 50
SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TEMPORARY TRAFFIC CONTROL

PHASE 1

Sheet 2 of 2

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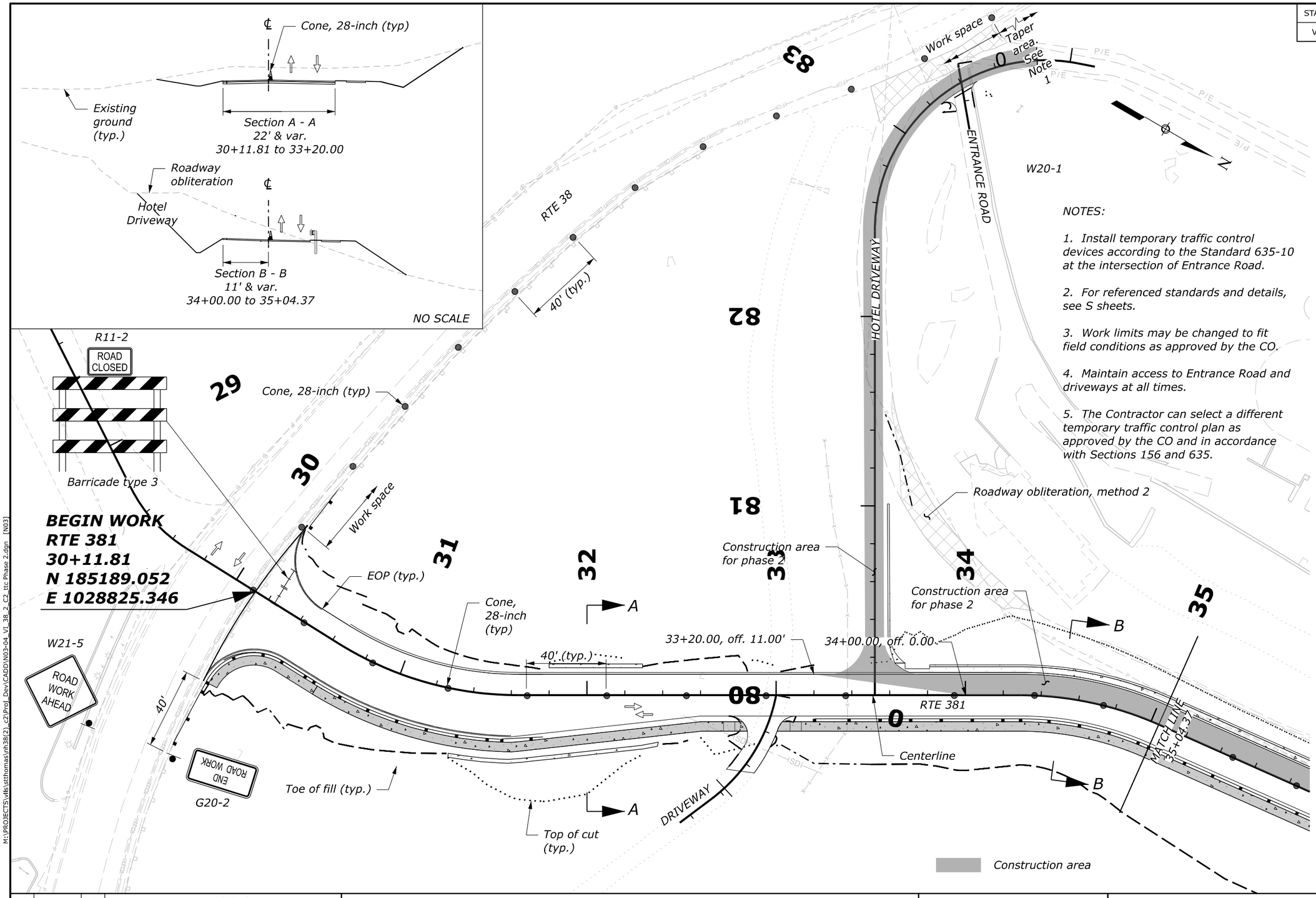
12 May 2025 2:42 PM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	N03



NOTES:

1. Install temporary traffic control devices according to the Standard 635-10 at the intersection of Entrance Road.

2. For referenced standards and details, see S sheets.

3. Work limits may be changed to fit field conditions as approved by the CO.

4. Maintain access to Entrance Road and driveways at all times.

5. The Contractor can select a different temporary traffic control plan as approved by the CO and in accordance with Sections 156 and 635.

NO.	DATE	BY	REVISIONS

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

0 25 50
SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TEMPORARY TRAFFIC CONTROL

PHASE 2

Sheet 1 of 2

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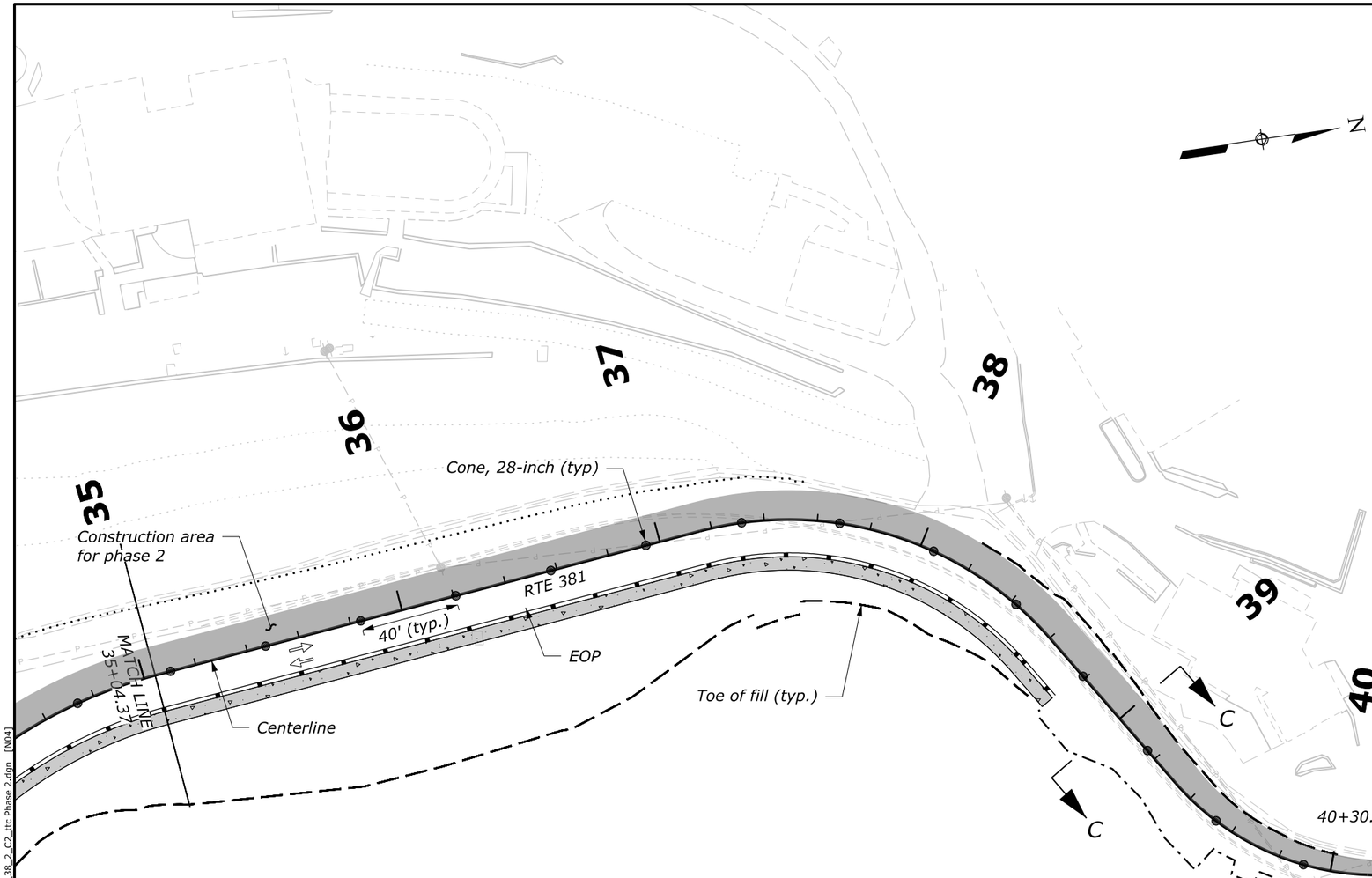
12 May 2025 2:50 PM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	N04



NOTES:

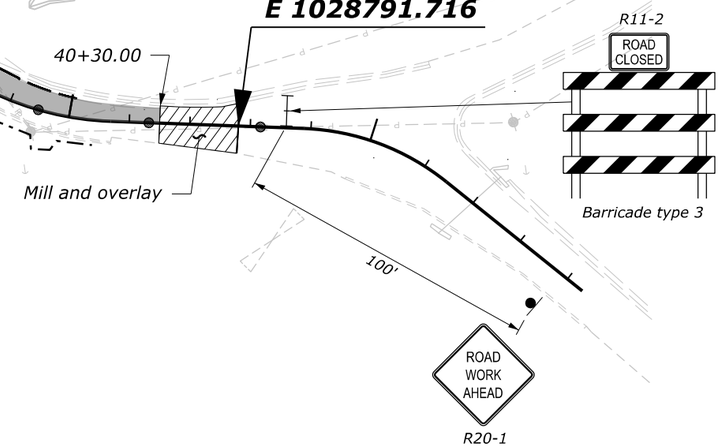
1. For referenced standards and details, see S sheets.

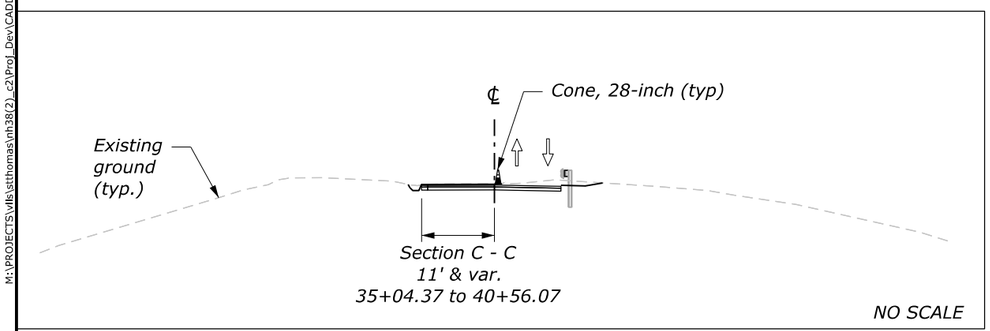
2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to driveways at all times.

4. The Contractor can select a different temporary traffic control plan as approved by the CO and in accordance with Sections 156 and 635.

END WORK
RTE 381
40+56.15
N 186106.656
E 1028791.716





Construction area

NO.	DATE	BY	REVISIONS

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

0 25 50
SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

TEMPORARY TRAFFIC CONTROL

PHASE 2

Sheet 2 of 2

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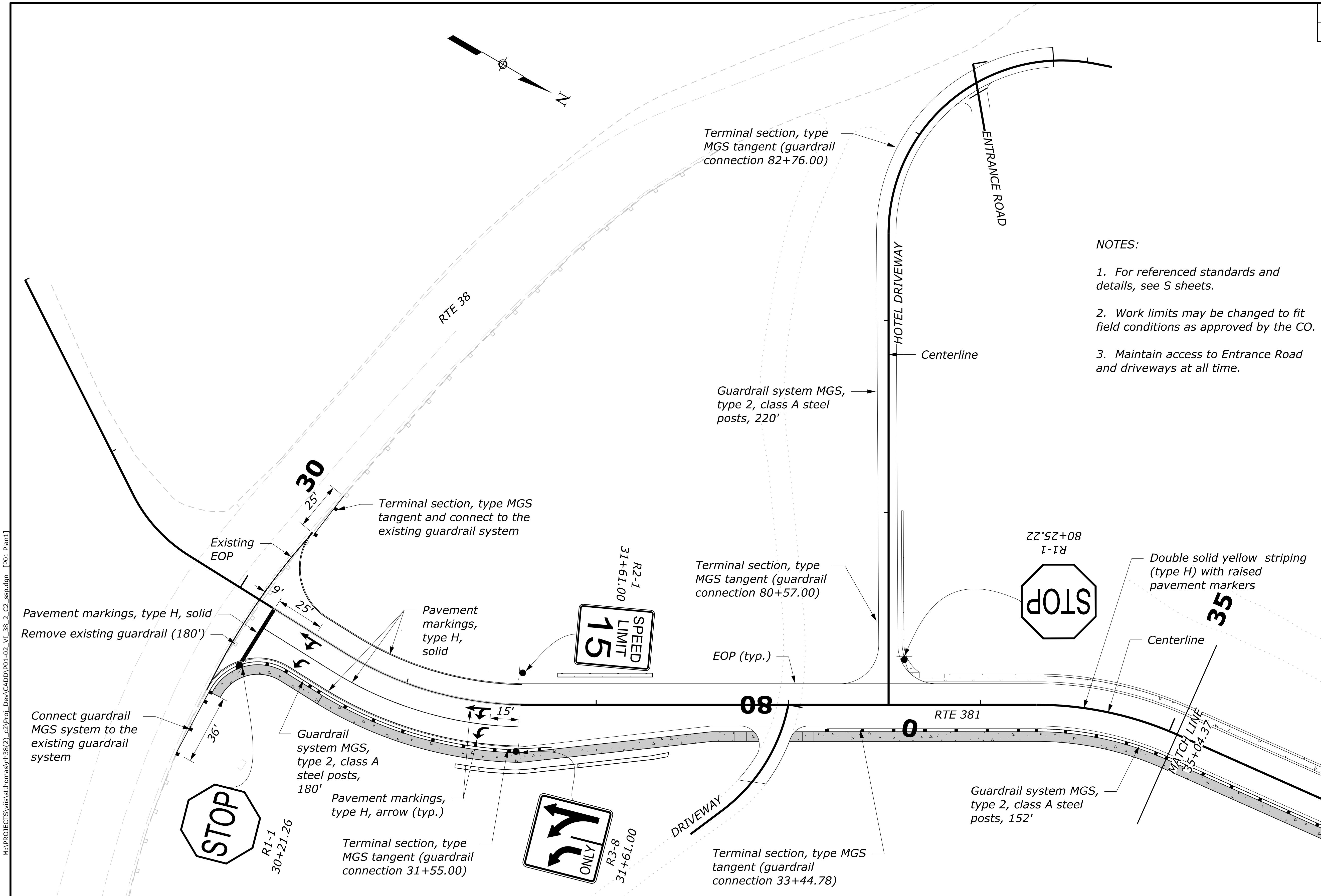
12 May 2025 3:03 PM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	P01



NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to Entrance Road and driveways at all time.

NO.	DATE	BY	REVISIONS

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

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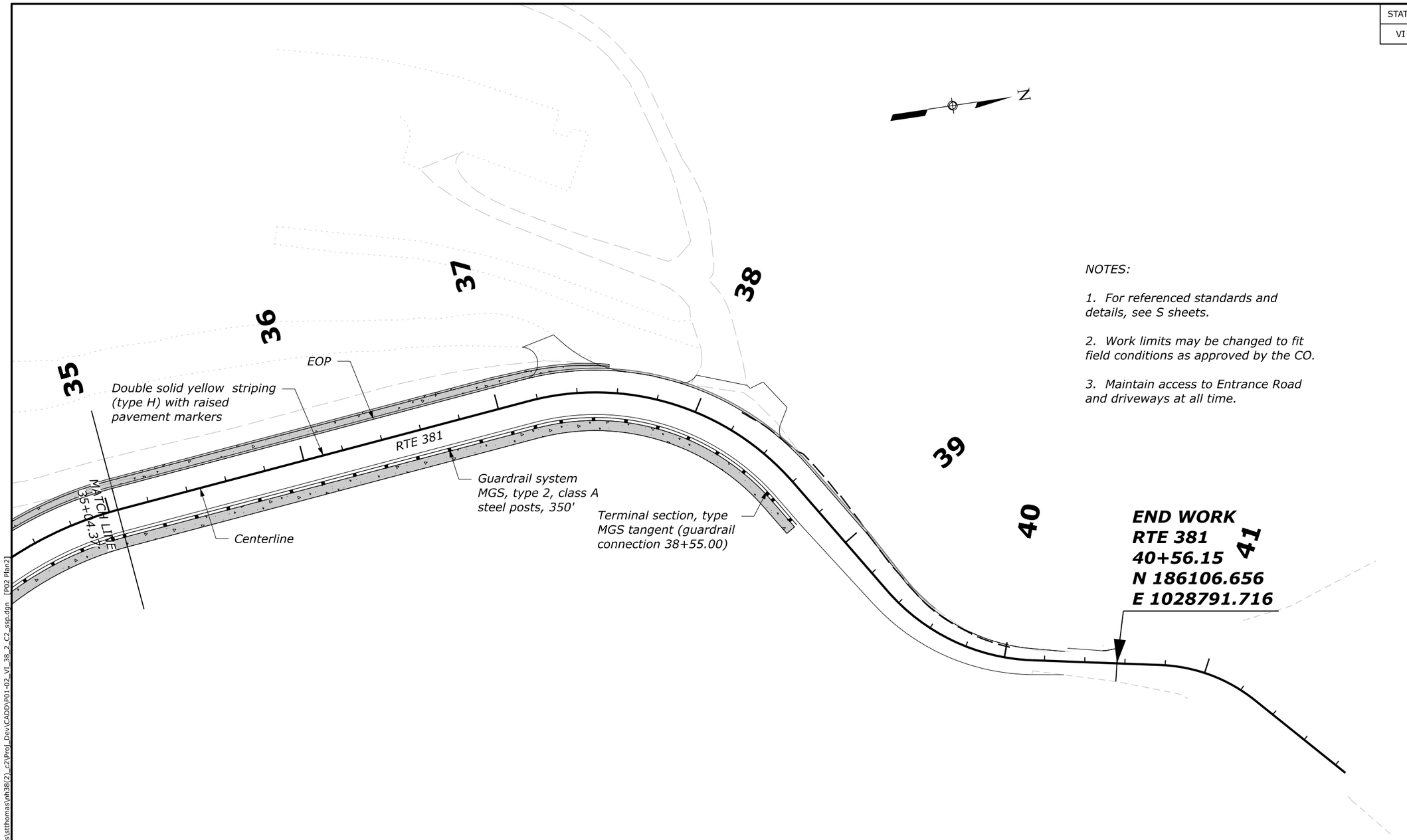
SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

GUARDRAILS, TRAFFIC CONTROL, PAVEMENT MARKINGS

Sheet 1 of 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	P02



NOTES:

1. For referenced standards and details, see S sheets.

2. Work limits may be changed to fit field conditions as approved by the CO.

3. Maintain access to Entrance Road and driveways at all time.

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13 May 2025 1:33 PM

NO.	DATE	BY	REVISIONS

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

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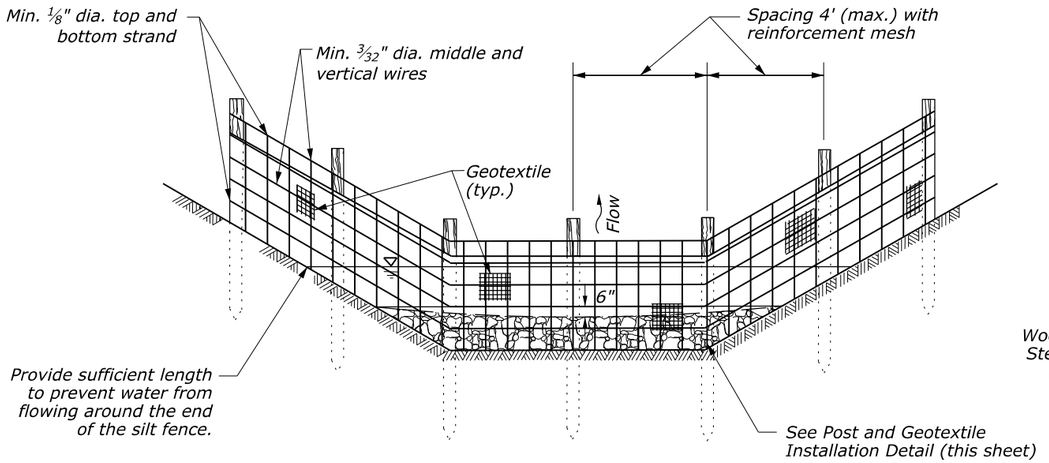
SCALE IN FEET

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

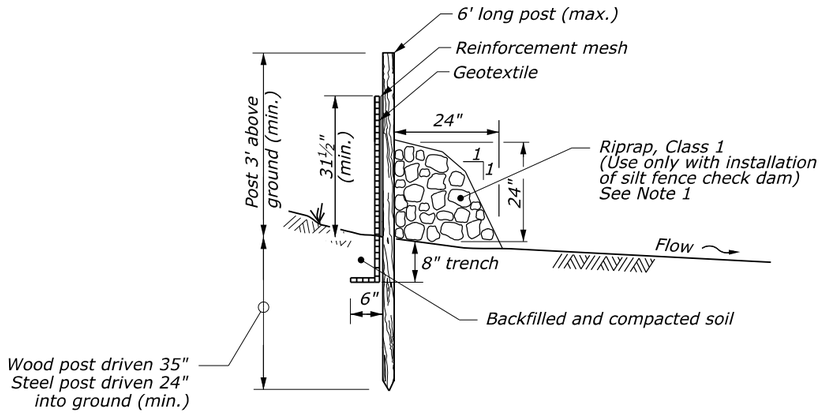
GUARDRAILS, TRAFFIC CONTROL, PAVEMENT MARKINGS

Sheet 2 of 2

PROJECT	SHEET NUMBER
VI 38(2) C2	S01



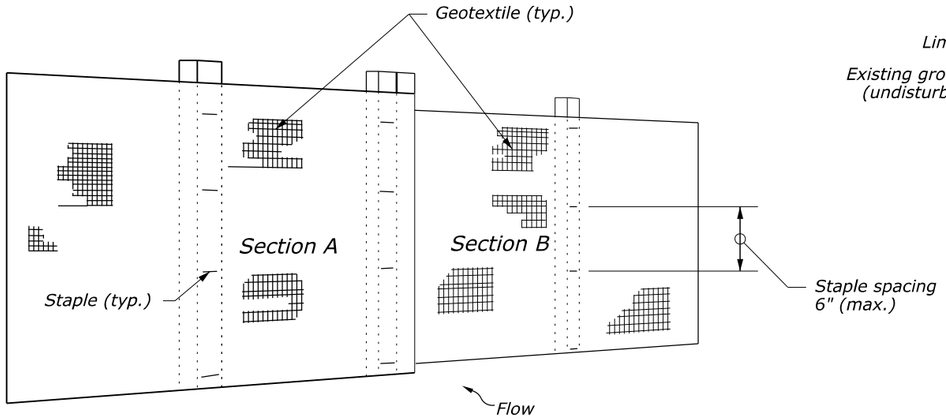
WIRE-BACKED SILT FENCE WITH CHECK DAM



POST AND GEOTEXTILE INSTALLATION

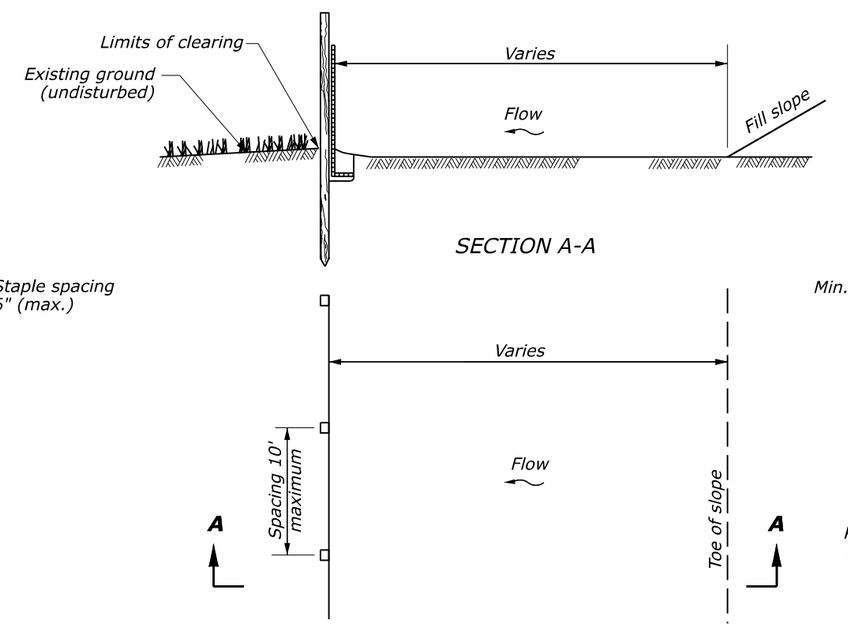
NOTES:

1. Install silt fence with Class 1 riprap only in low-flow drainage ditches where shown on the Erosion and Sediment Control Plan.
2. Install pre-assembled silt fence according to the manufacturer's recommendations.
3. Install silt fence along ground contours. Curve ends of silt fence upgrade to prevent water from running around the ends.
4. Attach geotextile and reinforcement mesh so they do not slide down posts. Provide detail for attaching to steel posts for approval.
5. Use reinforcement mesh that is a minimum of 32 inches in width and has a minimum of 6 line wires with 12-inch stay spacing.
6. Use geotextile that is a minimum of 45 inches in width and fasten adequately to the reinforcement mesh as directed.
7. Use 60-inch minimum height steel posts of the self-fastener angle steel type.
8. Use 70-inch minimum height by 3-inch diameter wood posts.
9. Extend reinforcement mesh and geotextile into trench.

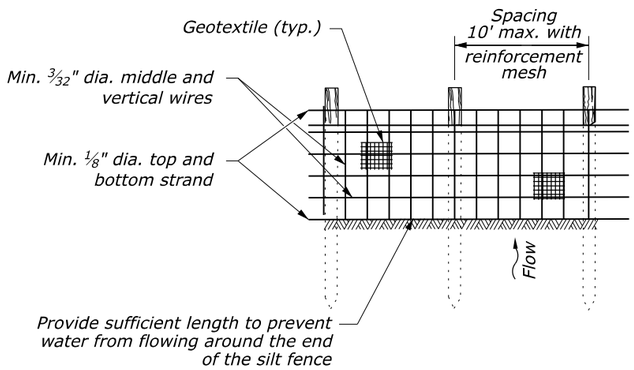


JOINING TWO ADJACENT SILT FENCE SECTIONS

(See Note 4)



WIRE-BACKED SILT FENCE INSTALLATION AT TOE OF FILL

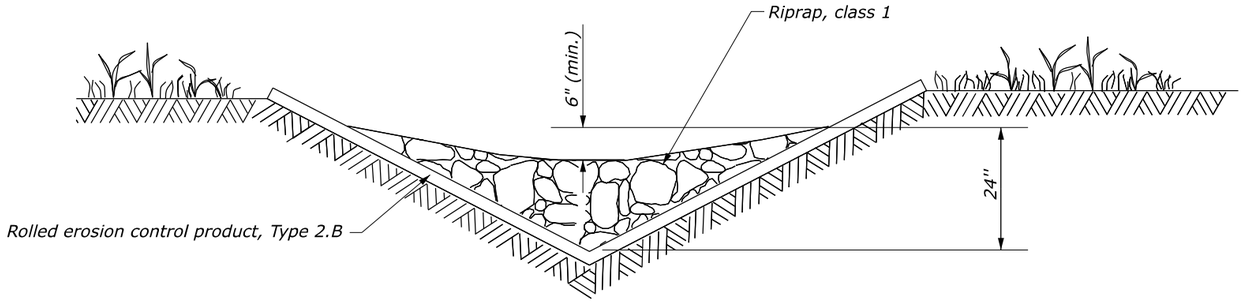


NO SCALE

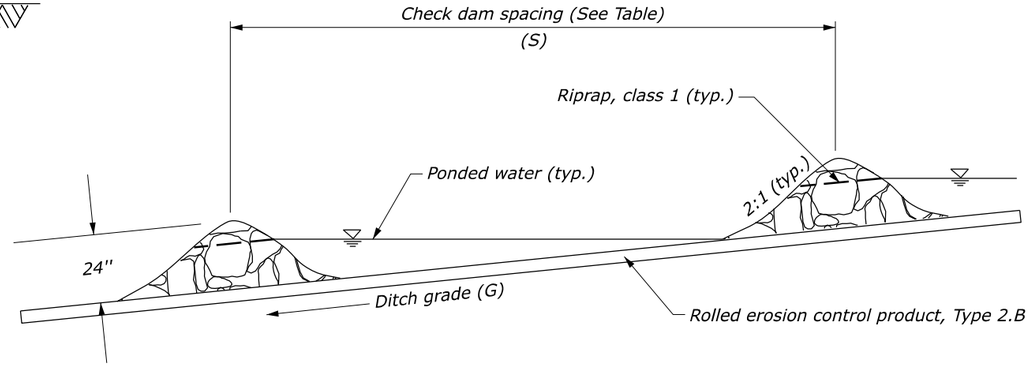
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E157-02
WIRE-BACKED SILT FENCE	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 05/2024

M:\PROJECTS\vifls\stthomas\vi38(2)_c2\Proj_Dev\CADD\Std-Det\S01 157-02 Wire-Backed Silt Fence.dgn [Sheet]
9 April 2025 8:22 AM

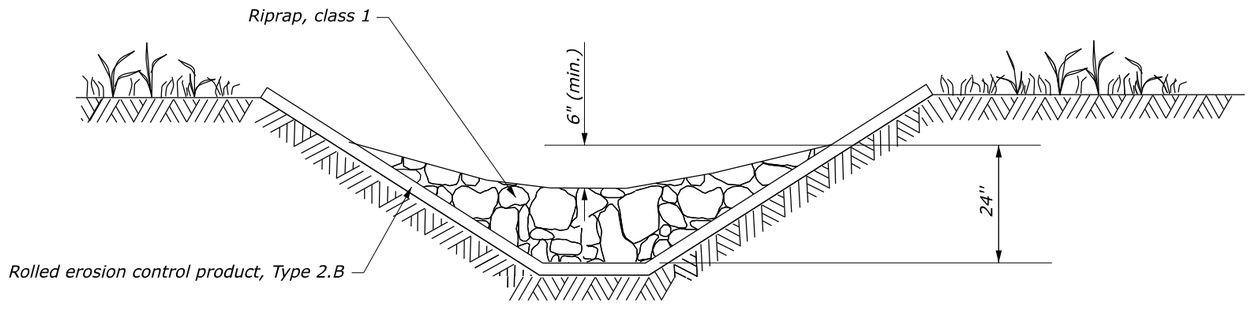
PROJECT	SHEET NUMBER
VI 38(2) C2	S02



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

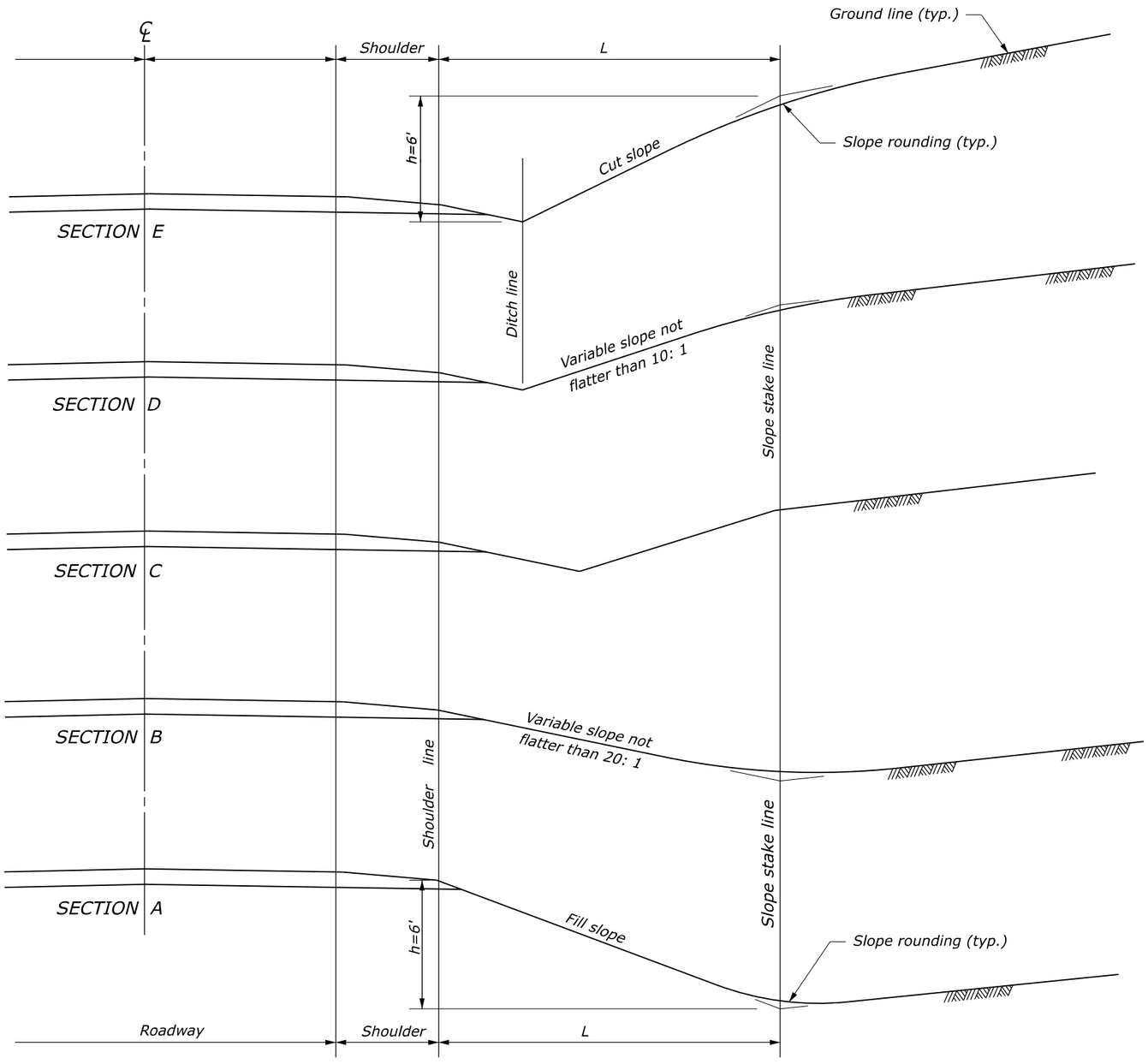
CHECK DAM WITH ROLLED EROSION CONTROL PRODUCT

EFLHD DETAIL
E157-06

SPECIFICATION
FP-24, FP-14

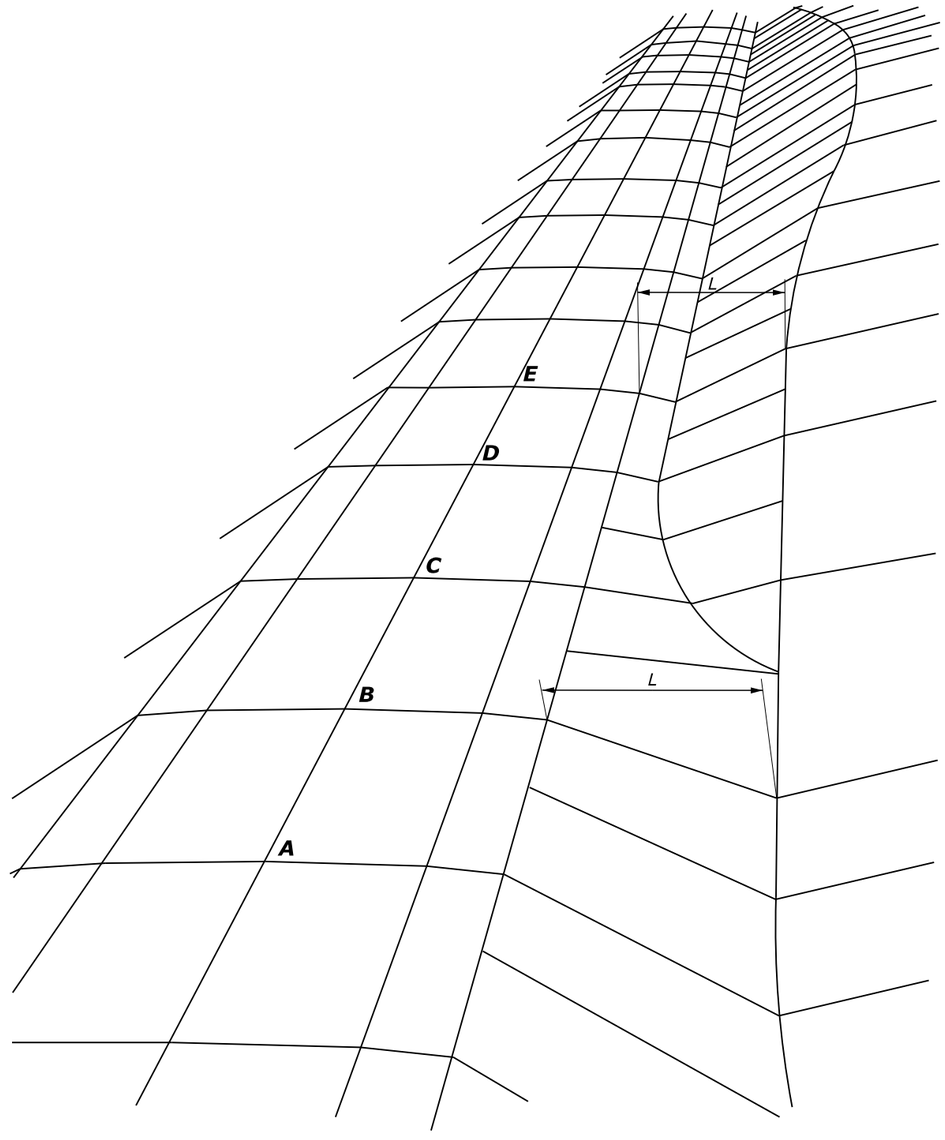
APPROVED FOR USE
05/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S03



NOTE:

Maintain distance L as the distance to slope stakes to establish the blend of cut and fill slopes into the original ground.



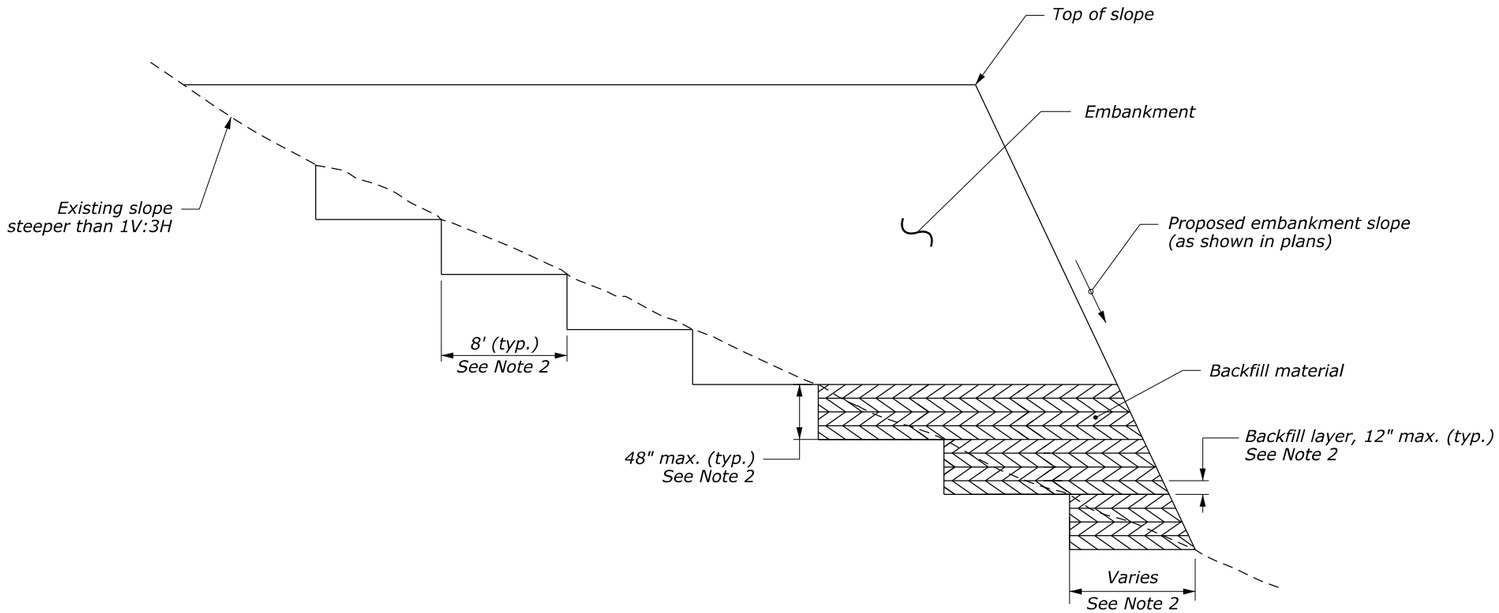
NO SCALE

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

CUT AND FILL SLOPE TRANSITIONS

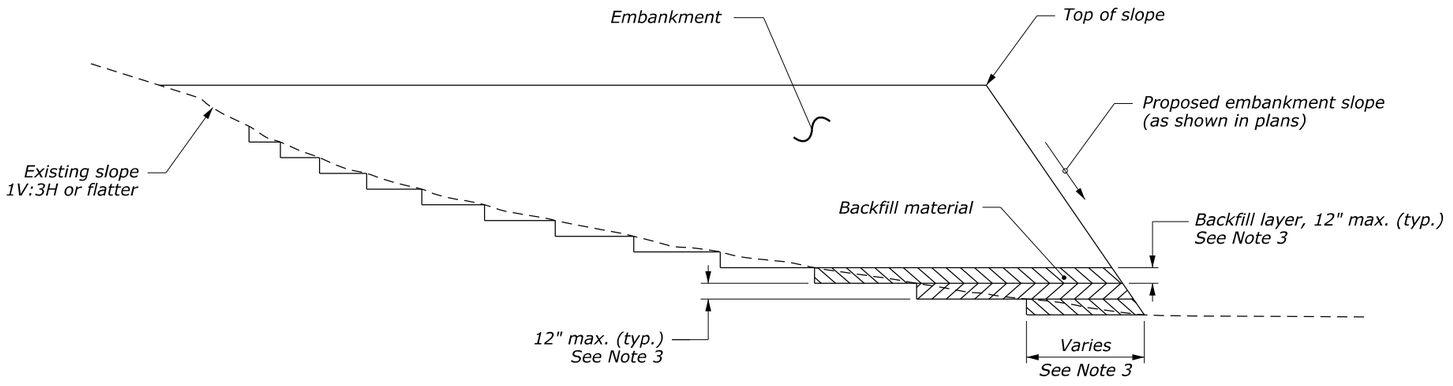
EFLHD DETAIL
E204-01
SPECIFICATION
FP-24, FP-14
APPROVED FOR USE
05/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S04



TYPICAL SECTION A

SLOPES STEEPER THAN 1V:3H



TYPICAL SECTION B

SLOPES 1V:3H OR FLATTER

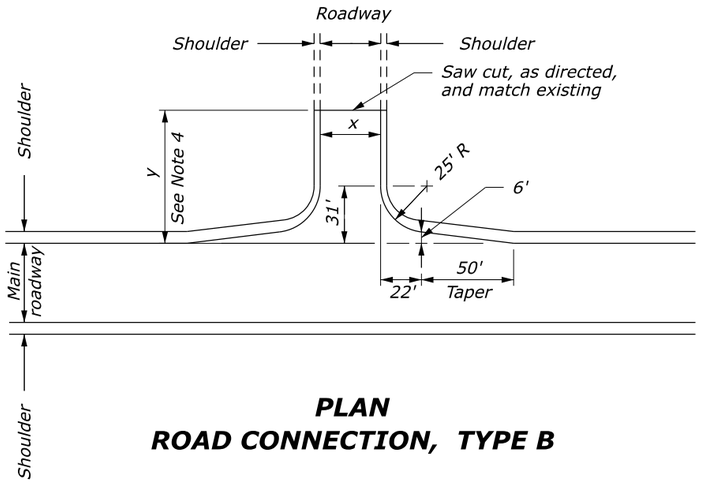
NO SCALE

NOTES:

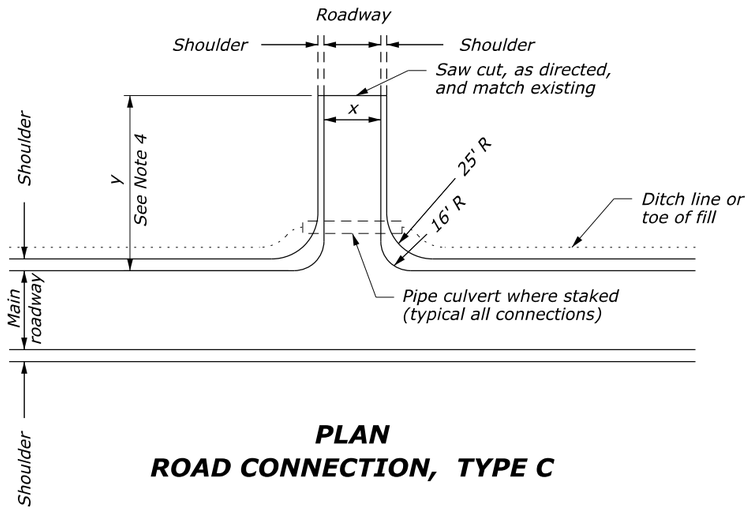
1. *Where the embankment foundation is on side-hill or another existing embankment, bench the foundation while the embankment is being constructed.*
2. *For slopes steeper than 1V:3H, refer to Typical Section A. Cut 8-foot wide horizontal benches in the existing slope. Bench the slope as the embankment 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.*

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E204-02
BENCHING FOR EMBANKMENT	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 05/2024

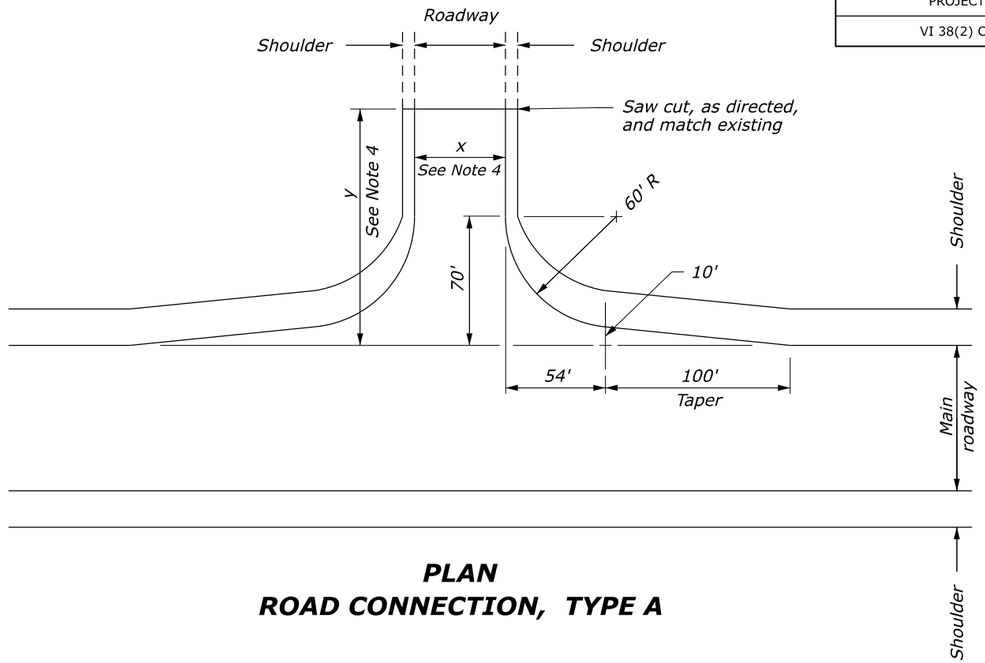
PROJECT	SHEET NUMBER
VI 38(2) C2	S05



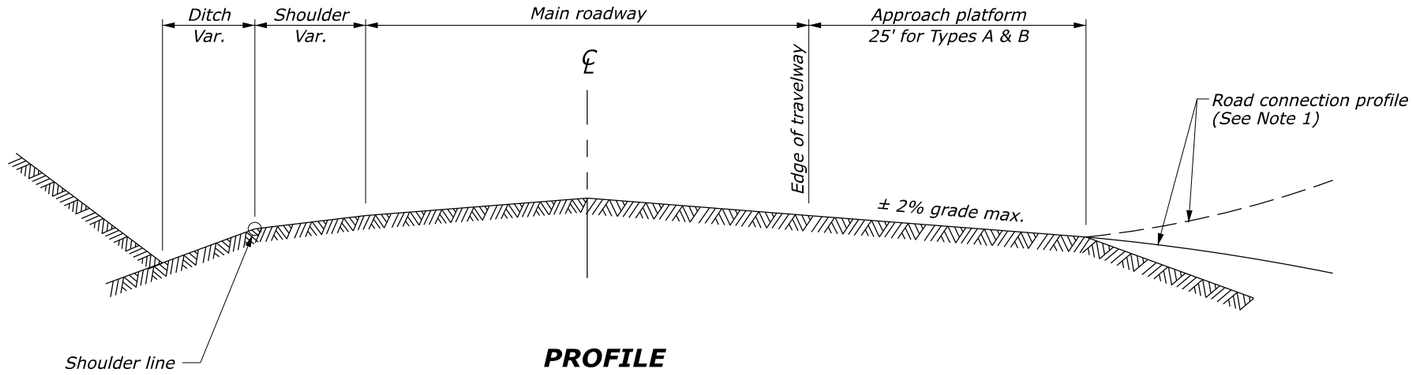
PLAN
ROAD CONNECTION, TYPE B



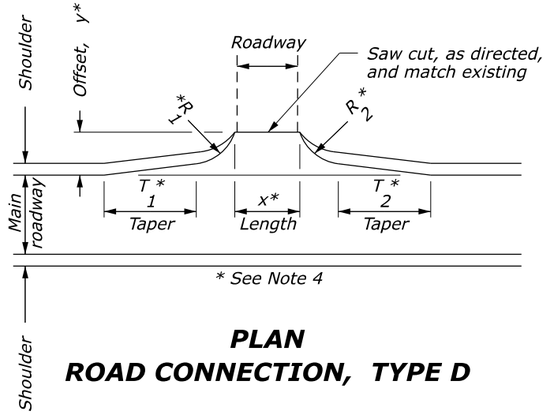
PLAN
ROAD CONNECTION, TYPE C



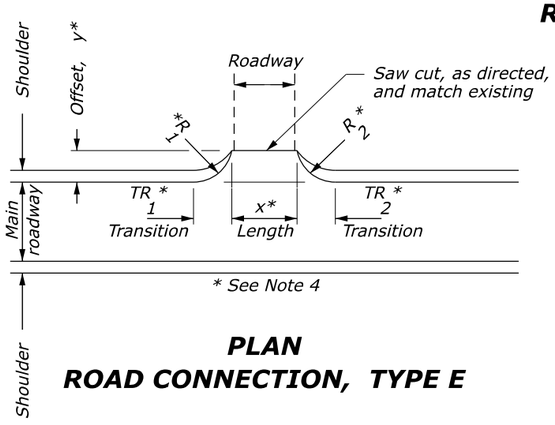
PLAN
ROAD CONNECTION, TYPE A



PROFILE
RIGHT ANGLE ROAD CONNECTION



PLAN
ROAD CONNECTION, TYPE D



PLAN
ROAD CONNECTION, TYPE E

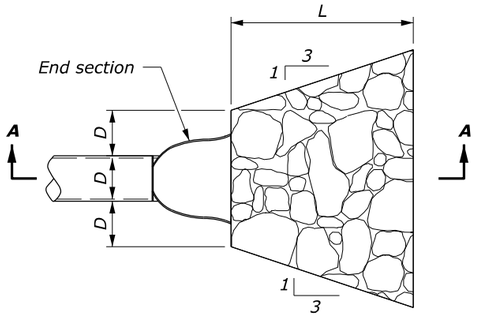
NOTES:

1. Match existing road connection profile, as directed.
2. For roadway surface and shoulder widths, see Typical Setions.
3. If drainage is necessary, move the ditch line back (as shown for Type C connection), to provide at least 6 inches of cover over culvert.
4. See Road Connection Schedule for dimensions.

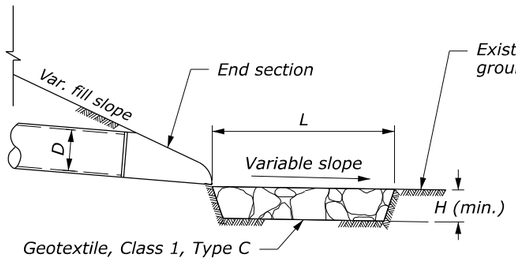
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E204-05
ROADWAY CONNECTIONS	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 05/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S06

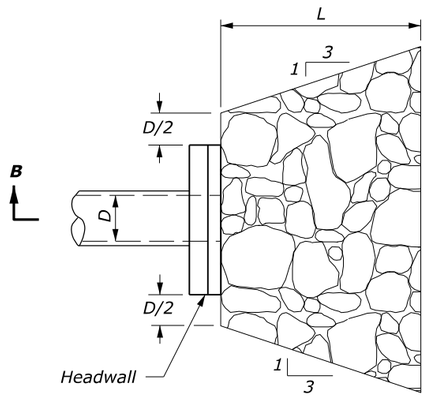


PLAN

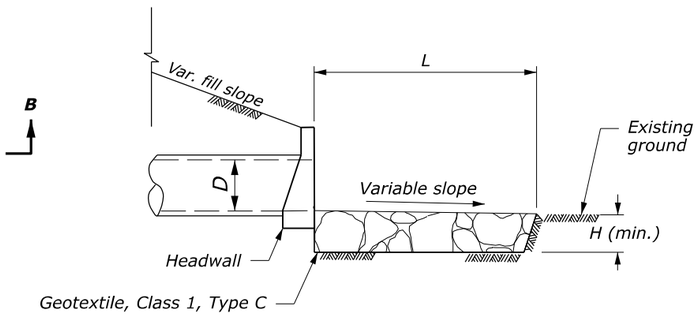


SECTION A-A

CULVERT WITH END SECTION



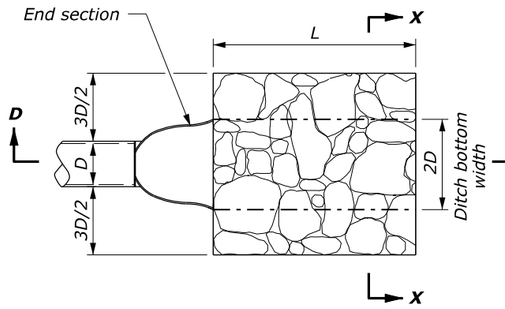
PLAN



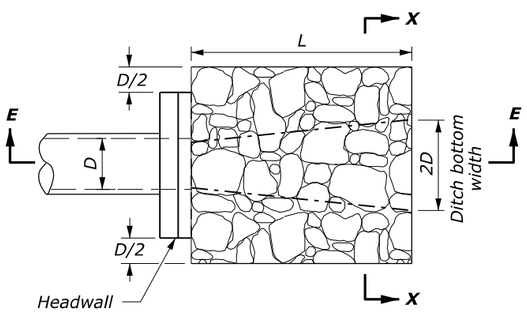
SECTION B-B

CULVERT WITH HEADWALL

PROTECTIVE APRON AT CULVERT OUTLET WITHOUT DITCH



PLAN



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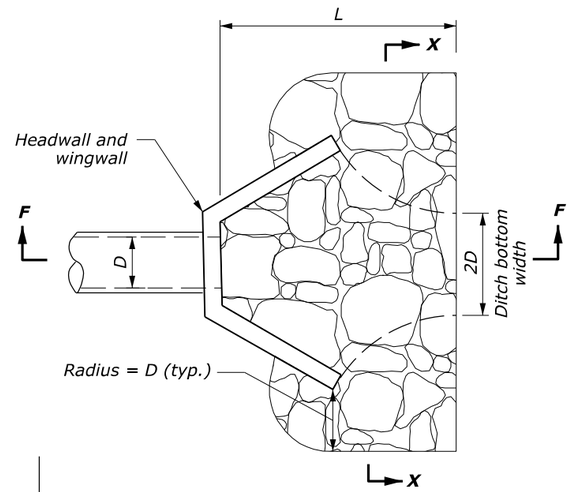

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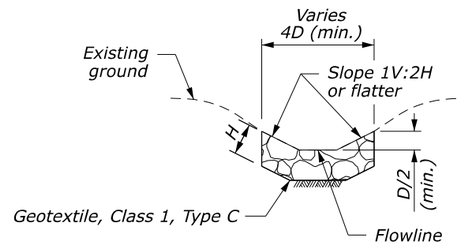
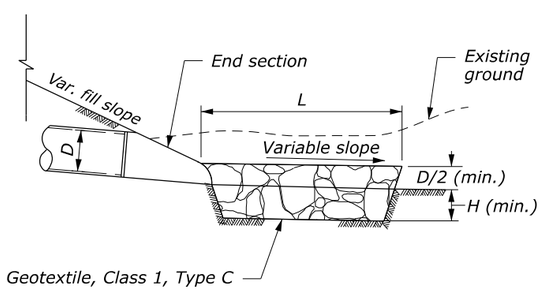
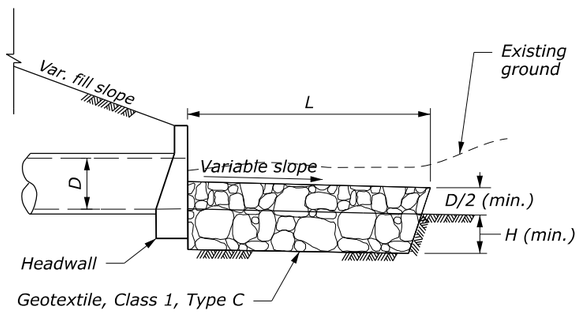


SECTION X-X



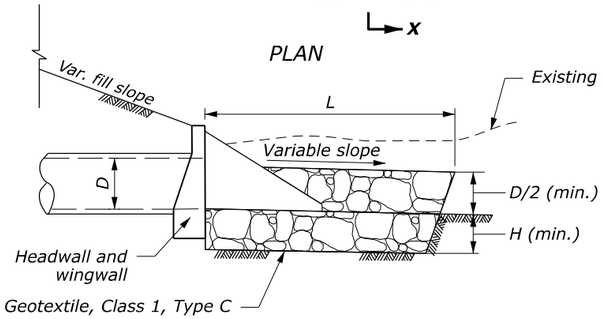
SECTION D-D

CULVERT WITH END SECTION



SECTION E-E

CULVERT WITH HEADWALL



SECTION F-F

CULVERT WITH HEADWALL AND WINGWALL

PROTECTIVE APRON AT CULVERT OUTLET WITH DITCH

NO SCALE

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. See Sheet 2 of 2 for dimensions and estimated quantities.

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

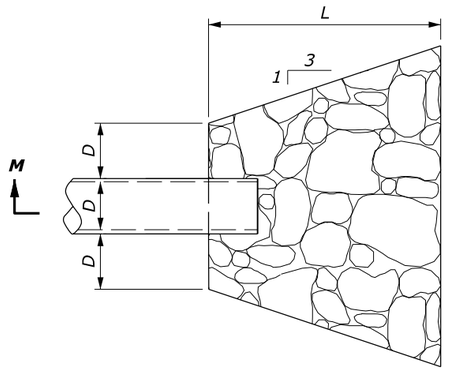
PLACED RIPRAP AT CULVERT OUTLETS
Sheet 1 of 2

EFLHD DETAIL
E251-01

SPECIFICATION
FP-24, FP-14

APPROVED FOR USE
05/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S07



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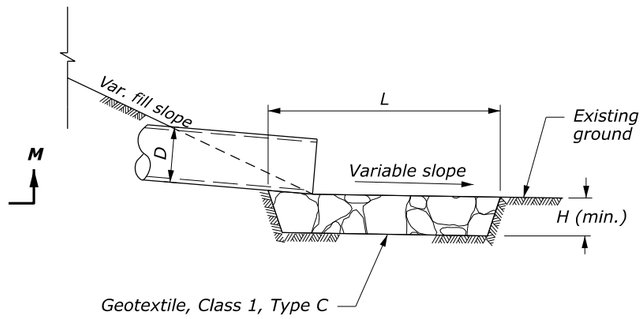
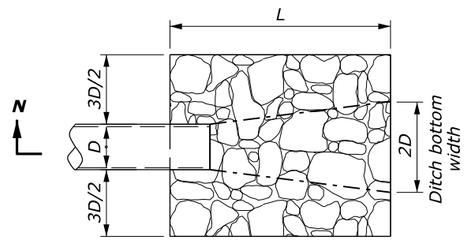


SECTION M-M

CULVERT OUTLET WITHOUT DITCH



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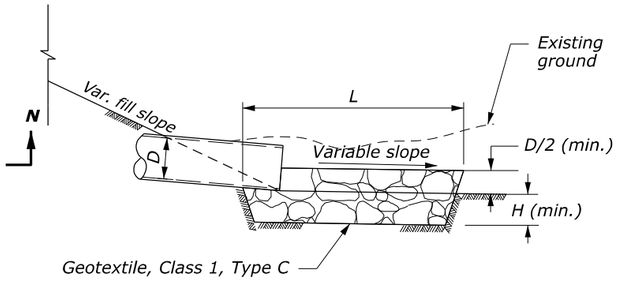


SECTION N-N

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.*

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, FP-14

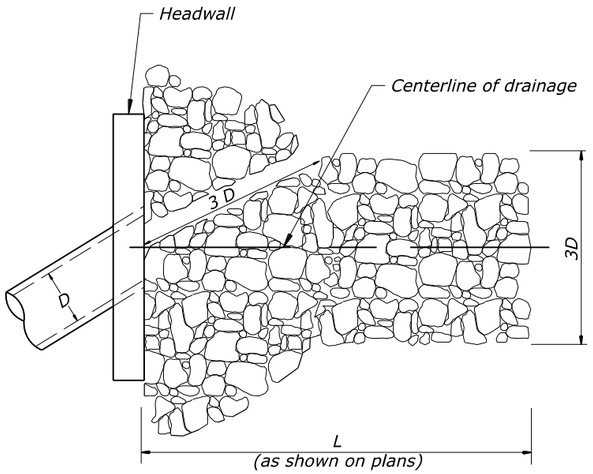
APPROVED FOR USE
05/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S08

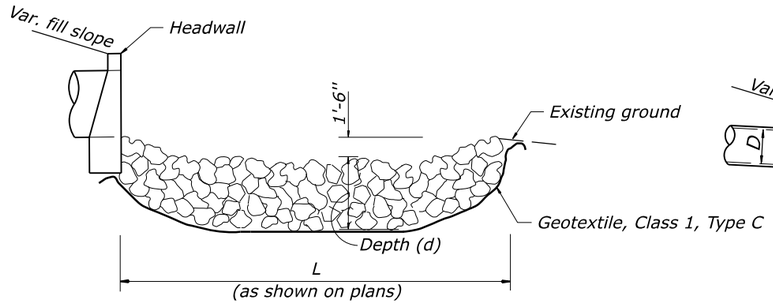
NOTE:

For arch or elliptical pipes, use equivalent diameter for (D) dimension.

RIPRAP DEPTH TABLE	
Riprap Class	*Depth (d)*
2	*18"*
3	*24"*
4	*30"*

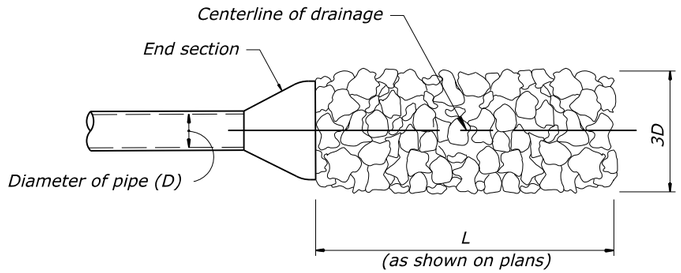


PLAN

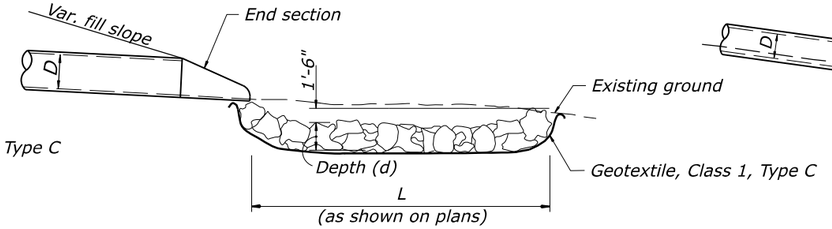


ELEVATION

CULVERT WITH HEADWALL

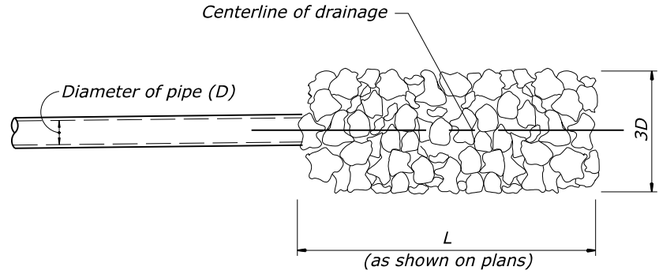


PLAN

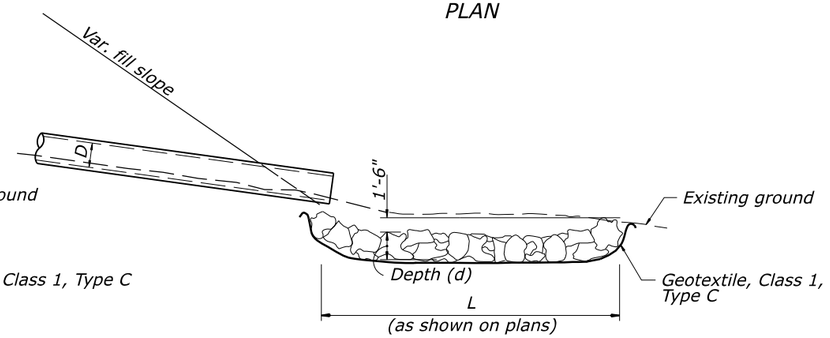


ELEVATION

CULVERT WITH END SECTION



PLAN



ELEVATION

CULVERT WITH NO END TREATMENT

NO SCALE

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

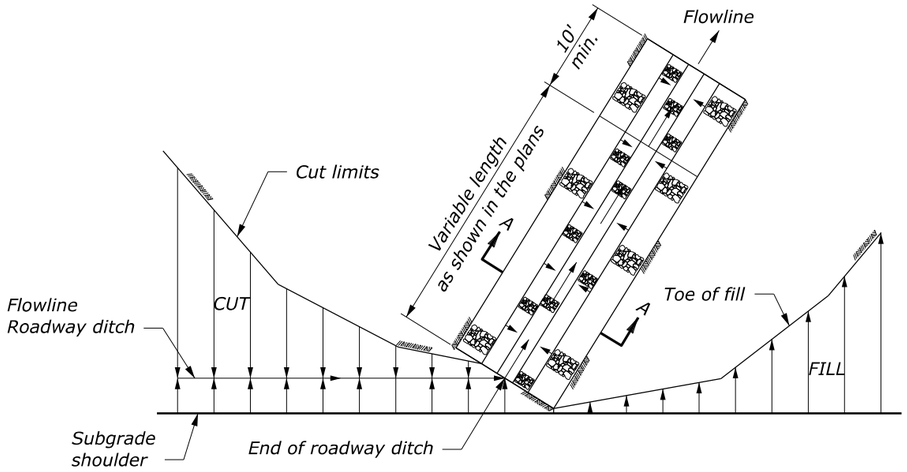
LOOSE RIPRAP CHANNEL AT CULVERT

EFLHD DETAIL
E251-02

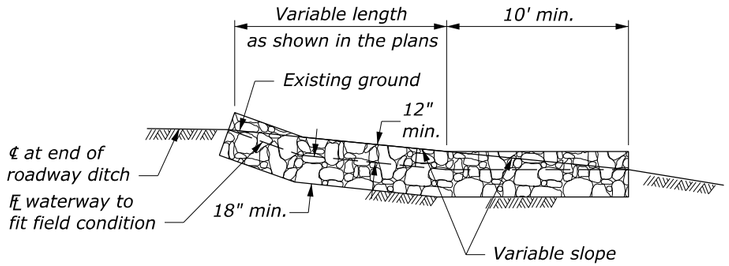
SPECIFICATION
FP-24, FP-14

APPROVED FOR USE
05/2024

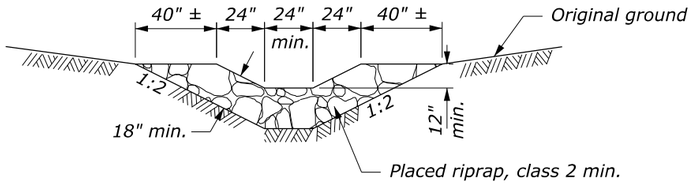
PROJECT	SHEET NUMBER
VI 38(2) C2	S09



PLAN VIEW



ELEVATION

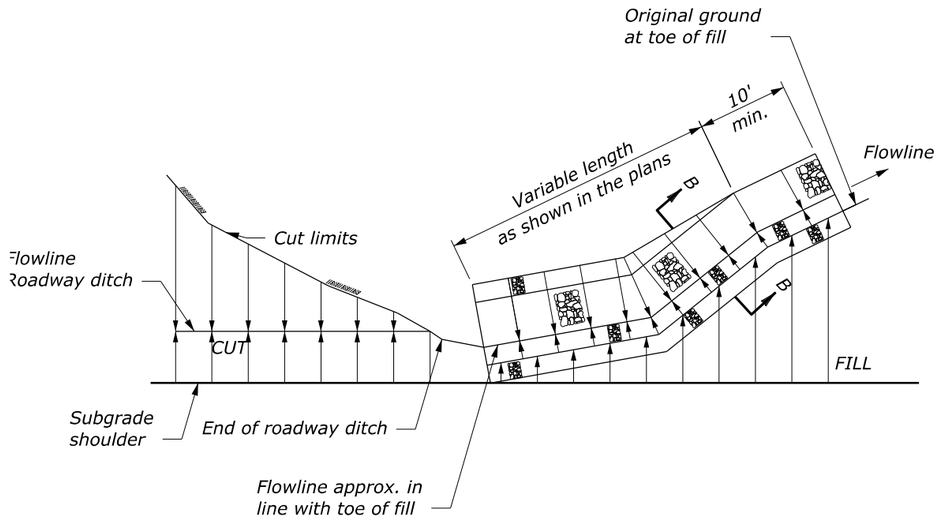


SECTION A-A

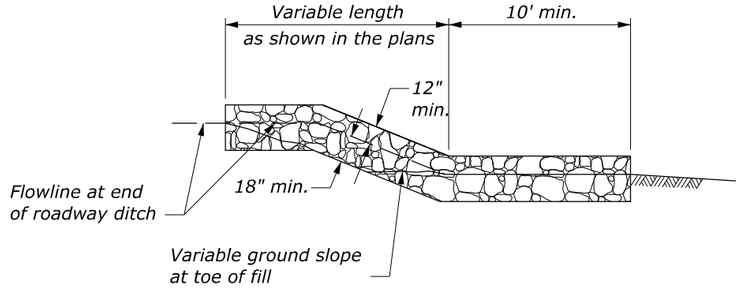
NOTE:

1. Excavation for placement of riprap will not be measured for payment.
2. Furnish geotextile filter conforming to Subsection 714.01(c).

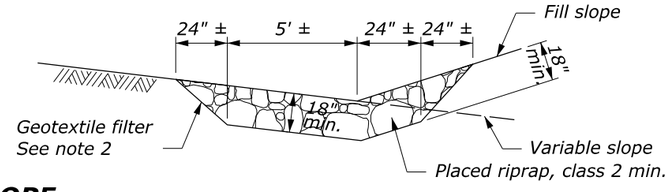
TYPE 1 - NOT CONTIGUOUS TO FILL SLOPE (Qmax = 5 cfs)



PLAN VIEW



ELEVATION



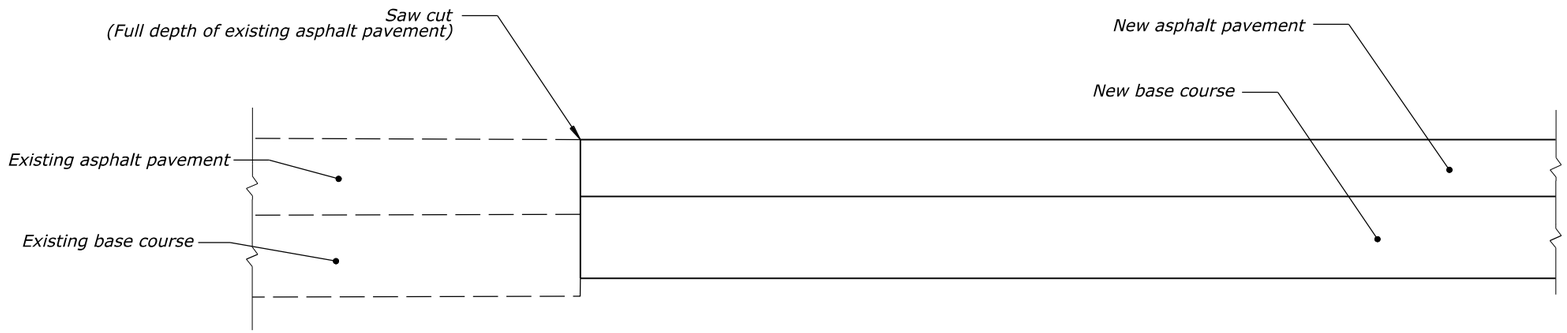
SECTION B-B

NO SCALE

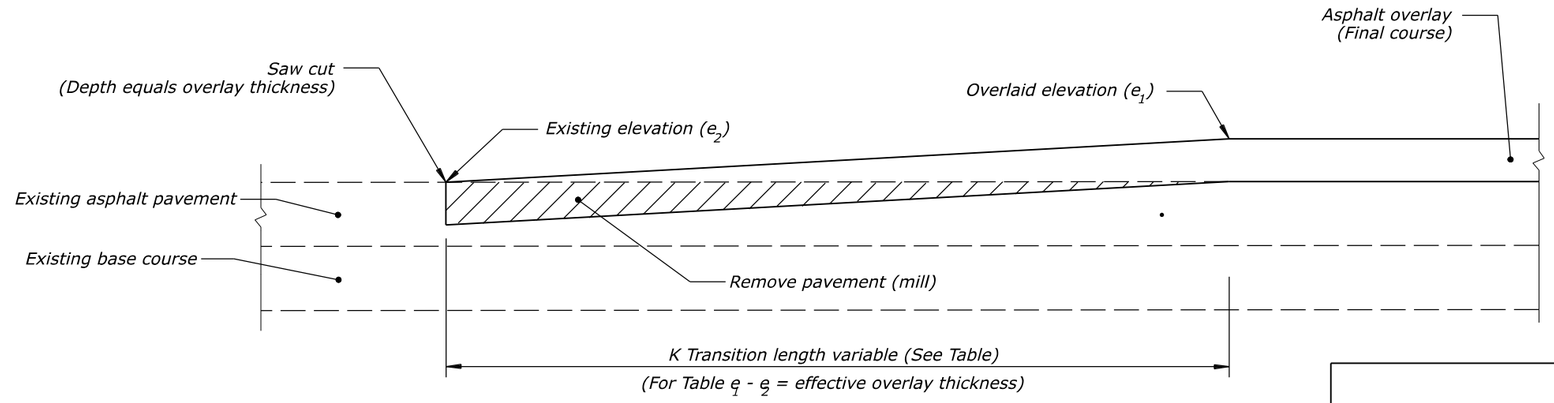
TYPE 2 - CONTIGUOUS TO FILL SLOPE (Qmax = 5 cfs)

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	CFLHD DETAIL C251-51
PLACED RIPRAP BETWEEN CUT AND FILL	SPECIFICATION FP-24
	APPROVED FOR USE 06/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S10



NEW PAVEMENT



OVERLAY

NOTE:

Provide a transition length in feet that is not less than the value obtained by multiplying the effective overlay thickness in inches (difference between the existing and overlaid elevations) by the K value from the Table for the posted speed of the roadway.

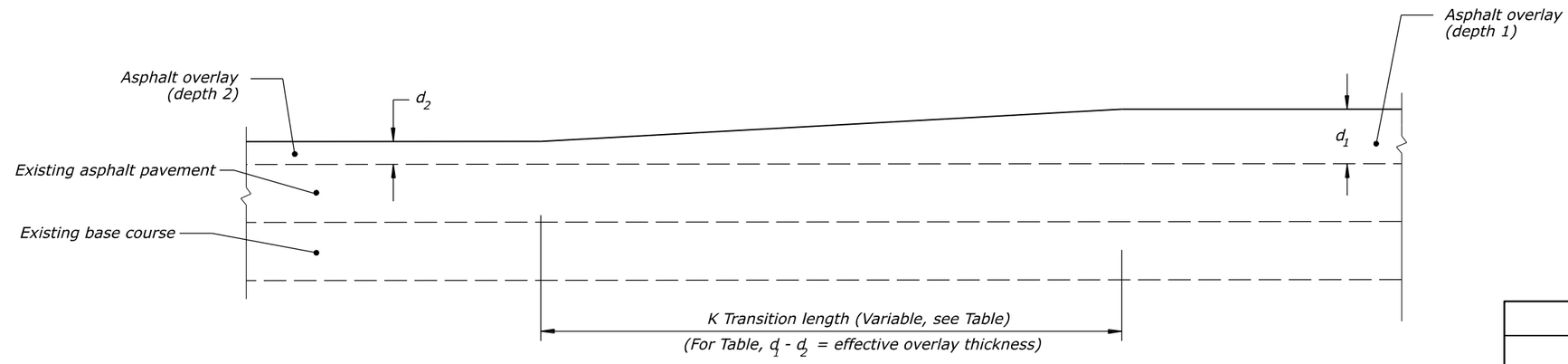
Use $K*[e_1 - e_2] = T$, or $K*[d_1 - d_2] = T$ (whichever applies), to obtain the transition length. (Minimum transition length=30 feet)

Example :
If the posted speed is 55 MPH
Effective overlay thickness = 2 inches
Then the minimum transition length =
2 inches x 42.5 ft./in. = 85 feet.

K VALUE TABLE (ft/in)

POSTED SPEED (MPH) *	30	35	40	45	50	55	60	65	70	75
K	30	32.5	35	37.5	40	42.5	45	47.5	50	52.5

** Use a K Value of 30 for speeds less than 30 MPH.*



OVERLAY - DEPTH TRANSITIONS

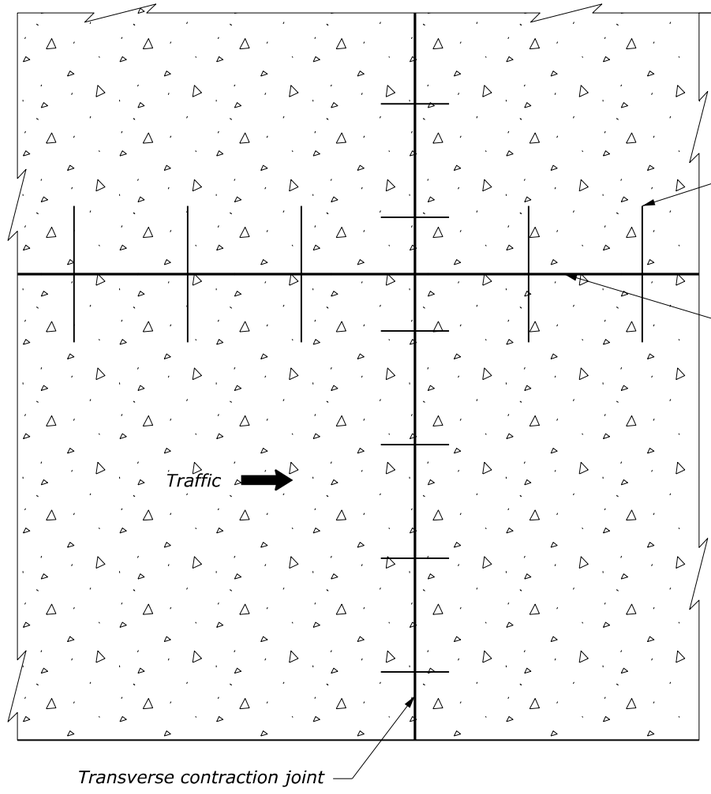
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E401-01
PAVEMENT TRANSITIONS	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 05/2024

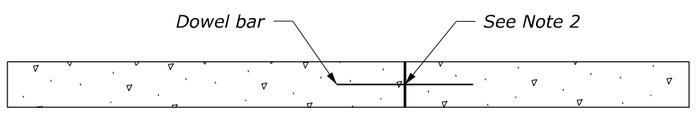
PROJECT	SHEET NUMBER
VI 38(2) C2	S11

NOTE:

1. *Provide the same type of dowel assemblies and tie bars for joints in plain minor concrete pavement as shown for joints in reinforced pavement.*
2. *See Standard 501-2 for joint and joint sealing details.*
3. *Lap longitudinal and transverse reinforcement not less than 15 inches.*

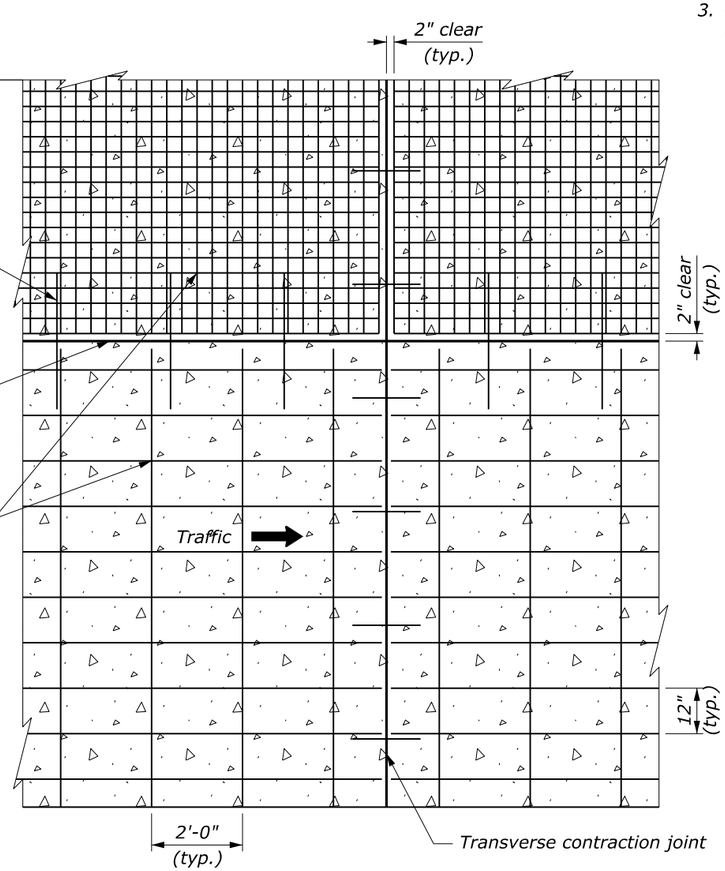


PLAN

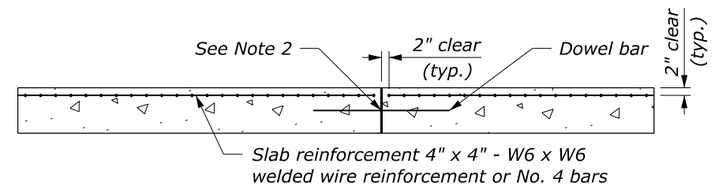


PROFILE

PLAIN MINOR CONCRETE PAVEMENT



PLAN



PROFILE

REINFORCED MINOR CONCRETE PAVEMENT

PAVEMENT THICKNESS (in)	*TRANSVERSE JOINT SPACING (ft)*
T < 6	*10*
6 ≤ T <12	*15*

NO SCALE

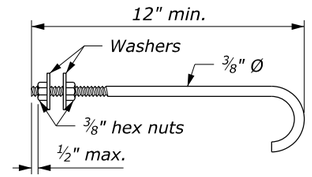
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 501-1
MINOR CONCRETE PAVEMENT	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 1/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S12

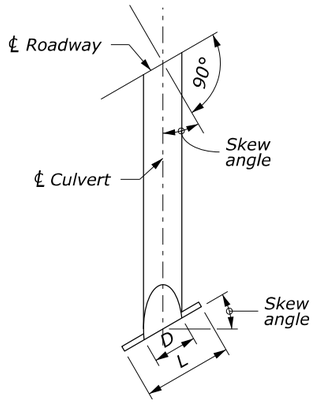
HEADWALL FOR DOUBLE PIPE CULVERT

DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES

D INCH	H FEET	SQUARE HEADWALL					15° SKEW					30° SKEW					45° SKEW				
		A FEET	B FEET	L FEET	CONC. CUYD	STEEL LB	A FEET	B FEET	L FEET	CONC. CUYD	STEEL LB	A FEET	B FEET	L FEET	CONC. CUYD	STEEL LB	A FEET	B FEET	L FEET	CONC. CUYD	STEEL LB
48	5.00	4.00	6.00	14.00	2.13	180	4.25	6.25	14.75	2.25	191	4.50	7.00	16.00	2.43	203	5.75	8.50	20.00	3.05	257
54	5.25	4.75	6.75	16.25	2.57	210	4.75	7.00	16.50	2.60	217	5.25	7.75	18.25	2.87	239	6.50	9.50	22.50	3.54	295
60	5.50	5.25	7.50	18.00	2.94	236	5.50	7.75	18.75	3.07	248	6.00	8.75	20.75	3.39	279	7.50	10.50	25.50	4.17	336
66	5.75	6.00	8.25	20.25	3.43	289	6.00	8.50	20.50	3.45	290	6.75	9.50	23.00	3.88	327	8.25	11.75	28.25	4.77	407
72	6.00	6.50	9.00	22.00	3.84	318	6.75	9.25	22.75	3.97	331	7.50	10.50	25.50	4.46	368	9.25	12.75	31.25	5.46	457
78	6.25	7.25	9.75	24.25	4.38	361	7.50	10.00	25.00	4.51	374	8.25	11.25	27.75	5.00	410	10.00	13.75	33.75	6.07	498
84	6.50	7.75	10.50	26.00	4.83	410	8.00	10.75	26.75	4.96	424	9.00	12.00	30.00	5.58	476	11.00	14.75	36.75	6.83	586
90	6.75	8.50	11.25	28.25	5.43	458	8.75	11.75	29.25	5.62	475	9.75	13.00	32.50	6.24	526	11.75	16.00	39.50	7.56	638
96	7.00	9.00	12.00	30.00	5.92	491	9.25	12.50	31.00	6.11	509	10.50	13.75	34.75	6.86	575	12.75	17.00	42.50	8.39	699
102	7.25	9.75	12.50	32.00	6.49	553	10.00	13.00	33.00	6.69	571	11.00	14.50	36.50	7.37	637	13.50	17.75	44.75	9.04	783
108	7.50	10.25	13.00	33.50	6.95	591	10.50	13.50	34.50	7.14	604	11.75	15.00	38.50	7.97	676	14.50	18.50	47.50	9.86	842
114	7.75	11.00	13.50	35.50	7.56	632	11.25	14.00	36.50	7.76	654	12.50	15.50	40.50	8.59	717	15.50	19.00	50.00	10.64	893
120	8.00	11.50	14.00	37.00	8.05	666	12.00	14.50	38.50	8.40	695	13.25	16.25	42.75	9.31	771	16.25	19.75	52.25	11.37	949
126	8.25	12.25	14.50	39.00	8.71	748	12.50	15.00	40.00	8.90	760	14.00	16.75	44.75	9.97	858	17.25	20.50	55.00	12.27	1053
132	8.50	12.75	15.00	40.50	9.23	775	13.25	15.50	42.00	9.58	805	14.75	17.25	46.75	10.65	902	18.00	21.25	57.25	13.05	1105
138	8.75	13.50	15.50	42.50	9.93	831	13.75	16.00	43.50	10.11	842	15.50	18.00	49.00	11.44	955	19.00	22.00	60.00	14.00	1173
144	9.00	14.00	16.00	44.00	10.48	902	14.50	16.50	45.50	10.83	922	16.25	18.50	51.00	12.16	1039	19.75	22.75	62.25	14.83	1281
150	9.25	14.75	16.50	46.00	11.21	950	15.25	17.00	47.50	11.57	981	17.00	19.00	53.00	12.91	1087	20.75	23.25	64.75	15.76	1341
156	9.50	15.25	17.00	47.50	11.80	991	15.75	17.50	49.00	12.15	1022	17.50	19.75	54.75	13.59	1144	21.50	24.00	67.00	16.62	1394
162	9.75	16.00	17.50	49.50	12.57	1077	16.50	18.00	51.00	12.93	1109	18.25	20.25	56.75	14.37	1236	22.50	24.75	69.75	17.69	1533
168	10.00	16.50	18.00	51.00	13.19	1121	17.00	18.75	52.75	13.63	1157	19.00	20.75	58.75	15.18	1288	23.25	25.50	72.00	18.60	1581
174	10.25	17.25	18.50	53.00	14.00	1173	17.75	19.25	54.75	14.45	1222	19.75	21.25	60.75	16.00	1353	24.25	26.25	74.75	19.73	1673
180	10.50	17.75	19.00	54.50	14.65	1218	18.50	19.75	56.75	15.29	1276	20.50	22.00	63.00	16.94	1411	25.00	26.75	76.75	20.59	1727



HOOK BOLT DETAIL



TYPICAL HALF PLAN

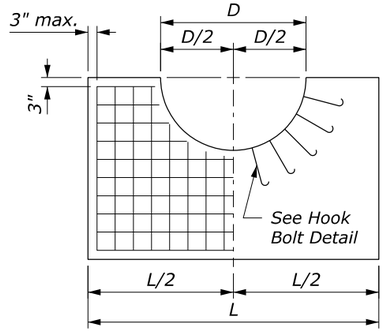
NOTE:

1. Pour concrete monolithically. Chamfer all exposed edges 3/4 inch and finish all exposed surfaces with a Class 1 ordinary finish.
2. Clearance for reinforcing steel is 2 inches unless otherwise noted.
3. Headwall dimension "H" may be reduced in solid rock provided the wall is keyed into the rock at least 1 foot.
4. Set hook bolts on nominal 18-inch centers around pipe perimeter at center of headwall. Hook bolts conform to ASTM A307. Galvanize according to ASTM A153.
5. For installations with more than two pipe culverts, increase the dimension "L" and all quantities shown for double pipe installation by adding a length equal to dimension "B" and the incremental change in quantities for each additional pipe culvert.
6. For skews other than those shown, multiply quantities and dimensions "A", "B" & "L" for square headwalls by secant of the skew angle.
7. Final quantities will be determined by using the tables on this standard.
8. Do not order materials until the length, skew angle, and slope bevel in the field have been approved.

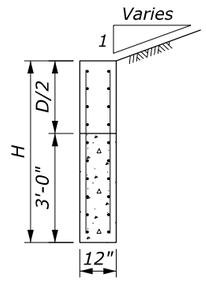
HEADWALL FOR SINGLE PIPE CULVERT

DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES

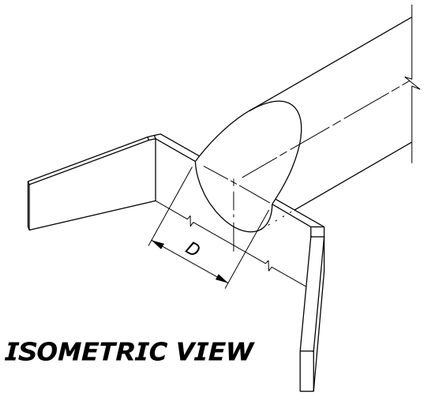
D INCH	H FEET	SQUARE HEADWALL			15° SKEW			30° SKEW			45° SKEW		
		L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB
48	5.00	8.00	1.25	101	8.25	1.29	109	9.25	1.44	120	11.25	1.75	144
54	5.25	9.25	1.50	124	9.50	1.54	126	10.75	1.75	148	13.00	2.11	175
60	5.50	10.50	1.78	143	10.75	1.81	151	12.00	2.02	164	14.75	2.49	208
66	5.75	11.75	2.06	175	12.25	2.15	186	13.50	2.37	203	16.50	2.89	249
72	6.00	13.00	2.37	196	13.50	2.46	207	15.00	2.73	231	18.50	3.37	286
78	6.25	14.25	2.68	221	14.75	2.78	233	16.50	3.11	259	20.25	3.82	317
84	6.50	15.50	3.02	256	16.00	3.11	268	18.00	3.51	299	22.00	4.29	368
90	6.75	16.75	3.37	284	17.25	3.47	297	19.25	3.87	327	23.75	4.78	406
96	7.00	18.00	3.74	309	18.75	3.90	325	20.75	4.30	364	25.50	5.29	442
102	7.25	19.25	4.12	354	20.00	4.28	371	22.25	4.76	416	27.25	5.83	510
108	7.50	20.50	4.52	381	21.25	4.68	399	23.75	5.24	447	29.00	6.39	554
114	7.75	21.75	4.93	419	22.50	5.10	430	25.00	5.66	479	30.75	6.97	594
120	8.00	23.00	5.36	441	23.75	5.53	460	26.50	6.17	521	32.50	7.57	634
126	8.25	24.25	5.81	502	25.00	5.98	514	28.00	6.70	572	34.25	8.20	711
132	8.50	25.50	6.27	527	26.50	6.52	560	29.50	7.25	618	36.00	8.84	754
138	8.75	26.75	6.75	570	27.75	7.00	584	31.00	7.83	658	37.75	9.51	799
144	9.00	28.00	7.24	619	29.00	7.50	654	32.25	8.33	723	39.50	10.20	885
150	9.25	29.25	7.75	665	30.25	8.01	680	33.75	8.94	761	41.25	10.92	933
156	9.50	30.50	8.27	692	31.50	8.54	728	35.25	9.56	805	43.25	11.74	996
162	9.75	31.75	8.81	767	32.75	9.08	783	36.75	10.21	889	45.00	12.50	1094
168	10.00	33.00	9.37	796	34.25	9.73	838	38.00	10.78	919	46.75	13.28	1146
174	10.25	34.25	9.94	847	35.50	10.31	867	39.50	11.46	974	48.50	14.09	1197
180	10.50	35.50	10.53	877	36.75	10.90	920	41.00	12.17	1022	50.25	14.91	1260



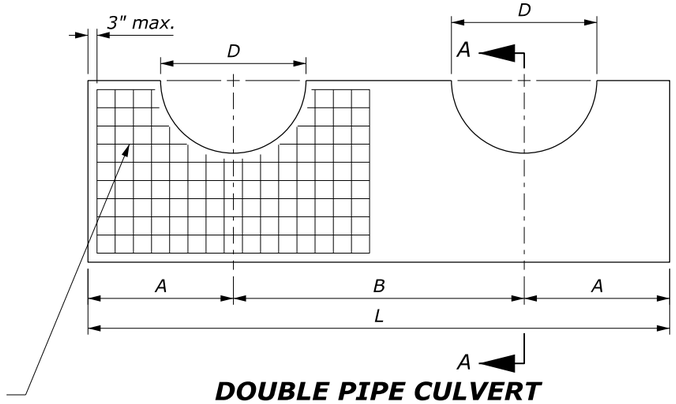
SINGLE PIPE CULVERT



SECTION A-A



ISOMETRIC VIEW



#4 bars at equal spacing
10" max. both faces

DOUBLE PIPE CULVERT HEADWALLS

NO SCALE

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

CONCRETE HEADWALLS

FLH STANDARD	601-1
SPECIFICATION	FP-24, FP-14
APPROVED FOR USE	2/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S13

WINGWALLS FOR CONCRETE HEADWALLS

DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES

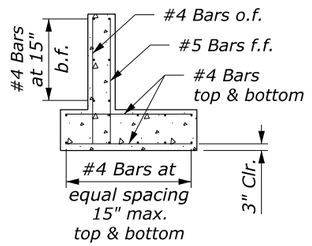
D	H	0° WINGWALL SKEW			15° WINGWALL SKEW			30° WINGWALL SKEW			45° WINGWALL SKEW			60° WINGWALL SKEW		
INCH	FEET	W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB
48	5.00	6.00	2.81	178	6.00	2.78	178	6.00	2.76	178	6.00	2.74	178	6.00	2.73	178
54	5.25	6.00	2.86	180	6.00	2.82	180	6.00	2.80	180	6.00	2.78	180	6.75	3.06	202
60	5.50	6.25	2.90	181	6.00	2.86	181	6.00	2.84	181	6.00	2.82	181	7.50	3.39	224
66	5.75	7.00	2.94	183	6.00	2.90	183	6.00	2.87	183	6.00	2.85	183	8.25	3.74	241
72	6.00	7.50	2.98	185	6.00	2.94	185	6.00	2.91	185	6.50	3.09	202	9.00	4.09	263
78	6.25	8.25	3.02	186	6.00	2.98	186	6.00	2.95	186	7.00	3.34	213	9.75	4.45	285
84	6.50	8.75	3.06	188	6.00	3.02	188	6.25	3.09	197	7.50	3.59	232	10.50	4.81	311
90	6.75	9.50	3.11	190	6.00	3.06	190	6.50	3.24	207	8.00	3.84	246	11.25	5.18	329
96	7.00	10.00	3.15	191	6.25	3.21	200	7.00	3.49	218	8.50	4.10	260	12.00	5.56	350

RECOMMENDED WINGWALL SKEWS

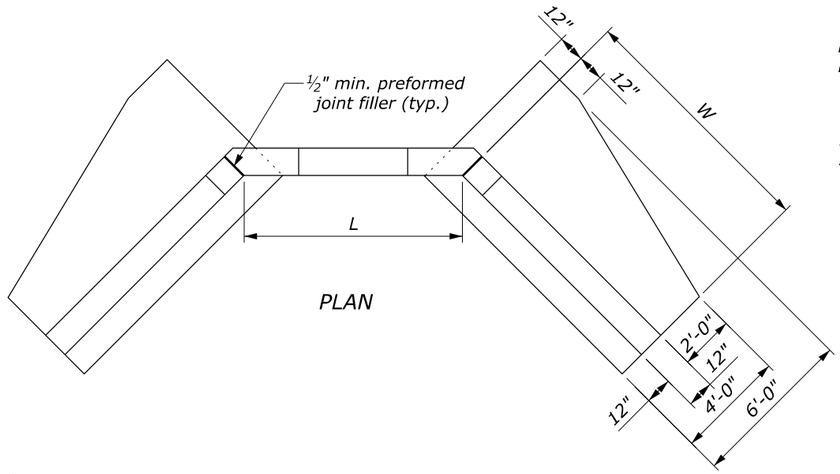
WINGWALL	PIPE SKEW			
	0°	15°	30°	45°
①	45°	45°	60°	60°
②	45°	30°	15°	0°
③	45°	30°	15°	0°
④	45°	45°	60°	60°

NOTE:

1. Chamfer all exposed edges ¾ inch and finish all exposed surfaces with a Class 1 ordinary finish.
2. Reinforcing steel clearance is 2 inches unless otherwise noted.
3. For skew angles shown in table, the length W and quantities for wingwalls are computed for a 1V:1.5H side slope. For 1V:2H or 1V:2.5H slopes compute length W with the following equation:
   W = D/2 × slope × secant (wingwall skew angle)
   Minimum W not less than 6 feet.
4. Quantities shown in table are for one wingwall only. For lengths W not shown in table, approximate the quantities by multiplying the quantities for 0° skew and a given height H by the factor: 1 + [(W-6.0) × 0.14].
5. See Standards 601-1 and 601-2 for headwall and slope paving dimensions.
6. Final quantities will be determined by using the tables on this drawing.
7. Do not order materials until the length, skew angle, and slope bevel in the field have been approved.



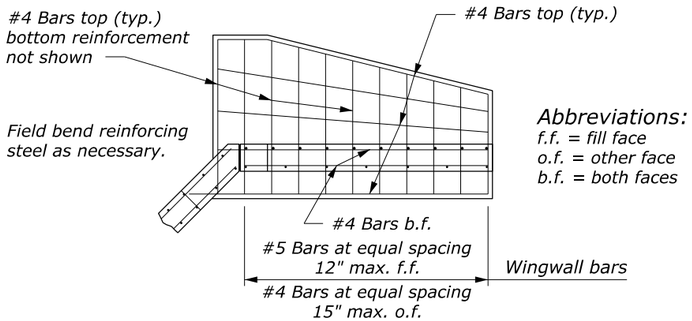
SECTION A-A



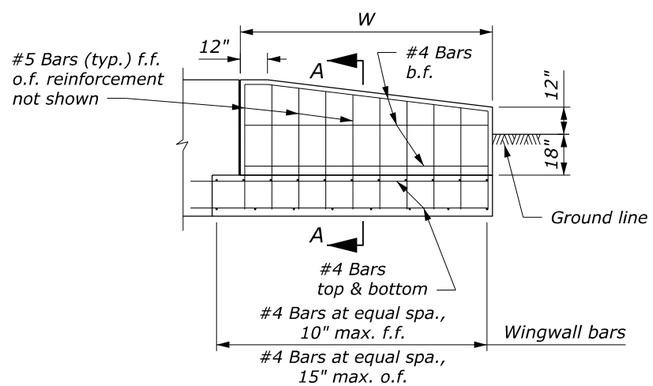
PLAN

ELEVATION

HEADWALL AND WINGWALL



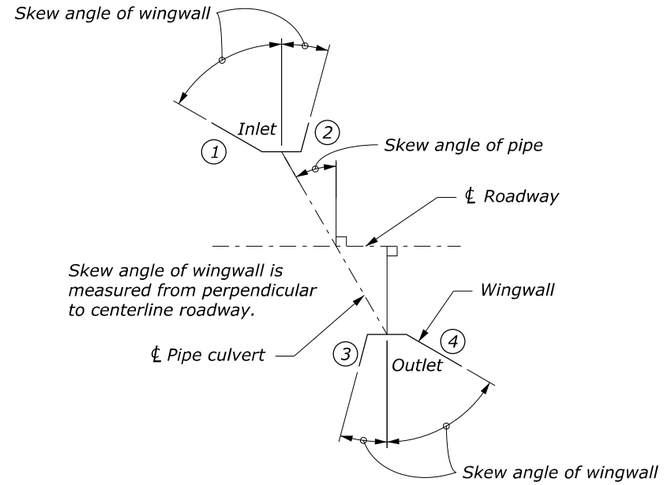
PLAN



ELEVATION

TYPICAL WINGWALL

Abbreviations:
f.f. = fill face
o.f. = other face
b.f. = both faces



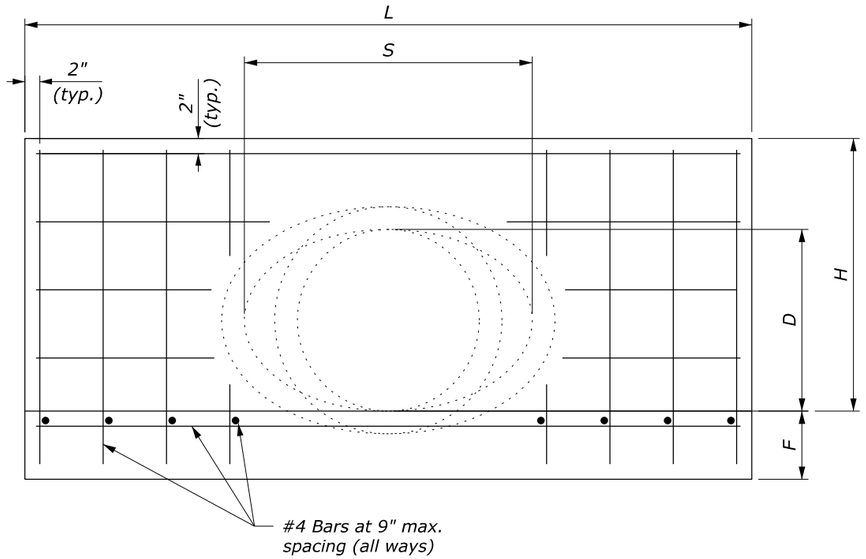
WINGWALL LAYOUT

NO SCALE

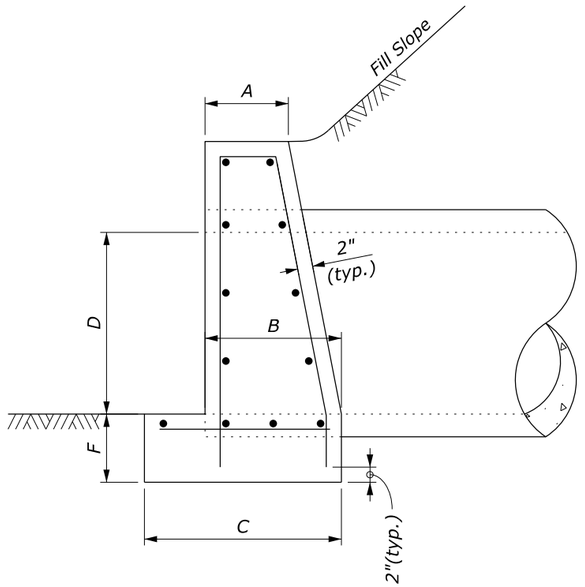
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 601-3
WINGWALLS FOR CONCRETE HEADWALLS	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 2/2024

M:\PROJECTS\VI\kstthomas\nh38(2)_c2\Proj_Dev\CADD\Std-Det\S13 601-3 Wingwalls for Concrete Headwalls.dgn [Std 601-3]
9 April 2025 8:37 AM

PROJECT	SHEET NUMBER
VI 38(2) C2	S14



FRONT ELEVATION



SIDE ELEVATION

NOTE:

1. *Prepare foundation according to Section 209. Place headwalls on 6 inches of foundation fill.*
2. *Orient all headwalls parallel to the roadway centerline unless otherwise shown in the plans or as directed.*
3. *When pipes are on a skew, adapt and lengthen headwalls as directed.*
4. *Chamfer all exposed corners not rounded to ¾ inch.*
5. *Quantities shown are for one headwall with pipe at right angles.*

HEADWALL FOR ELLIPTICAL PIPE

	SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)									
	23" x 14"	30" x 19"	34" x 22"	38" x 24"	42" x 27"	45" x 29"	49" x 32"	53" x 34"	60" x 38"	68" x 43"
A	0'-8"	0'-9"	0'-10"	0'-10"	0'-11"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"	1'-11"	2'-0"
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"	3'-3"	3'-6"
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"	3'-2"	3'-7"
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"	4'-11"	5'-4"
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"	13'-0"	13'-0"
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"	5'-0"	5'-8"
CUBIC YARDS OF CONCRETE										
Conc. Pipe	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801	2.969	2.904

HEADWALL FOR CIRCULAR PIPE

	DIAMETER OF PIPE CULVERT (D)					
	6"	15"	18"	21" or 24"	27" or 30"	33" or 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-9"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-2"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-0"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	3'-8"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CUBIC YARDS OF CONCRETE						
Conc. Pipe	0.241	0.492	0.697	1.319	2.067	2.947
C.M. Pipe	0.257	0.521	0.739	1.398	2.198	3.145

NO SCALE

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

CONCRETE HEADWALL FOR SMALL PIPE CULVERT

FLH STANDARD 601-4

SPECIFICATION FP-24, FP-14

APPROVED FOR USE 2/2024

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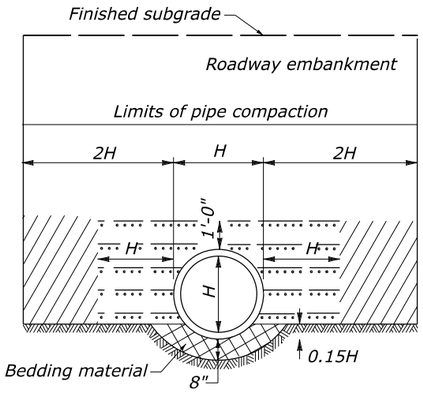
9 April 2025 8:37 AM

PROJECT	SHEET NUMBER
VI 38(2) C2	S15

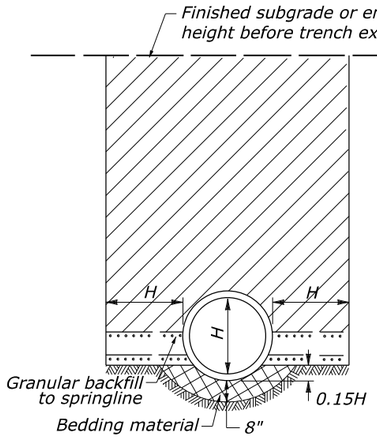
CONCRETE ROUND PIPE CULVERT

FILL HEIGHT AND PIPE CLASS TABLE

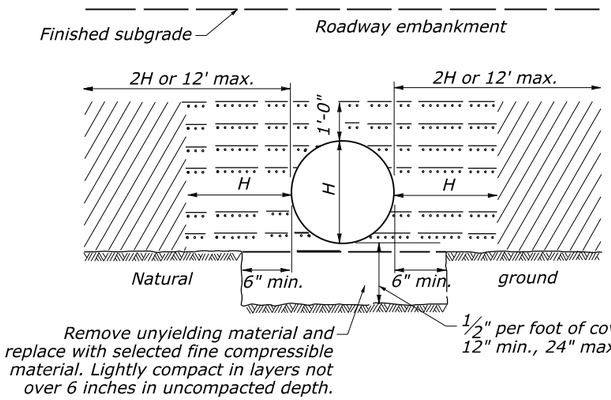
PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	EMBANKMENT				TRENCH			
		CLASS II	CLASS III	CLASS IV	CLASS V	CLASS II	CLASS III	CLASS IV	CLASS V
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
12	12	11	11	16	23	18	18	26	37
18	12	10	10	25	39	14	14	31	45
24	12	11	11	15	31	15	15	22	40
30	12	9	13	16	35	13	17	20	46
36	12	9	9	20	41	11	14	26	56
48	12	12	14	26	44	16	17	31	50
60	12	15	17	28	44	15	20	32	50
72	12	13	17	31	41	16	20	35	49
84	12	13	19	31		15	23	37	
96	12	13	20			16	24		
108	12	16	20			19	26		



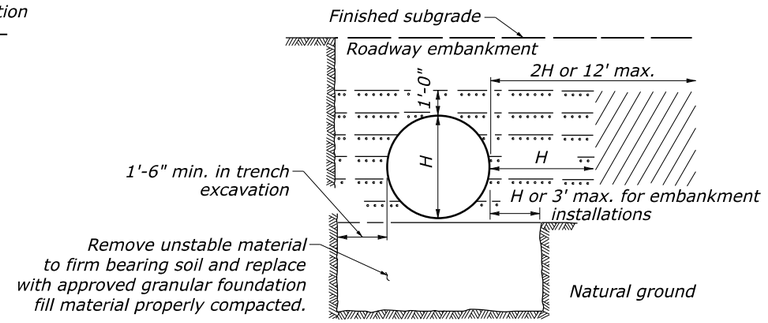
EMBANKMENT INSTALLATION



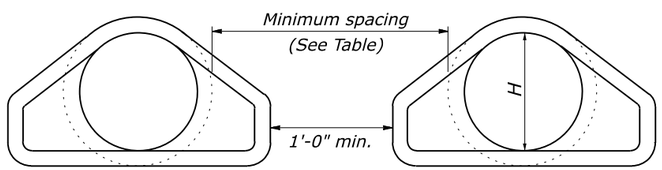
TRENCH INSTALLATION



ON UNYIELDING MATERIAL



ON UNSTABLE MATERIAL

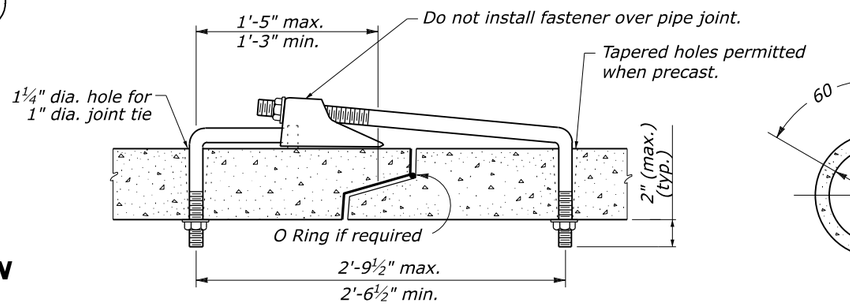


MINIMUM SPACING		
DIAMETER INCHES	EMBANKMENT	TRENCH
12-36	15"	2H
36-96	H/2	72"
OVER 96	48"	72"

MULTIPLE ROUND PIPE INSTALLATION

LEGEND:

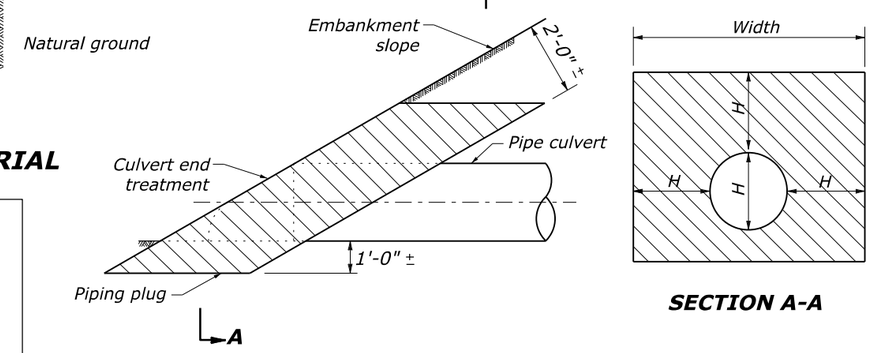
- Bedding material
- Embankment material placed in layers not exceeding 6" compacted depth.
- Approved granular material or fine compactable soil placed in layers not exceeding 6" compacted depth.



SUPPLEMENTAL CONCRETE PIPE TIE

NOTES:

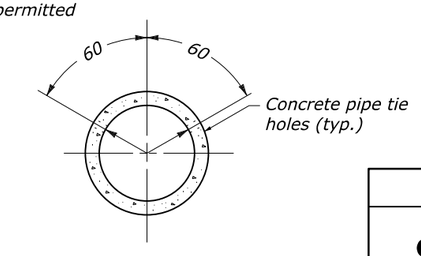
1. When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
2. 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 pavement, 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.
3. Pipe compaction limits shown are for pipe installation in an embankment. For pipe installation in trench, ensure the compaction limits are the walls of the trench.
4. When grades exceed 10%, install supplemental concrete pipe ties on pipe culvert or install bell and spigot pipe.
5. Maximum fill heights for pipe culvert installations may be increased on approval of site-specific structural pipe designs meeting the criteria of AASHTO Standard Specifications for Highway Bridges.
6. Use supplemental concrete pipe ties on last downstream pipe-to-pipe joint and at downstream pipe-to-end section joint, if present. Use elsewhere as specified in the contract documents. Ensure all tie hardware are galvanized and conforming to ASTM A307.



SECTION A-A

PIPING PLUG

Construct piping plug at culvert inlet when embankment material is classified other than AASHTO A-6 or A-7. Inlets with full-height headwalls or slope paving excluded. Construct plug of A-6 or A-7 material or other approved material with a permeability not to exceed 0.004 in./sec. Width may be adjusted to tie into impervious material.



NO SCALE

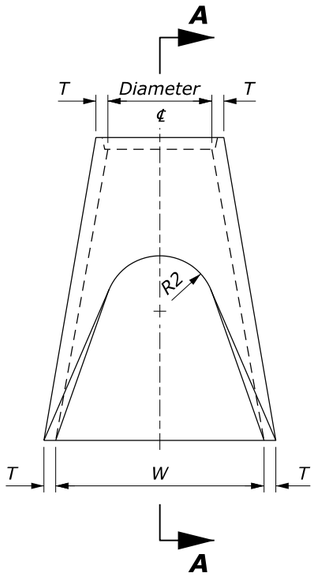
U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

CONCRETE PIPE CULVERT INSTALLATION

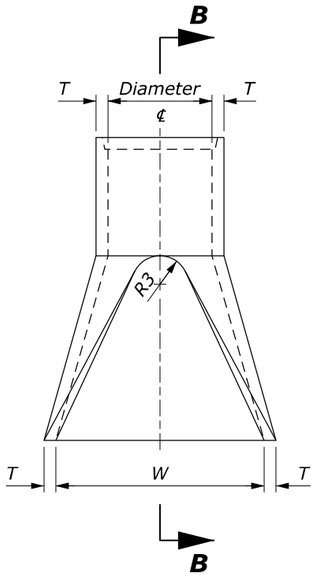
EFLHD DETAIL	E602-07
SPECIFICATION	FP-24, FP-14
APPROVED FOR USE	05/2024

M:\PROJECTS\vfe\stthomas\nh38(2)_c2\Proj_Dev\CADD\Std+Det\S15 602-07 Concrete Pipe Culvert Installation.dgn [Sheet]
9 April 2025 8:59 AM

PROJECT	SHEET NUMBER
VI 38(2) C2	S16



PLAN



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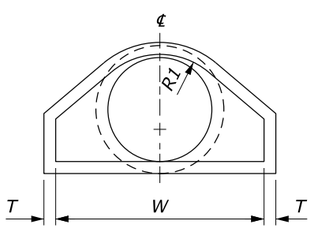
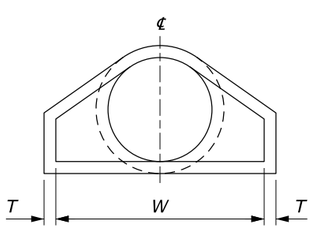


ELEVATION



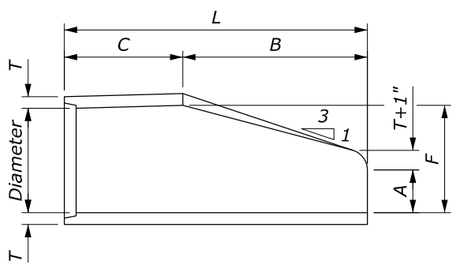
ELEVATION

NOTE:

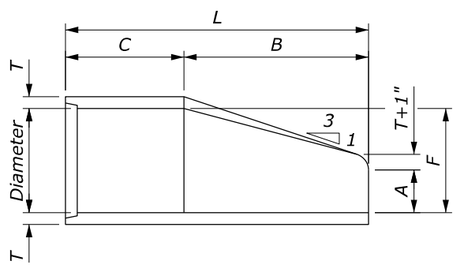
1. *Variations in design and dimensions are permitted to allow for manufacturer's standards.*
2. *Fabricate the outlet end section with a groove end and the inlet end section with a tongue end.*
3. *Warp embankment slopes to match the slope of the flared end section.*

END SECTIONS FOR ROUND PIPE CULVERT

PIPE SIZE DIAMETER inch	DIMENSIONS inch									
	T	A	B	C	L	W	F	R1	R2	R3
12	2	4	24	48 7/8	72 7/8	24	13	10 1/8	9	4
15	2 1/4	6	27	46	73	30	16	12 1/2	11	6
18	2 1/2	9	27	46	73	36	19	15 1/2	12	7 1/2
21	2 3/4	9	36	37	73	42	22	16 1/2	13	5
24	3	9 1/2	43 1/2	30	73 1/2	48	25	16 3/4	14	8
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	28	--	14 1/2	9
30	3 1/2	12	54	19 3/4	73 3/4	60	31	18 1/2	15	8
33	3 3/4	13 1/2"	58 1/2	37 1/2	96	66	34	23 3/4	17 1/2	9
36	4	15	63	33	96	72	37	23 1/4	20	11
42	4 1/2	21	63	33	96	78	43	--	22	11
48	5	24	72	24	96	84	49	--	22	12



SECTION A-A



SECTION A-A

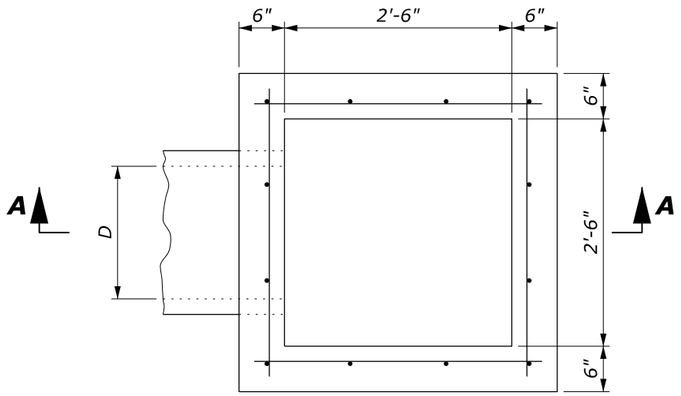
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 602-8
CONCRETE END SECTION FOR ROUND PIPE	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 1/2024

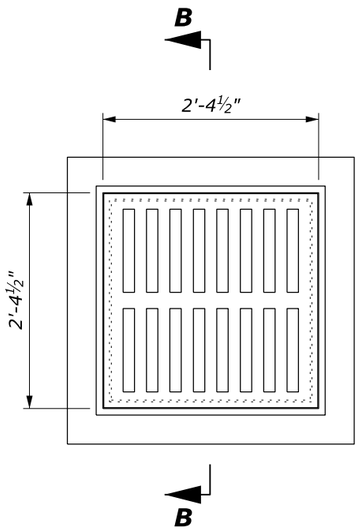
PROJECT	SHEET NUMBER
VI 38(2) C2	S17

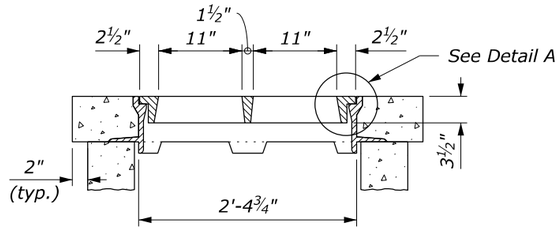
NOTE:

1. *Construct inlets parallel to the roadway centerline and grade. For pipes on skew, adapt inlets as directed.*
2. *For frames and gratings, minor variations in design and dimensions are permitted to allow manufacturer's standards.*

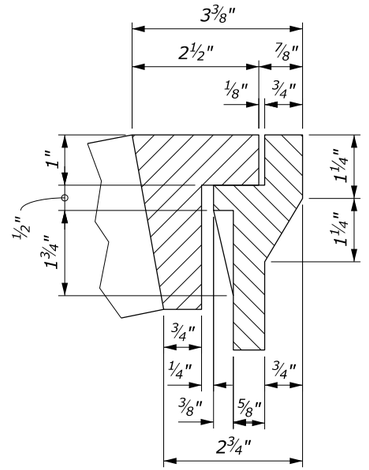


PLAN

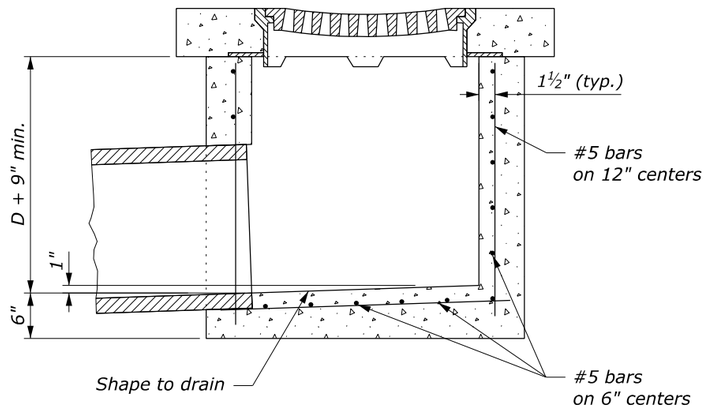




SECTION B-B

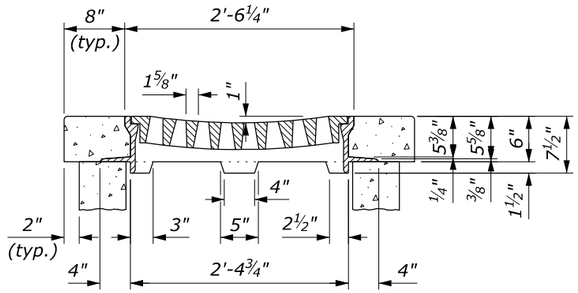


DETAIL A



SECTION A-A

TYPE 6B INLET



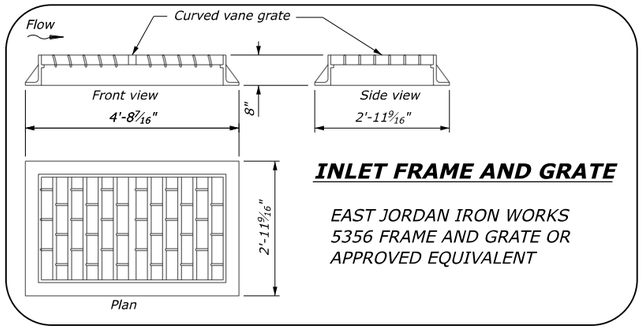
Gray Iron Castings, AASHTO M 105

METAL FRAMES AND GRATINGS
TYPE 6B

NO SCALE

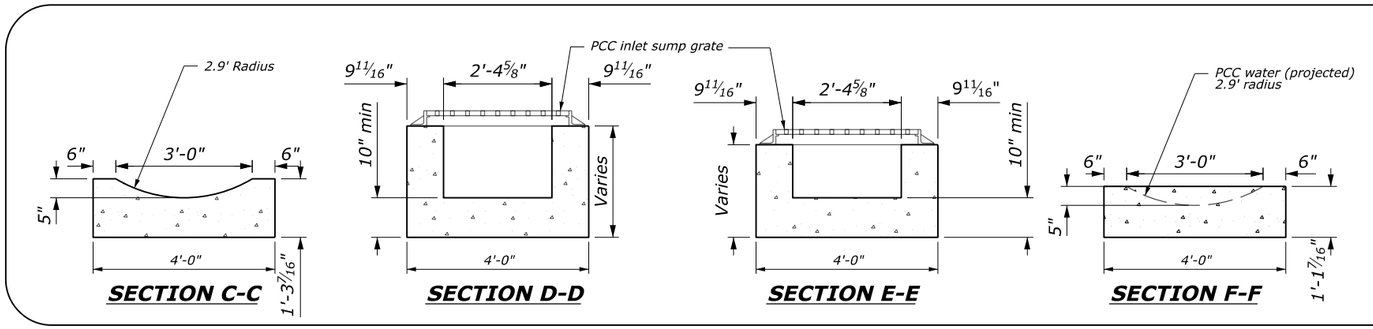
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 604-7
INLET **TYPE 6B**	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 1/2024

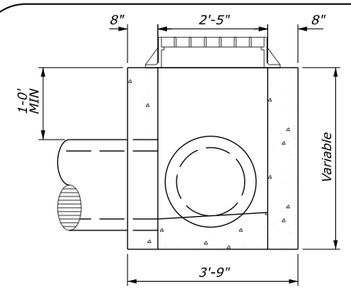
PROJECT	SHEET NUMBER
VI 38(2) C2	S14



INLET FRAME AND GRATE

EAST JORDAN IRON WORKS
5356 FRAME AND GRATE OR
APPROVED EQUIVALENT

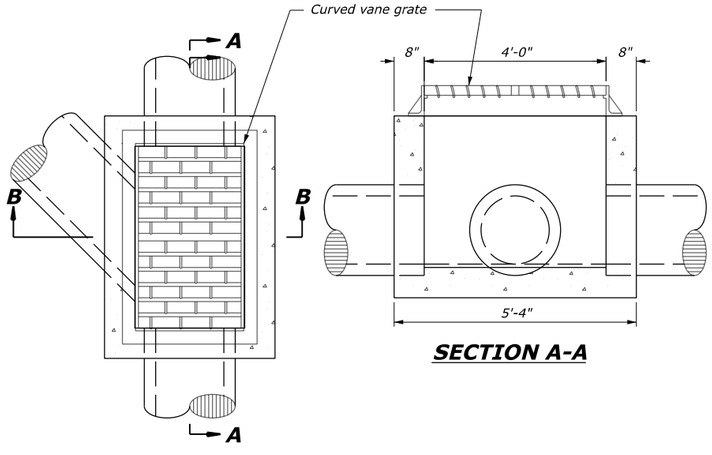




SECTION B-B

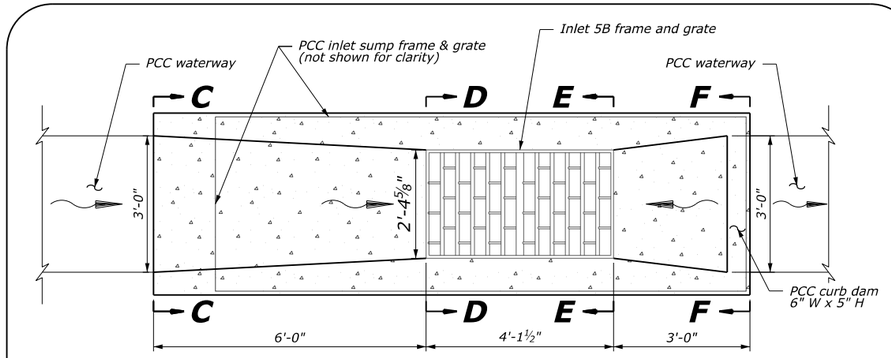
INLET

(REINFORCING STEEL NOT SHOWN FOR CLARITY)

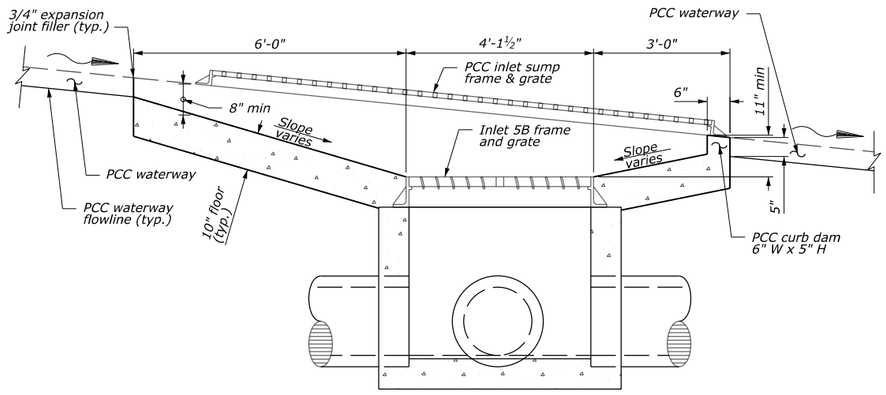


PLAN

SECTION A-A



PCC INLET SUMP PLAN



PCC INLET SUMP ELEVATION

(REINFORCING STEEL NOT SHOWN FOR CLARITY)

NOTES:

1. Furnish reinforcing bars #5. Place the rebars 1-1/2 inches minimum from face of concrete.

2. Place rebars on 6 inches centers each way in floors, and horizontal bars on 6 inches centers and vertical bars on 12 inches centers in walls, at Inlet 5B and PCC inlet sump.

3. Construct Portland Cement Concrete (PCC) inlet sump at all Type 5B (modified) inlets. Provide smooth transition at upstream end, from PCC waterway circular section, to flat bottom section at upstream end of 5B inlet grate.

4. Provide 3/4-inch expansion joint filler at butt joints between the PCC waterway and ends of PCC inlet sump, and around inlet 5B grate frame perimeter.

5. Provide East Jordan Ironworks 5356 inlet frame and grate with M5 curved vane grate on all Type 5B inlets, or an approved equal.

6. Provide COE approved traffic bearing frame and grate at all PCC inlet sumps. Frame and grate shall be steel or ductile iron. All steel parts of frame and grate shall be hot dipped galvanized after fabrication.

7. Maintain a minimum of 11 inches elevation difference between top of PCC curb dam and inlet 5B top of grate.

8. Maintain a minimum of 8 inches clearance from bottom of inlet sump grate frame to PCC inlet sump floor.

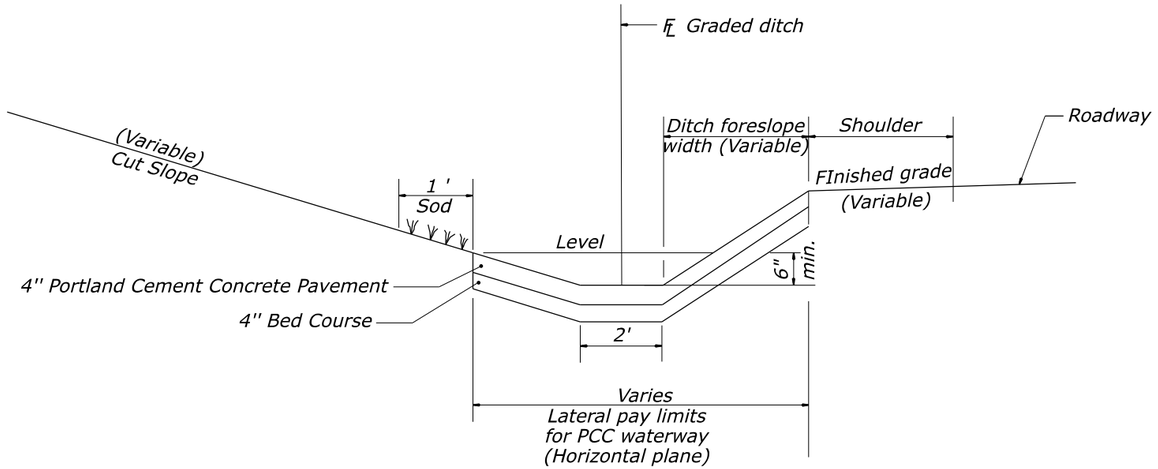
NO SCALE

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

INLET
TYPE 5B (MODIFIED)

EFLHD DETAIL
E604-A
SPECIFICATION
FP-24
APPROVED FOR USE
--/----

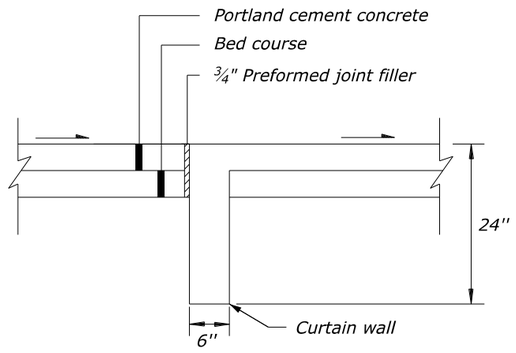
PROJECT	SHEET NUMBER
VI 38(2) C2	S19



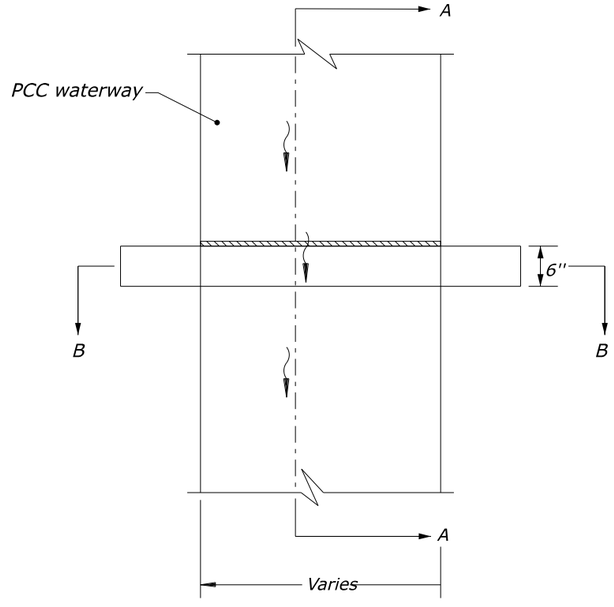
PORTLAND CEMENT CONCRETE WATERWAY

NOTES:

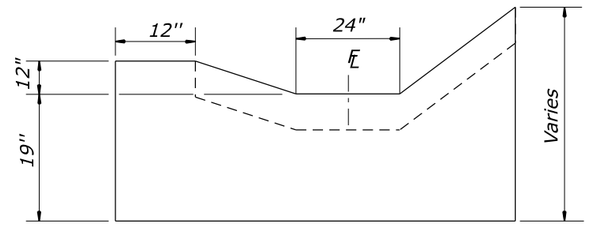
1. *At inlets and other special locations, widen and shape paved waterway to drain.*
2. *Construct Portland Cement Concrete waterway in uniform sections 20 feet in length, except closure sections are not less than 5 feet in length. Place expansion joints, with curtain walls at 100 foot intervals.*
3. *At the outlet end of each Portland Cement Concrete waterway, construct a curtain wall on the downstream end of the last section of waterway.*



SECTION A-A



PLAN



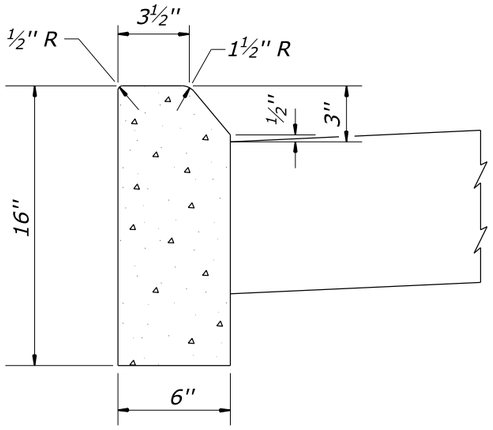
SECTION B-B

EXPANSION JOINT FOR PORTLAND CEMENT CONCRETE WATERWAY

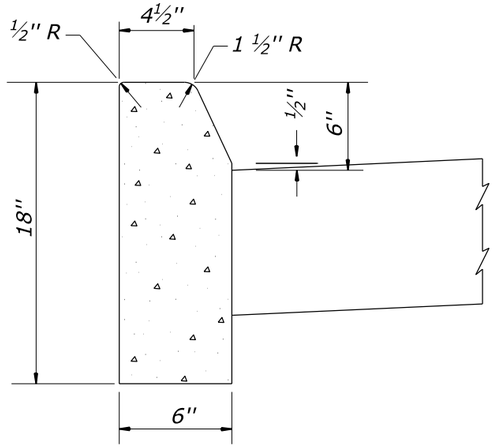
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E608-04A
PAVED WATERWAY, TYPE 4 (CONCRETE)	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE

PROJECT	SHEET NUMBER
VI 38(2) C2	S20



16-INCH DEPTH
(MOUNTABLE)

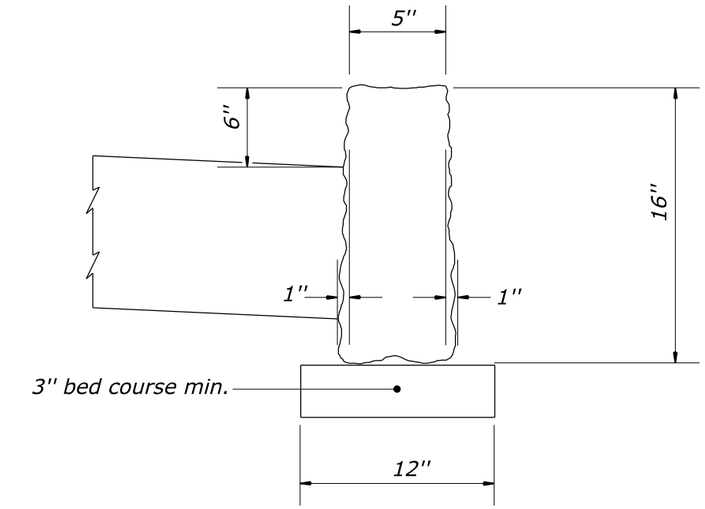


18-INCH DEPTH
(NON- MOUNTABLE)

PORTLAND CEMENT CONCRETE CURB

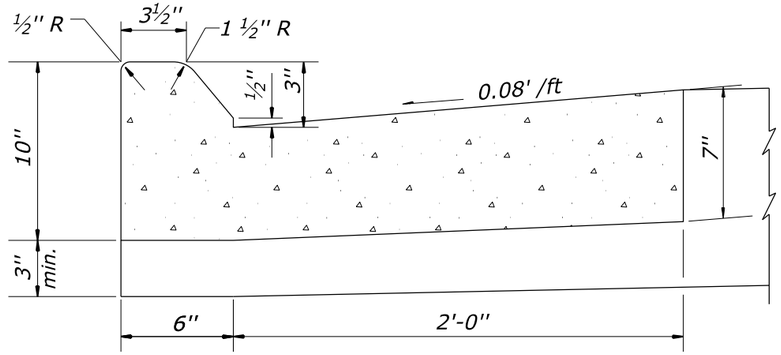
NOTE:

Place 3 inches minimum aggregate bed course under all curb and gutter.

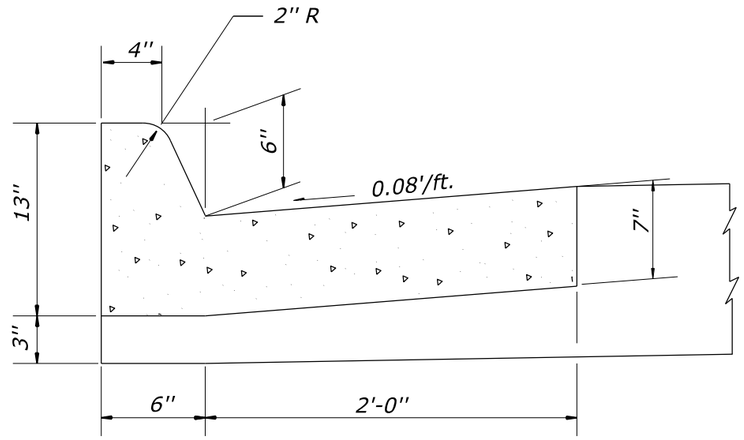


STONE CURB

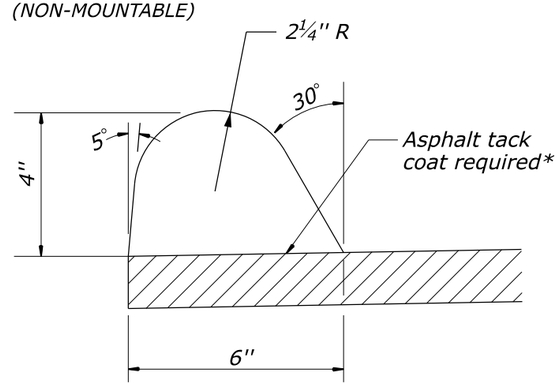
16-INCH DEPTH
(NON-MOUNTABLE)



10-INCH DEPTH
(MOUNTABLE)



13-INCH DEPTH
(NON- MOUNTABLE)



ASPHALT CONCRETE CURB

4-INCH DEPTH
(NON-MOUNTABLE)

* Asphalt tack coat may be rapid curing liquid asphalt or emulsified asphalt.

PORTLAND CEMENT CONCRETE CURB AND GUTTER

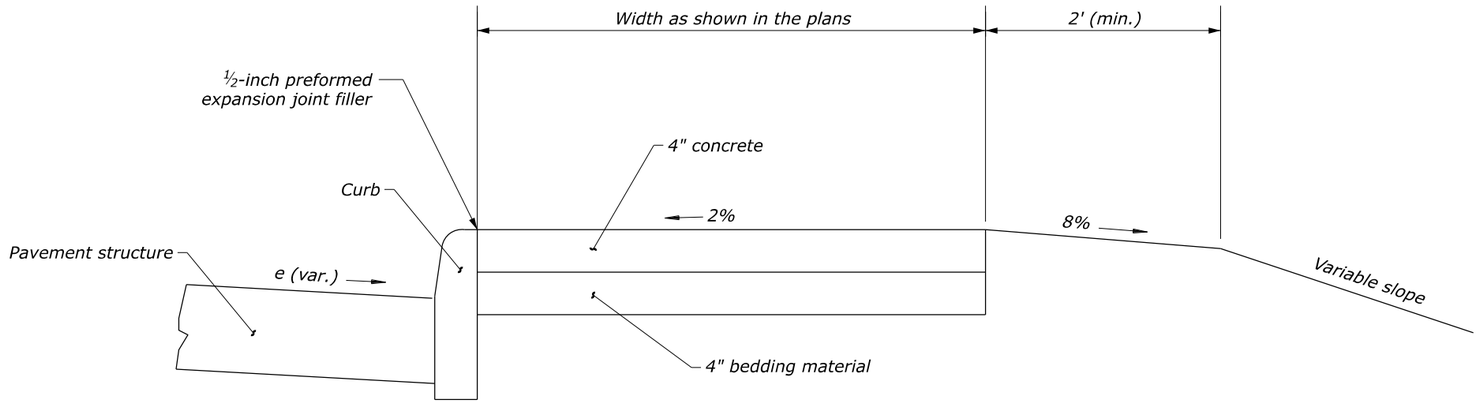
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E609-01
CURBS	SPECIFICATION FP-24. FP-14
	APPROVED FOR USE 05/2024

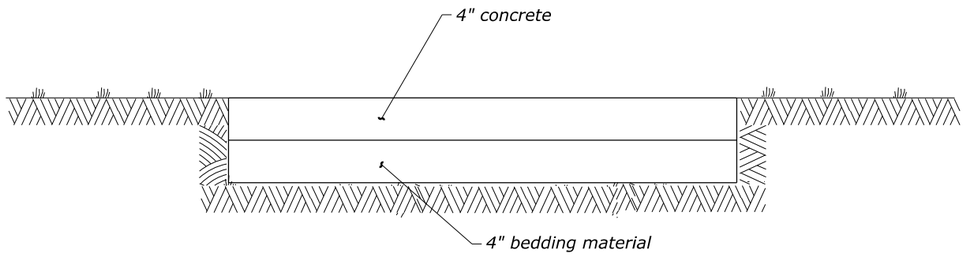
PROJECT	SHEET NUMBER
VI 38(2) C2	S21

NOTES:

1. Place ¾-inch transverse expansion joints at intervals of no more than 20 feet to match adjacent curb expansion joints.
2. Place contraction joints at intervals equal to the width of the sidewalk as shown in the plans.



SIDEWALK WITH CURB



SIDEWALK WITHOUT CURB

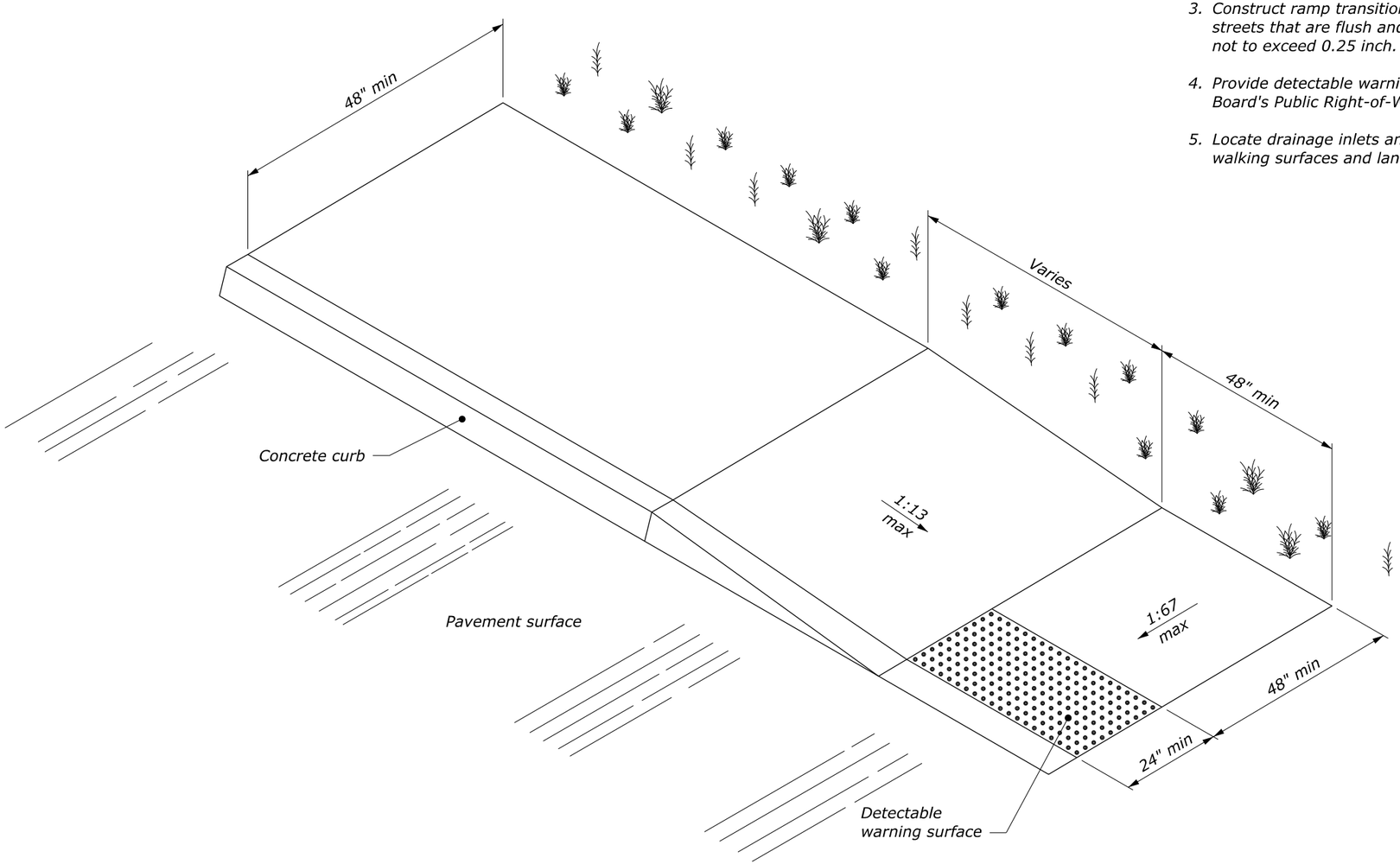
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E610-01
CONCRETE SIDEWALK	SPECIFICATION FP-24
	APPROVED FOR USE 05/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S22

NOTE:

1. *The cross slopes of ramps must not exceed 1.5% in any direction.*
2. *Use a coarse broom finish running perpendicular to the running slope to create a slip resistant surface on concrete ramp surfaces, exclusive of the detectable warning surface.*
3. *Construct ramp transitions between walks, gutters, or streets that are flush and free of abrupt vertical changes not to exceed 0.25 inch.*
4. *Provide detectable warning surfaces that meet the Access Board's Public Right-of-Way Accessibility Guidelines.*
5. *Locate drainage inlets and manholes outside of ramp walking surfaces and landings.*

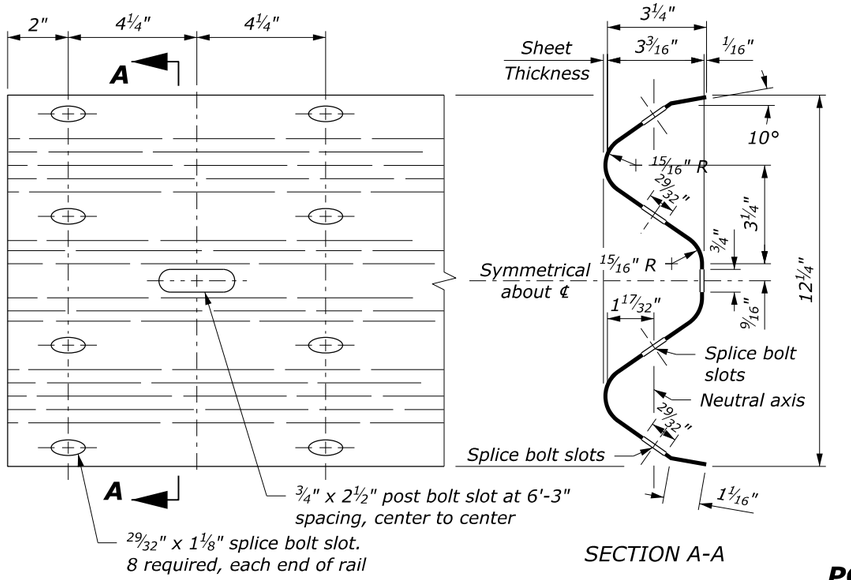


PARALLEL CURB RAMP

NO SCALE

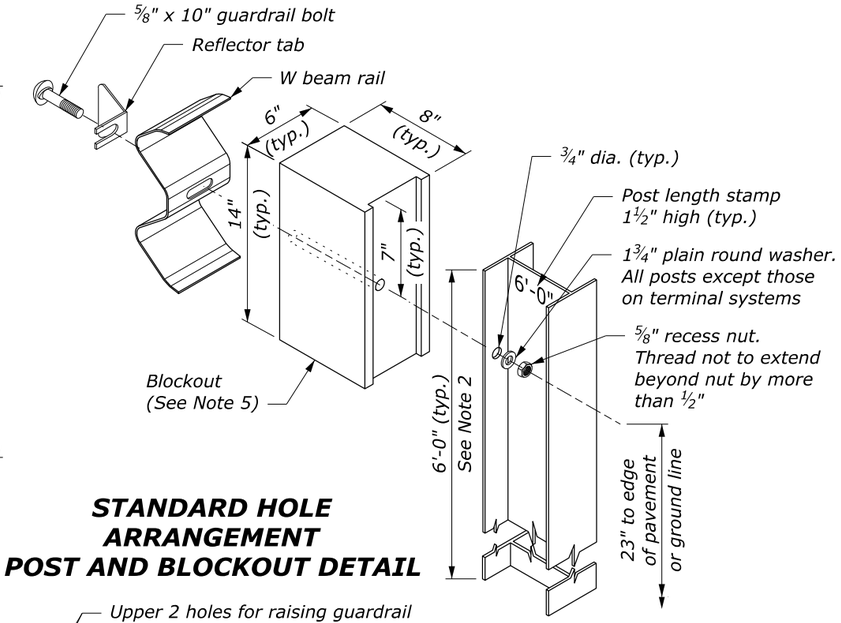
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 610-2
PARALLEL CURB RAMP	SPECIFICATION FP-24
	APPROVED FOR USE 8/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S23



RAIL ELEVATION

SECTION A-A

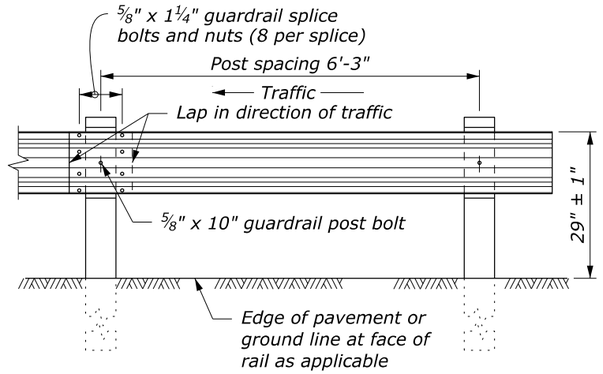


STANDARD HOLE ARRANGEMENT POST AND BLOCKOUT DETAIL

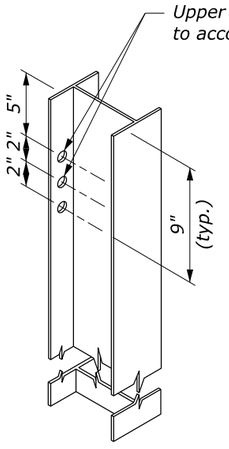
NOTE:

1. When encountering impenetrable material, see Standard 617-13.
2. See Special Contract Requirements when 7 foot or longer posts are specified.
3. See Special Contract Requirements when the alternate hole arrangement is specified.
4. Install delineator every fourth post. Fasten delineator to post using two galvanized 2" x ⅜" bolts with a washer on both sides, a lock washer, and nut; or fasten as specified by the manufacturer. Alternate delineator types may be used if approved.
5. Blockout may be wood, plastic, or composite material. Use consistent material throughout the length of guardrail run.
6. Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.

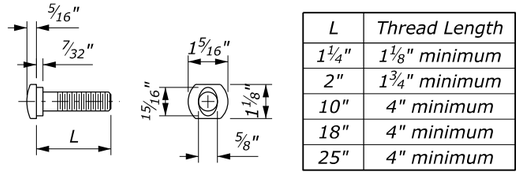
W BEAM RAIL



POST SPACING STANDARD POST SECTION

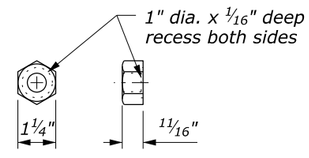


ALTERNATE HOLE ARRANGEMENT POST AND BLOCKOUT DETAIL



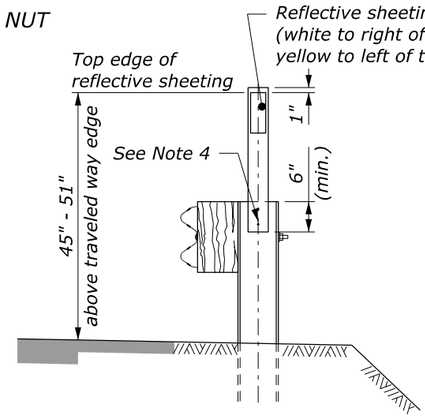
L	Thread Length
1¼"	1⅛" minimum
2"	1¾" minimum
10"	4" minimum
18"	4" minimum
25"	4" minimum

⅝" GUARDRAIL BOLT

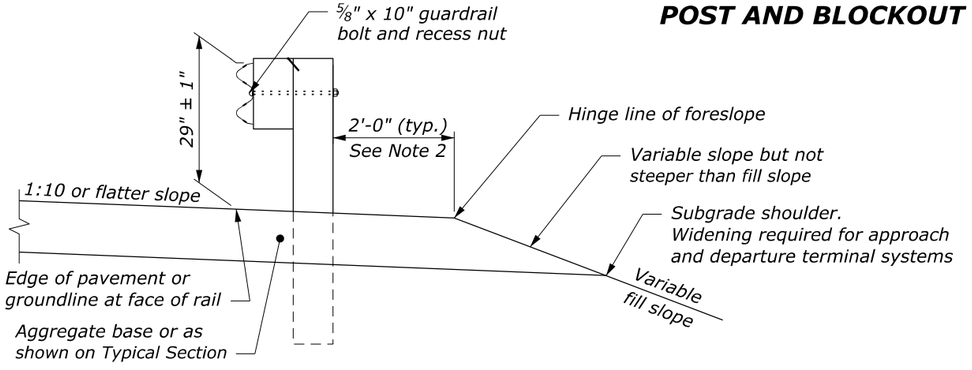


⅝" RECESS NUT

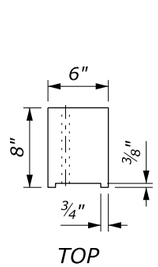
GUARDRAIL BOLT AND RECESS NUT

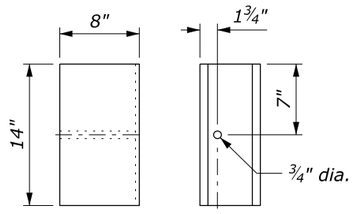


FLEXIBLE GUIDE POST GUIDERAIL MOUNT

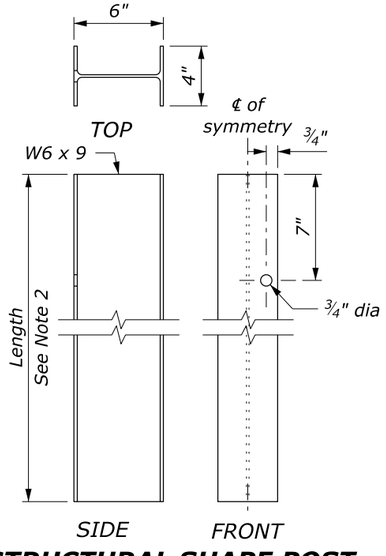


TYPICAL GUARDRAIL CROSS SECTION





BLOCKOUT



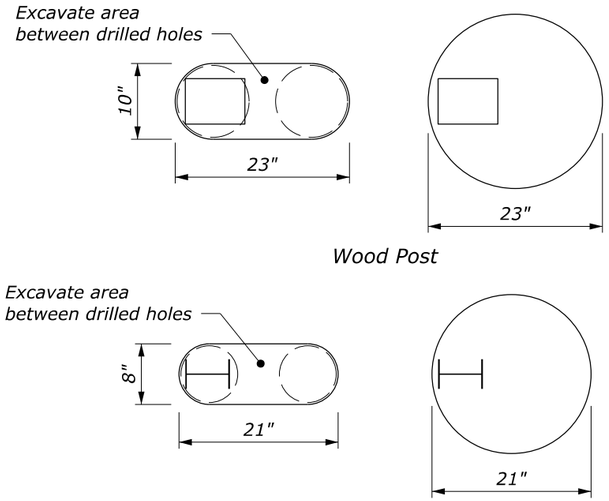
STRUCTURAL SHAPE POST (STANDARD HOLE ARRANGEMENT)

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 617-11
G4 W-BEAM GUARDRAIL STEEL POSTS	SPECIFICATION FP-24
	APPROVED FOR USE 1/2024

M:\PROJECTS\vfls\sthomas\mh38(2)_c2\Proj_Dev\CADD\Std-Det\S23 617-11 G4 W-Beam Guardrail Steel Posts.dgn [Std 617-11]
9 April 2025 9:05 AM

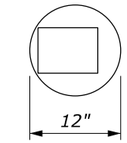
PROJECT	SHEET NUMBER
VI 38(2) C2	S24



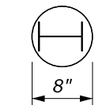
Wood Post

Steel Post

PLAN VIEW

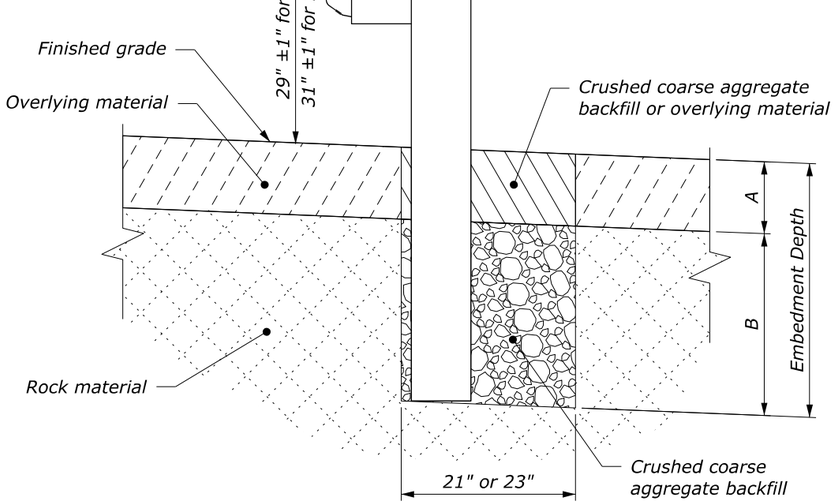


Wood Post



Steel Post

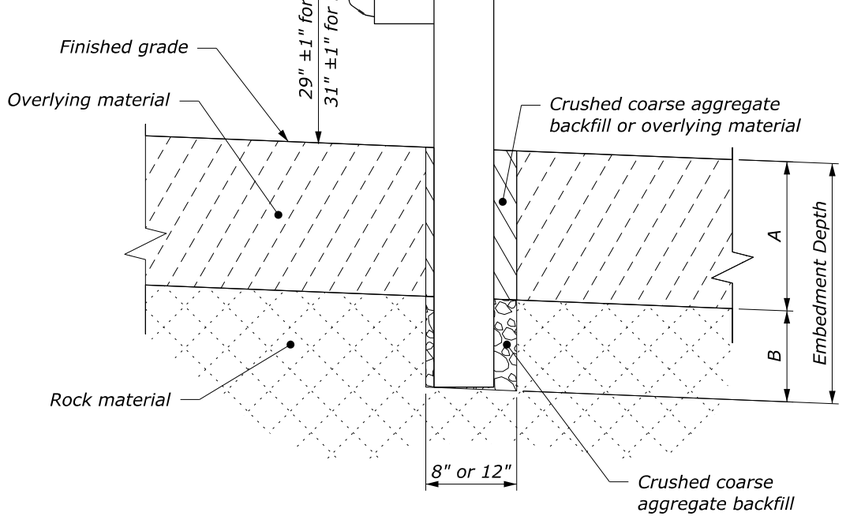
PLAN VIEW



ELEVATION

Case 1: Overlying material depth (A) is 18" or less

POST EMBEDMENT DIMENSIONS			
HOLE TYPE	EMBEDMENT DEPTH	OVERLYING MATERIAL (A)	DRILLING DEPTH (B)
Case 1	24" to 42"	0 to 18"	24"
Case 2	30" to 42"	> 18" to 30"	12"
	42"	> 30"	42" - A



ELEVATION

Case 2: Overlying material depth (A) is greater than 18"

NOTE:

1. *Use this standard when posts cannot be embedded to the minimum depth shown on Standard 617-10, 617-11, 617-31 or 617-32.*
2. *Unless otherwise specified, use either the circular or the oblong hole configuration for Case 1 conditions.*
3. *Use crushed coarse aggregate conforming to Section 703 "Coarse aggregate for concrete" or granular backfill for "Underdrain pipe with geotextile".*
4. *Place crushed coarse aggregate according to the post requirements in Section 617.*
5. *Treat field cut galvanized steel post surfaces that expose the base metal with two coats of zinc-oxide paint.*

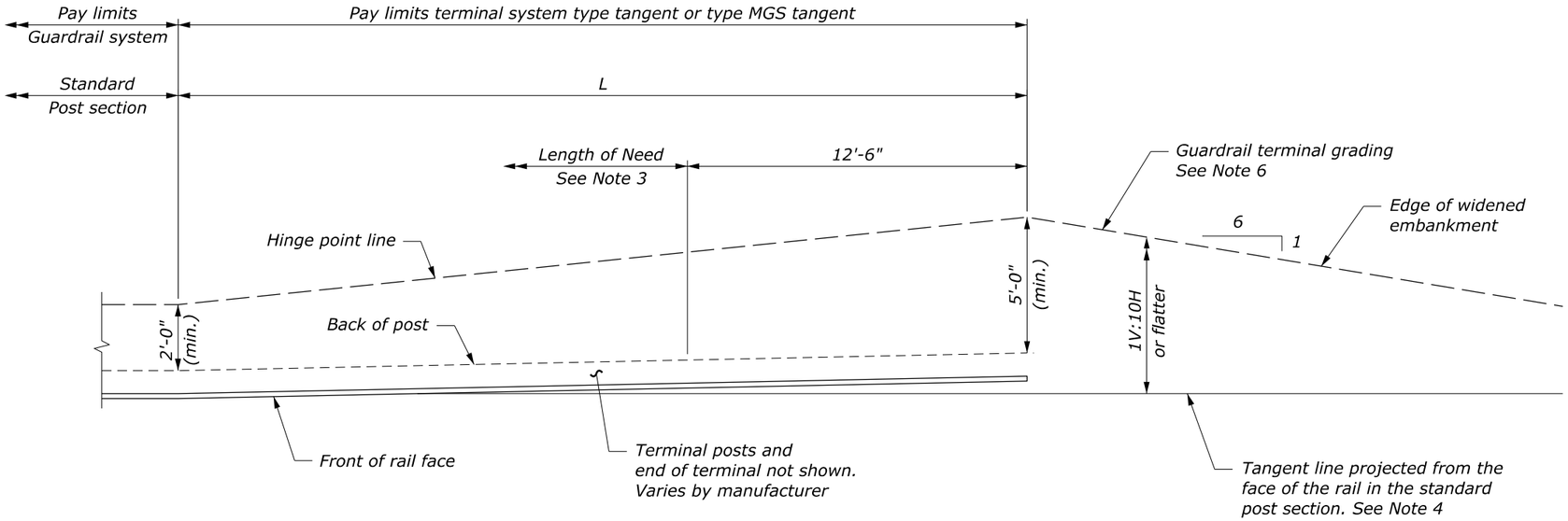
NO SCALE

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

MGS AND G4 W-BEAM GUARDRAIL INSTALLATION IN ROCK

FLH STANDARD
617-13
SPECIFICATION
FP-24, FP-14
APPROVED FOR USE
1/2024

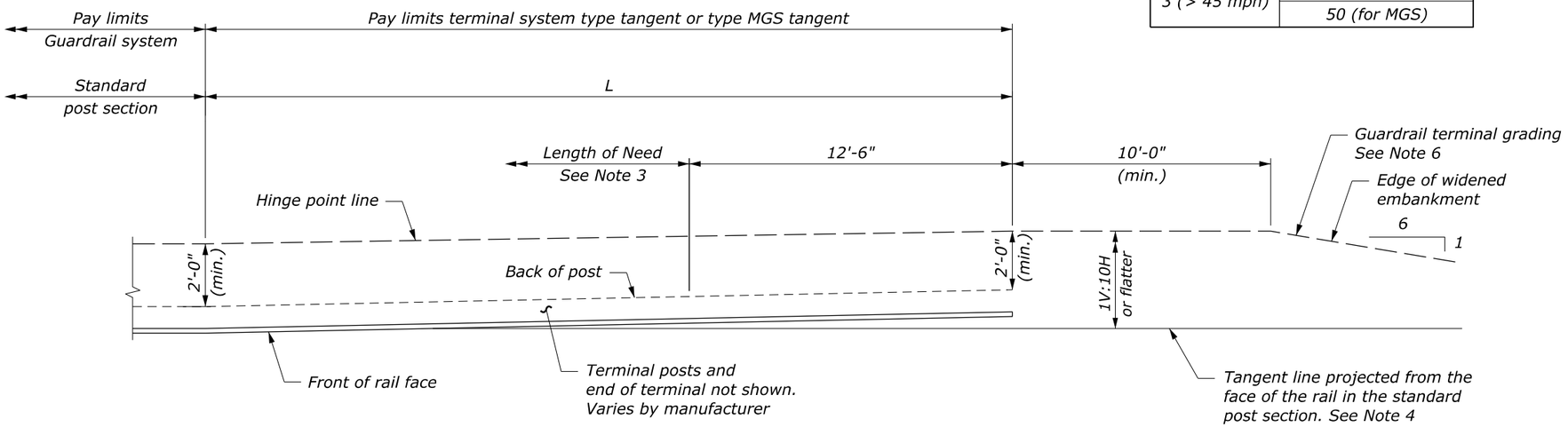
PROJECT	SHEET NUMBER
VI 38(2) C2	S25



PLAN

PREFERRED GRADING

TEST LEVEL	L (FT)
2 (≤ 45 mph)	25
3 (> 45 mph)	37.5 or 50 (for G4)
	50 (for MGS)



PLAN

ALTERNATIVE GRADING

NO SCALE

NOTE:

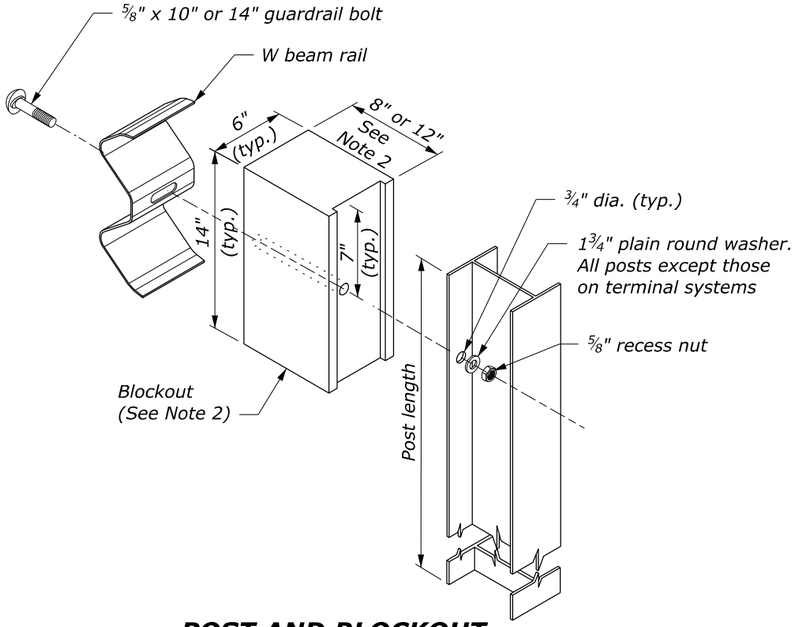
1. Install tangent terminal according to the manufacturer's recommendations. See manufacturer's drawings for other details.
2. Construct the terminal grading layout as shown in the staking notes or model. If no staking notes or model are provided, use the preferred grading layout as much as practical within site constraints. If necessary because of site limitations, use the alternative grading layout.
3. For design purposes, the length of need is assumed to begin at post 3. Verify the length of need with the manufacturer for a specific product. Adjust grading as necessary to install the tangent terminal according to the manufacturer's recommendations.
4. Install terminal at a 1:25 taper or flatter to position the end farther from the edge of shoulder, or use a taper according to the manufacturer's recommendations.
5. Install a reflectorized object marker on the end of the terminal.
6. Construct a 1V:4H slope outside of the guardrail terminal grading extents where practical.

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

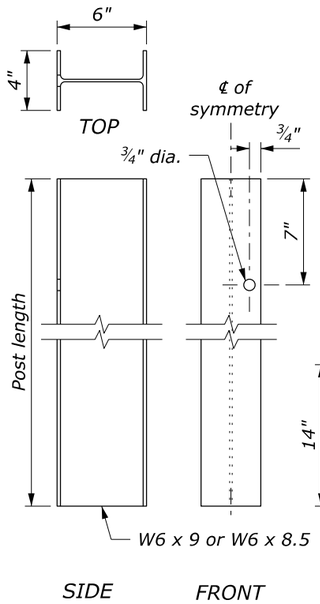
MGS AND G4 W-BEAM GUARDRAIL TYPE TANGENT TERMINAL AND GRADING

FLH STANDARD
617-20
SPECIFICATION
FP-24
APPROVED FOR USE
1/2024

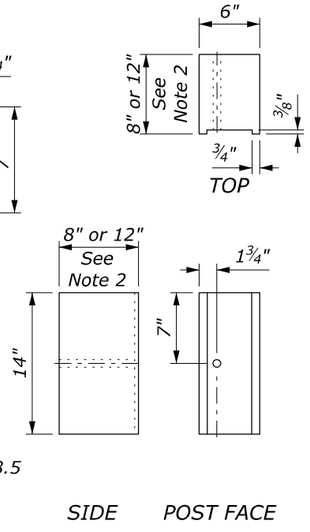
PROJECT	SHEET NUMBER
VI 38(2) C2	S26



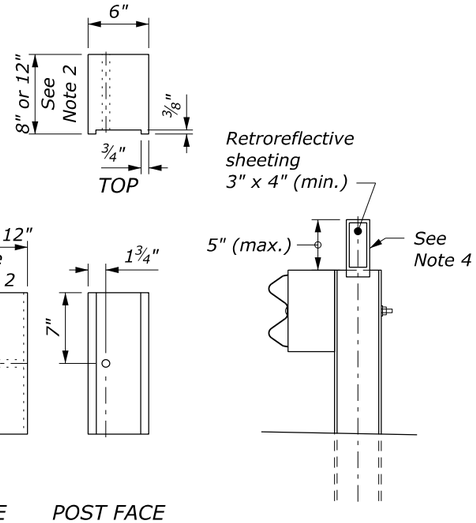
POST AND BLOCKOUT DETAIL



STRUCTURAL SHAPE POST



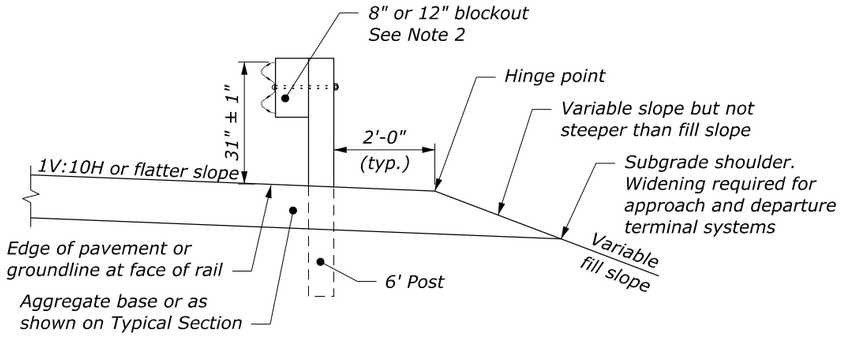
BLOCKOUT



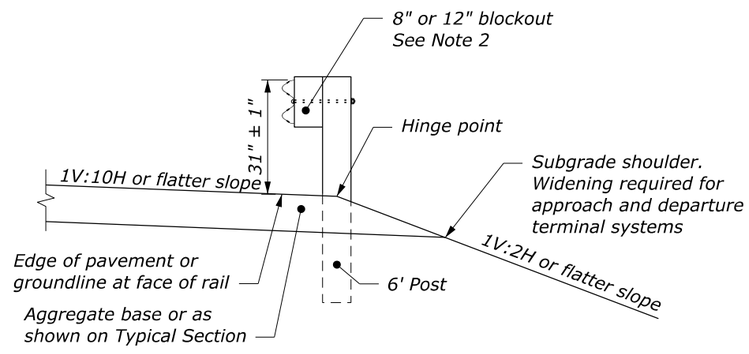
FLEXIBLE DELINEATOR GUARDRAIL MOUNT

NOTE:

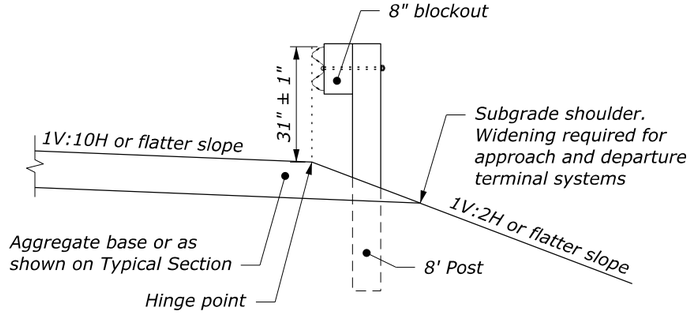
1. *When encountering impenetrable material, one post may be omitted in locations where the typical guardrail cross section includes 2-feet (min.) between the back of the guardrail post and the hinge point. For all other locations, see Section 617 and Standard 617-13 or 617-37.*
2. *Size of blockout shown elsewhere in the plans. Blockout may be wood, plastic, or composite material. Use consistent material throughout the length of guardrail run.*
3. *Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.*
4. *Install a flexible hinged delineator every fourth post. Fasten delineator to the web of the steel post using either an adhesive or mechanical means according to the manufacturer's recommendations.*



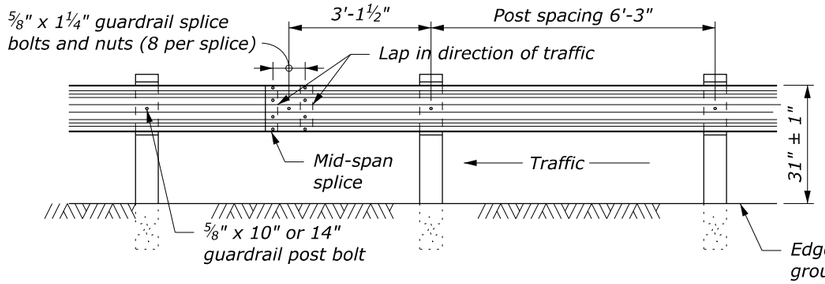
TYPICAL GUARDRAIL CROSS SECTION
6' POST, 8" OR 12" BLOCKOUT



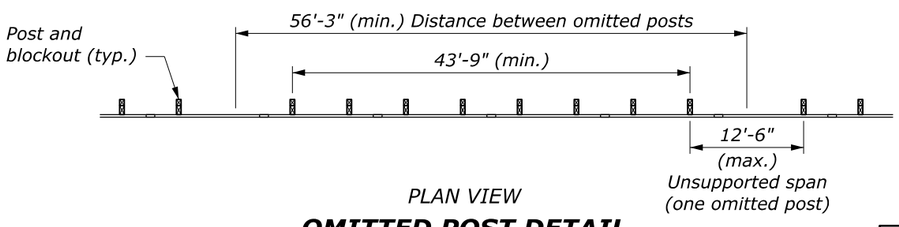
TYPICAL GUARDRAIL CROSS SECTION
6' POST CENTERED ON HINGE, 8" OR 12" BLOCKOUT



TYPICAL GUARDRAIL CROSS SECTION
8' POST ON SLOPE, 8" BLOCKOUT



TYPICAL GUARDRAIL ELEVATION



PLAN VIEW

OMITTED POST DETAIL
See Note 1

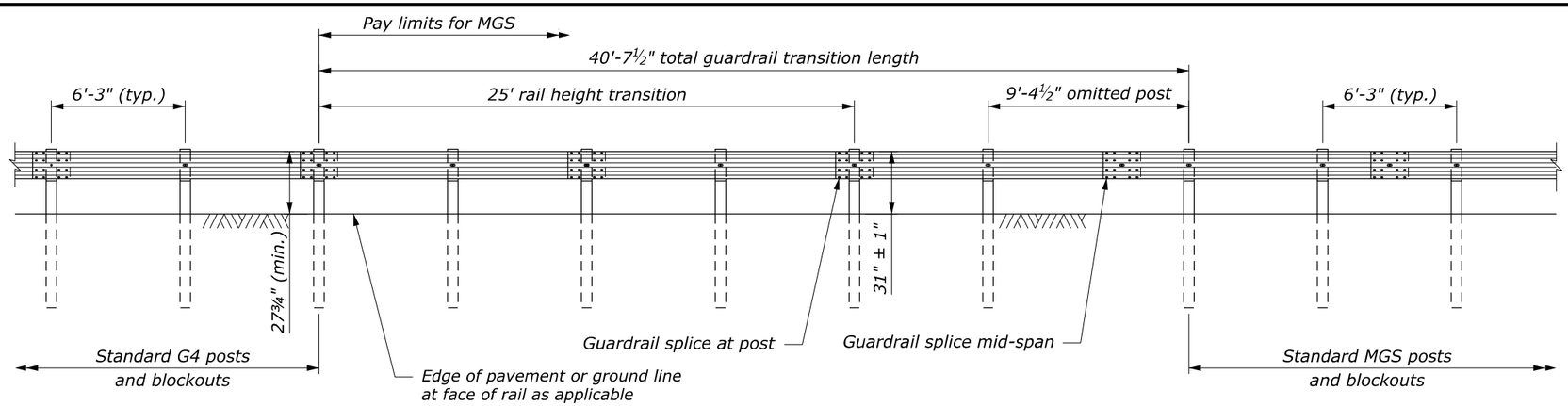
NO SCALE

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

MGS W-BEAM GUARDRAIL STEEL POSTS

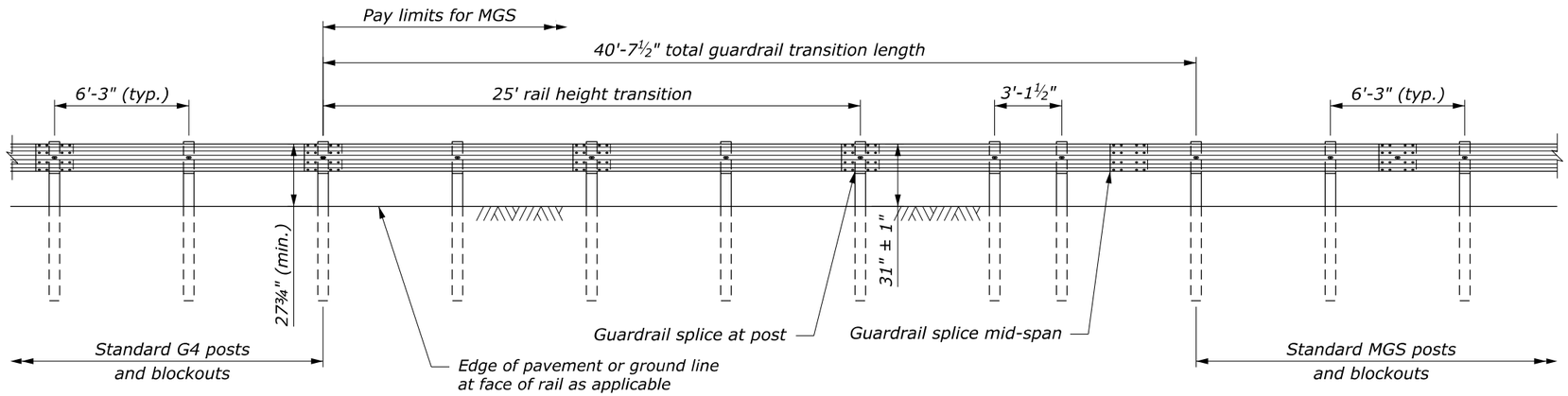
FLH STANDARD
617-32
SPECIFICATION
FP-24
APPROVED FOR USE
2/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S27



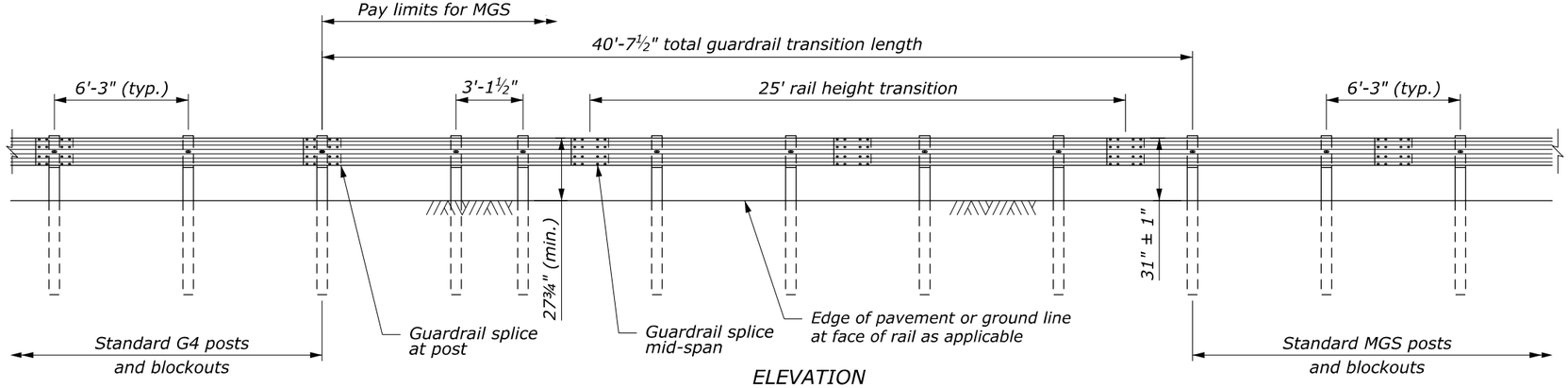
ELEVATION

OMITTED POST OPTION



ELEVATION

HALF-POST SPACING IN MGS OPTION



ELEVATION

HALF-POST SPACING IN G4 OPTION

NO SCALE

NOTE:

1. *Unless otherwise specified, use any of the options shown as required to meet project-specific conditions.*
2. *Use consistent guardrail post material throughout the length of the guardrail run.*
3. *If applicable, conversion of the 8-inch wide G4 blockout to the 12-inch wide MGS blockout may occur anywhere within the length of the G4 to MGS transition shown on this sheet.*
4. *See Standards 617-10, 617-11, 617-31, or 617-32 for other assembly details.*

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

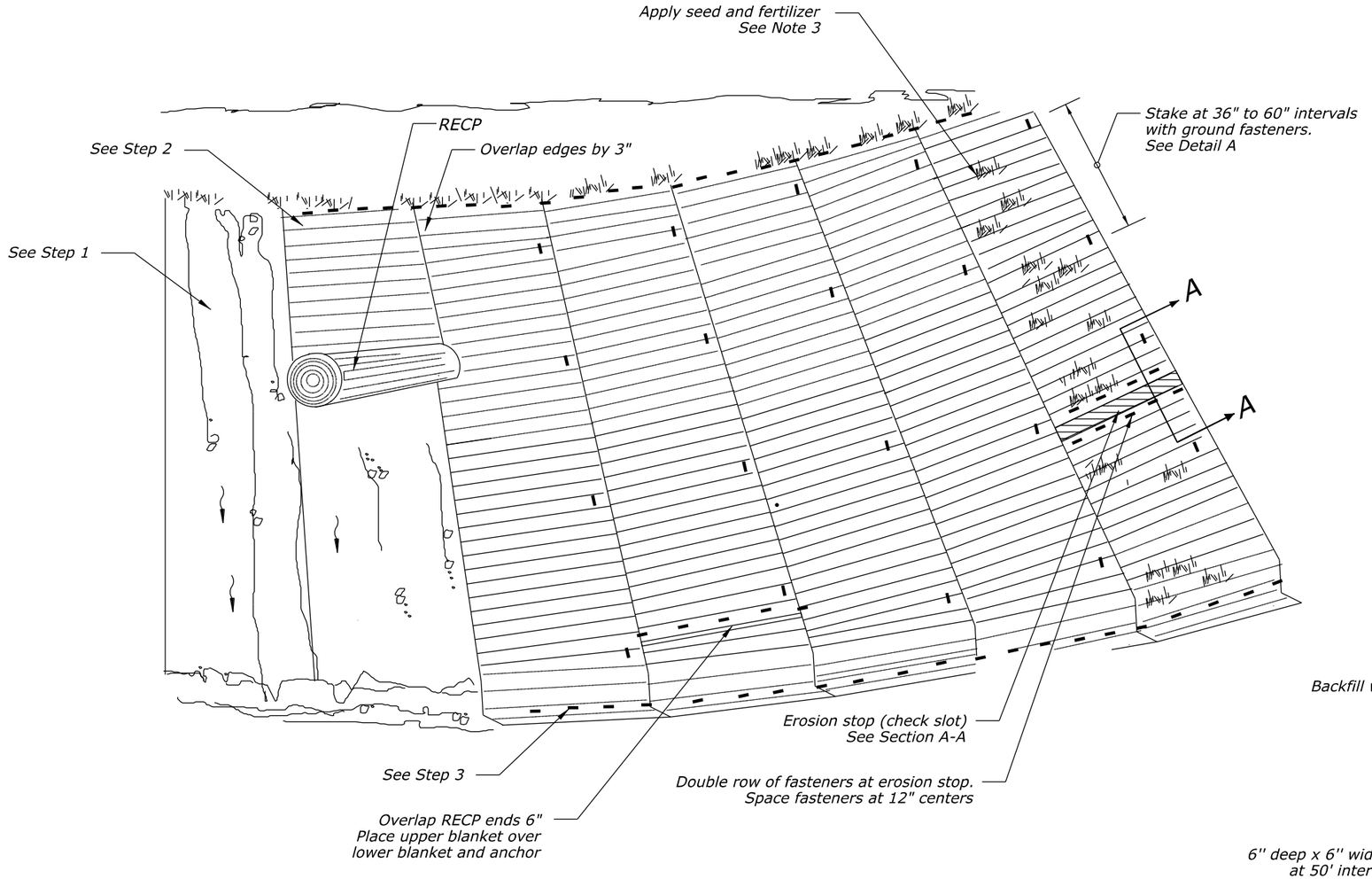
G4 TO MGS W-BEAM GUARDRAIL TRANSITION

FLH STANDARD	617-39
SPECIFICATION	FP-24
APPROVED FOR USE	1/2024

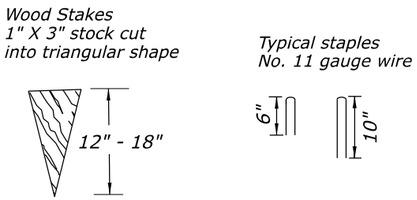
PROJECT	SHEET NUMBER
VI 38(2) C2	S28

NOTES:

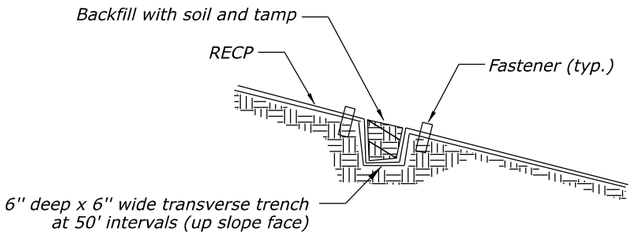
1. When required, place topsoil before installing RECP according to Section 624.
2. When required, apply turf establishment according to Section 625.
3. Apply seed and fertilizer as recommended by the manufacturer before placing RECP.



SLOPE STABILIZATION WITH RECP



DETAIL A
TYPICAL GROUND FASTENERS



SECTION A-A
EROSION STOP (CHECK SLOT)

INSTALLATION PROCEDURES:

Install Rolled Erosion Control Product (RECP) along the slopes as follows:

Step 1: Grade, smooth, and compact slope. Remove rocks, trash, and other material which will prevent the RECP from laying flush with the ground. Do not track slope face.

Step 2: Unroll and lay RECP out down slope face (in the direction of flow). Anchor at top of slope. Do not stretch RECP.

Step 3: Secure RECP with wood or metal fasteners. See Detail A.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E629-01
SLOPE STABILIZATION WITH ROLLED EROSION CONTROL PRODUCT (RECP)	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 05/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S29

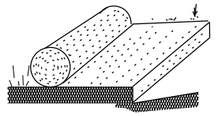
NOTES:

1. When required, place topsoil before installing RECP according to Section 624.
2. When required, apply turf establishment according to Section 625.
3. Apply seed and fertilizer as recommended by the manufacturer before placing RECP.

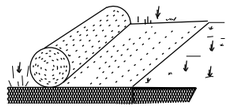
INSTALLATION PROCEDURES

Install Rolled Erosion Control Product (RECP) along the bottom of the ditch and up the side slopes as follows:

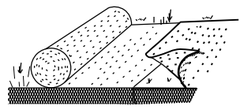
Step 1: Bury the top end of the RECP mat strip in a trench 6 inches or more deep.



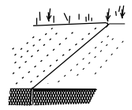
Step 2: Tamp the trench full of soil. Secure with row of fasteners spaced at 6-inch centers and placed 4 inches down from the trench.

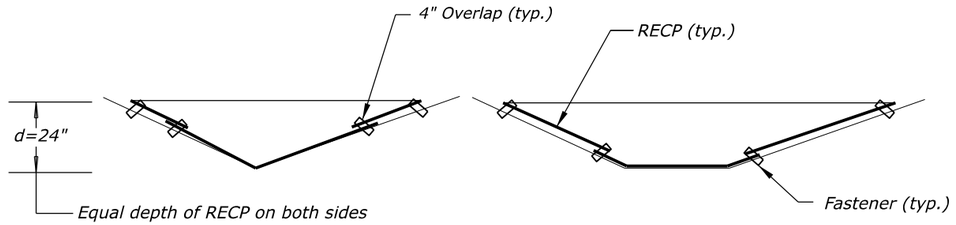


Step 3: Overlap by burying the upper end of lower RCEP mat strip as in step 1 and 2. Overlap end of top strip 4 inches and fasten.

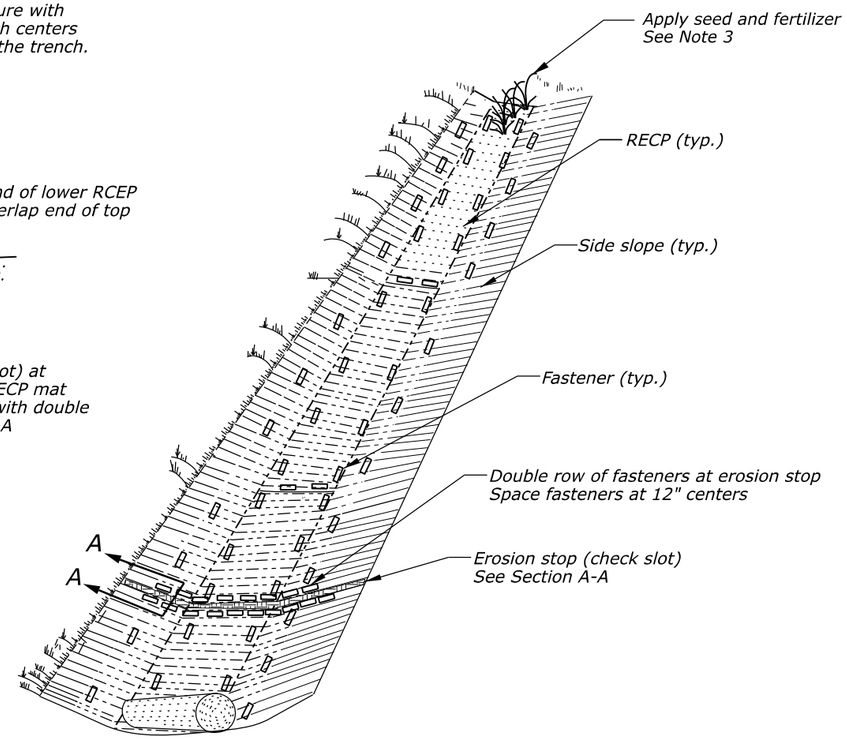


Step 4: Construct erosion stop (check slot) at 50-foot intervals. Bury fold of RECP mat in slit trench and tamp. Fasten with double row of fasteners. See Section A-A

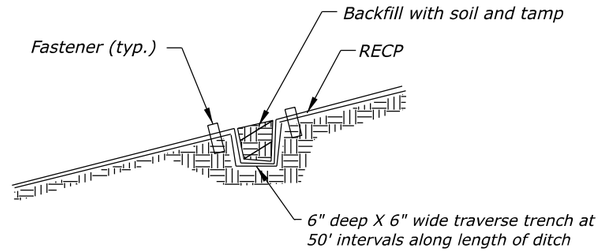




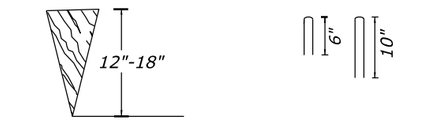
CROSS SECTION THROUGH V AND FLAT BOTTOM DITCHES



DITCH STABILIZATION WITH RECP



SECTION A-A
EROSION STOP (CHECK SLOT)

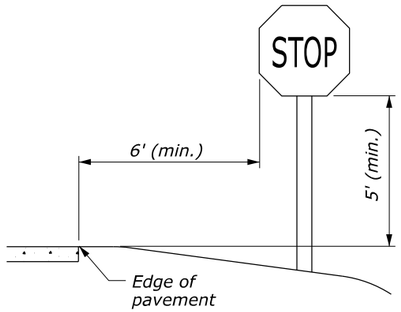


DETAIL A
TYPICAL GROUND FASTENERS

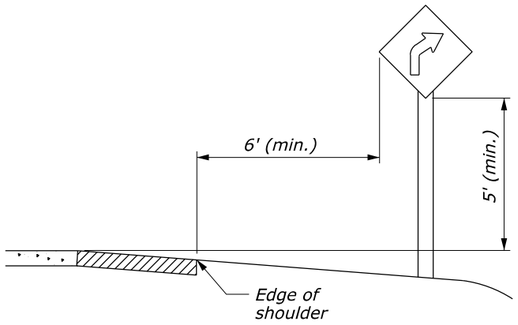
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E629-02
DITCH STABILIZATION WITH ROLLED EROSION CONTROL PRODUCT (RECP)	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 05/2024

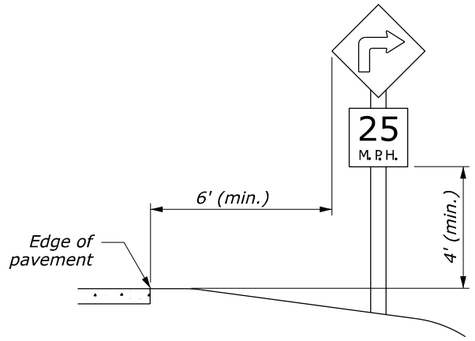
PROJECT	SHEET NUMBER
VI 38(2) C2	S30



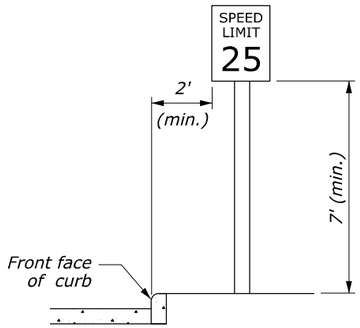
WITHOUT SHOULDER



WITH SHOULDER

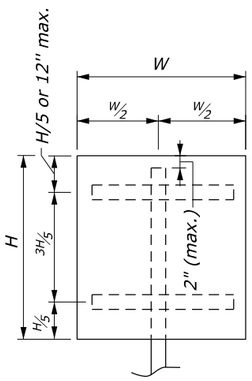


WITH ADVISORY SPEED PLAQUE

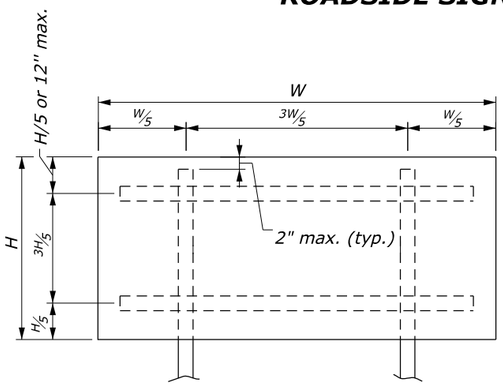


ROADSIDE SIGN IN BUSINESS OR RESIDENTIAL DISTRICT

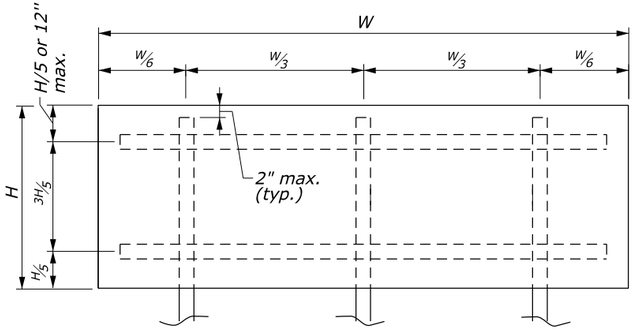
ROADSIDE SIGN IN RURAL DISTRICT



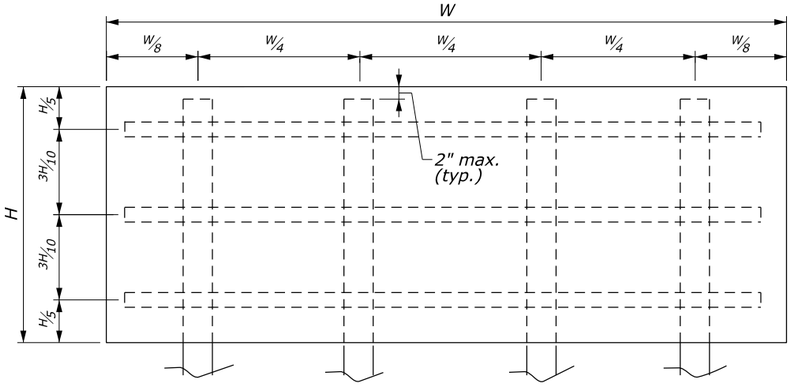
SINGLE POST



DOUBLE POST



TRIPLE POST



QUADRUPLE POST

NOTES:

1. Locate and set sign height according to the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.
2. For U-channel, square tubular, and corrosion resistant steel posts for which the sign panel area is 10 square feet or less but W is over 4 feet, use double posts.
3. For square tabular steel double posts for which the sign panel area is equal to 24 square feet, use slip base according to manufacturer's recommendations.
4. Refer to Detail E633-02 for breakaway support details for corrosion resistant steel posts.
5. Refer to Detail E633-03 for breakaway support details for wood, U-channel steel and square tubular steel posts.
6. Refer to Detail E633-04 for bracing details for wood, U-channel steel and square tubular steel posts.
7. Refer to Section 2A.18 of the MUTCD, latest edition, for additional information.

POST SIZE TABLE

POST TYPE	POST SIZE	MAXIMUM SIGN AREA (SQFT)			
		SINGLE POST	DOUBLE POST	TRIPLE POST	QUADRUPLE POST
Wood	4" x 4"	10	20		
	4" x 6"	15	35	45	60
	6" x 6"	20	50	75	100
U-Channel Steel		10*	24	30	
Square Tubular Steel	2" 12 ga.	10*	16		
	2" 12 ga.	10*	24**		
Corrosion Resistant Steel	2" x 2" 10 ga. Class B	10*	24		

* See Note 2
** See Note 3

NO SCALE

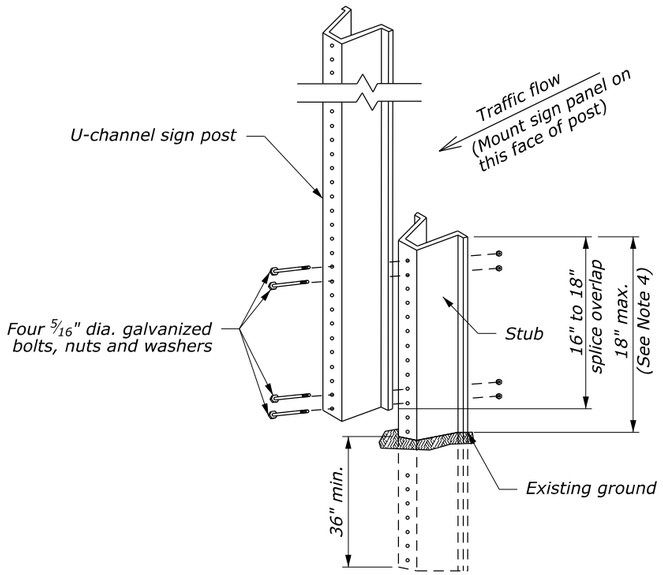
U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

SIGN STRUCTURES

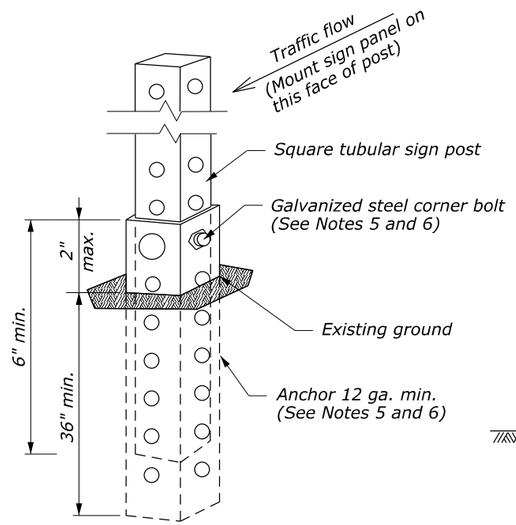
EFLHD DETAIL	E633-01
SPECIFICATION	FP-24, FP-14
APPROVED FOR USE	06/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S31

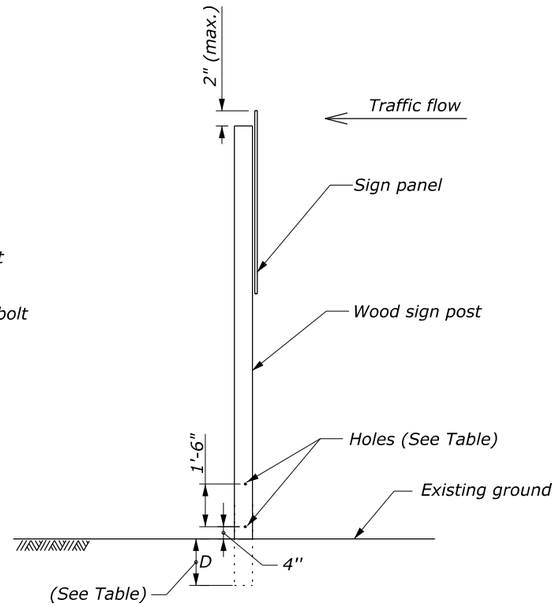
WOOD POST DATA TABLE		
POST SIZE	HOLE DIAMETER	(D) (MIN.)
4'' x 4''	Not Required	3'
4'' x 6''	1.5''	4'
6'' x 6''	2''	4'



U-CHANNEL STEEL POST



SQUARE TUBULAR STEEL POST



WOOD POST

BREAKAWAY SIGN SUPPORT

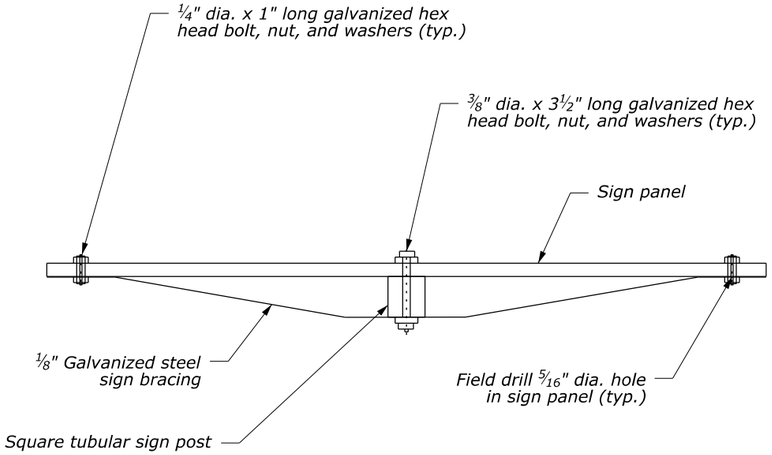
NOTES:

1. Breakaway sign support is not required for signs placed behind protective barriers.
2. Signs requiring 6- by 6-inch wood posts are considered to be non-breakaway if multiple posts are required and posts cannot be spaced a minimum of 7 feet apart.
3. Place non-breakaway signs outside the clear zone or shield with approved barrier. Do not place holes in posts of non-breakaway signs.
4. Position splice overlap on U-channel steel posts entirely between the ground line and 18 inches above the ground line. Do not place more than one splice per post.
5. Attach the square tubular steel post to the anchor with a corner bolt according to the manufacturer's recommendations. Size the anchor according to the manufacturer's recommendations to accept the post size specified.
6. Maintain the post assembly in a plumb position.
7. For sign punching details, see the blank standards in the "Standard Highway Signs and Markings" as specified in the latest edition of the MUTCD.
8. Refer to Detail E633-01 for sign mounting details.
9. Refer to Detail E633-04 for sign bracing details.
10. Refer to Section 2A.18 of the MUTCD, latest edition, for additional information.

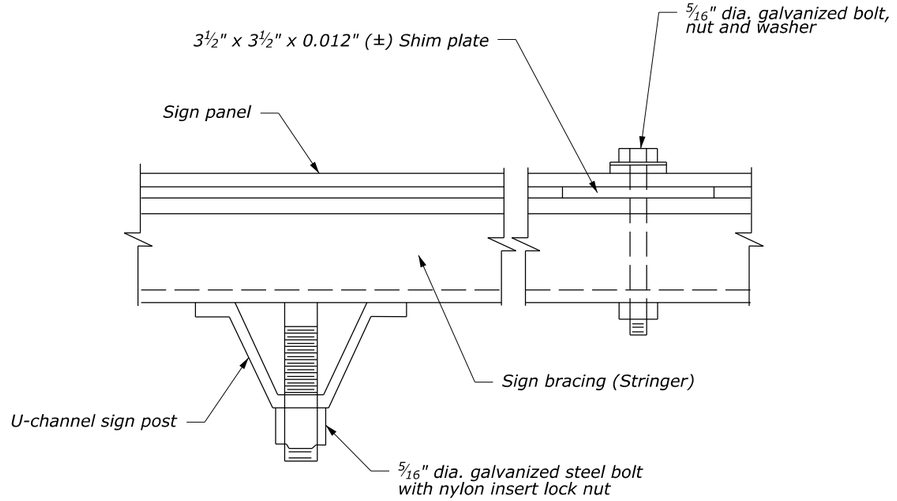
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E633-03
BREAKAWAY SIGN SUPPORT WOOD AND STEEL POSTS	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 06/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S32



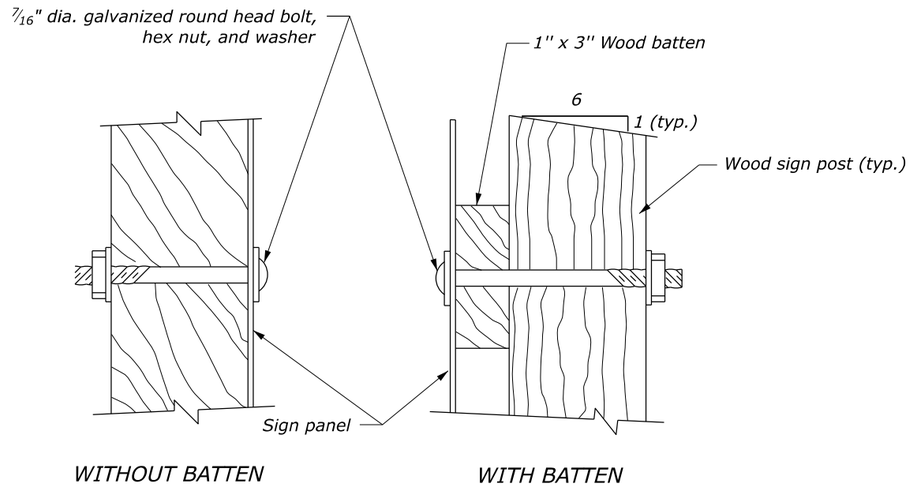
SQUARE TUBULAR STEEL POST



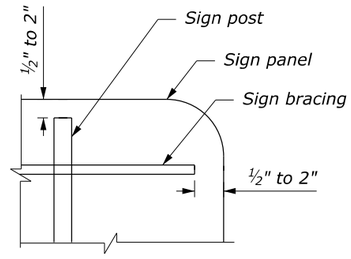
U-CHANNEL STEEL POST

NOTES:

1. Install sign braces on signs with widths of 48 inches or greater. Install sign braces on signs with widths of 36 inches when specified or as directed.
2. For sign punching details, see the blank standards in the "Standard Highway Signs and Markings" as specified in the latest edition of the MUTCD.
3. Use wood battens bolted to post at vertical spacings not to exceed 30 inches.
4. Use neoprene or nylon washers between the sign panel's retroreflective sheeting and the steel washer.
5. Refer to Detail E633-01 for sign mounting details.
6. Refer to Section 2A.18 of the MUTCD, latest edition, for additional information.



WOOD POST

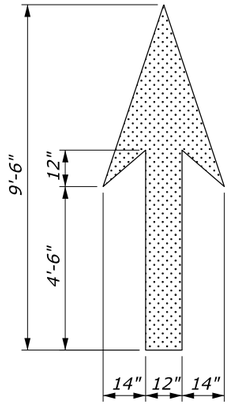


BRACING INSTALLATION TOLERANCES

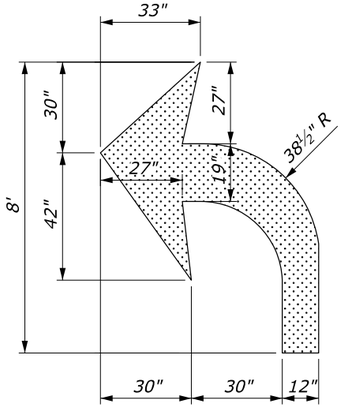
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E633-04
SIGN BRACING	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 06/2024

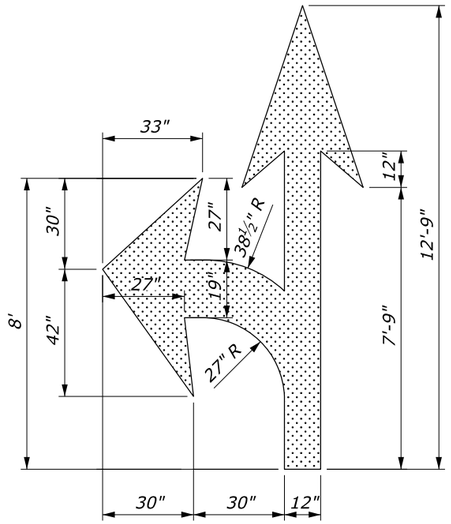
PROJECT	SHEET NUMBER
VI 38(2) C2	S33



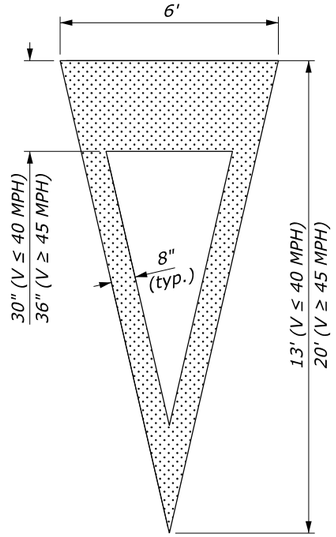
STRAIGHT ARROW SYMBOL



TURN ARROW SYMBOL



STRAIGHT/TURN ARROW COMBINATION SYMBOL

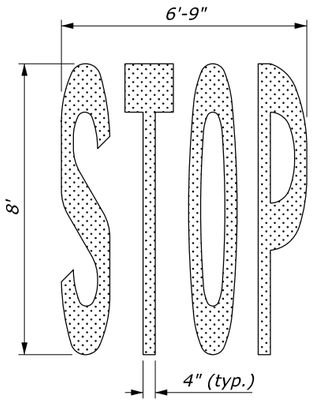


YIELD AHEAD TRIANGLE SYMBOL

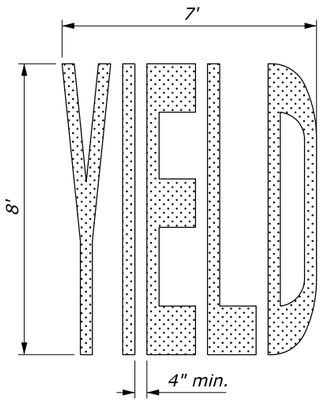
NOTES:

1. Place pavement word and symbol markings in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.
2. Place all letters, numerals, and symbols in accordance with the "Standard Highway Signs", latest edition.
3. Provide Accessibility Symbol marking as indicated in the plans or directed otherwise by the CO in one of the following configurations:

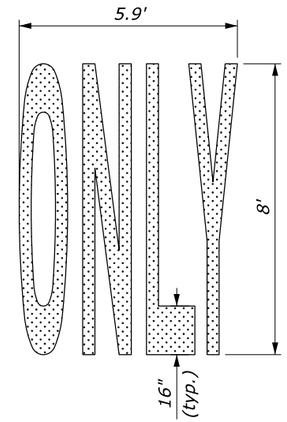
   (a) w/ Symbol only; or
   (b) w/ Symbol, blue background, and white border



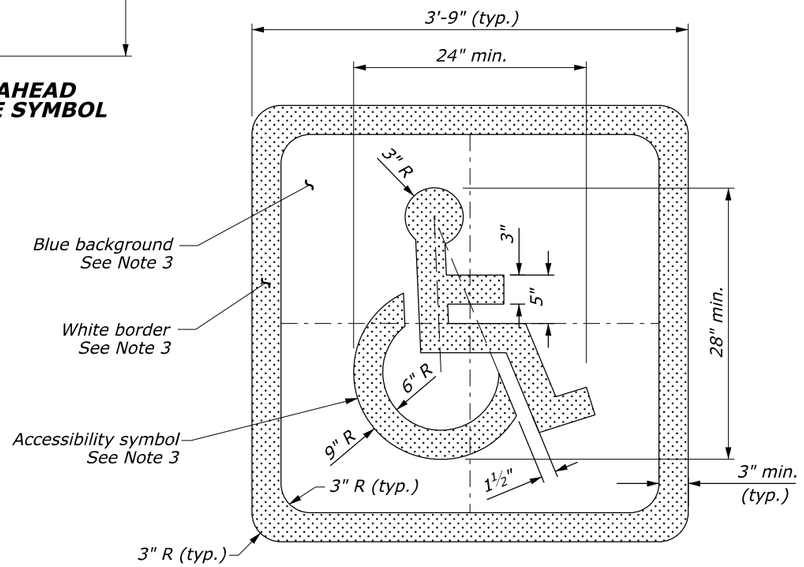
"STOP" WORD MESSAGE

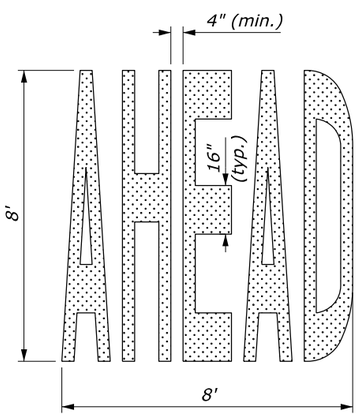


"YIELD" WORD MESSAGE

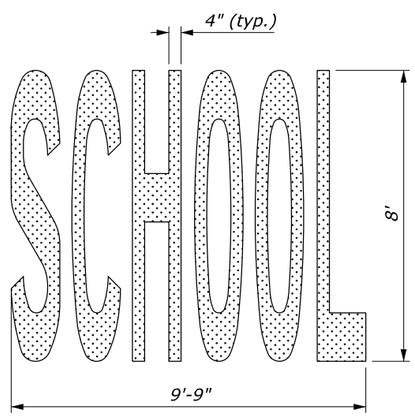


"ONLY" WORD MESSAGE





"AHEAD" WORD MESSAGE



"SCHOOL" WORD MESSAGE

PAVEMENT MARKING AREAS	
TYPE	SQFT
Accessibility Symbol:	--
w/ Symbol only	2
w/ Symbol, blue background, and white border	16
Straight Arrow Symbol	12
Straight/Turn Arrow Combination Symbol	26
Turn Arrow Symbol	16
Yield Ahead Triangle Symbol (V<45 mph)	26
Yield Ahead Triangle Symbol (V≥45 mph)	37
"AHEAD" Word Message Marking	30
"ONLY" Word Message Marking	21
"SCHOOL" Word Message Marking	33
"STOP" Word Message Marking	22
"YIELD" Word Message Marking	24

NO SCALE

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

PAVEMENT MARKINGS SYMBOLS AND WORDS

EFLHD DETAIL
E634-01

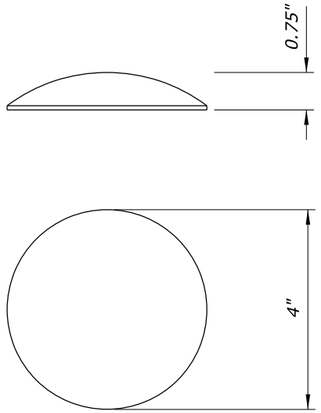
SPECIFICATION
FP-24, FP-14

APPROVED FOR USE
06/2024

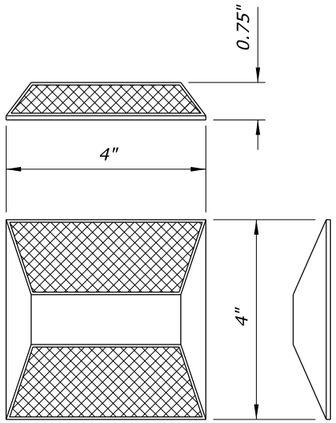
PROJECT	SHEET NUMBER
VI 38(2) C2	S34

NOTES:

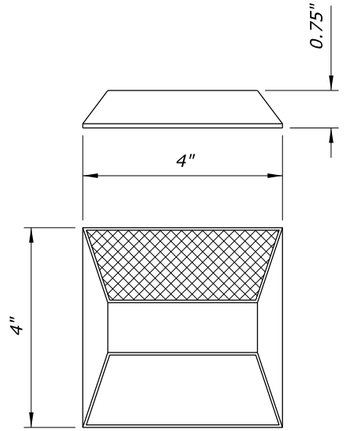
1. *Provide reflective markers with either clear (white), yellow or red colors as specified.*
2. *Ensure the shell of the marker is made of one color or a combination of colors the same as the reflector.*



NON-REFLECTIVE

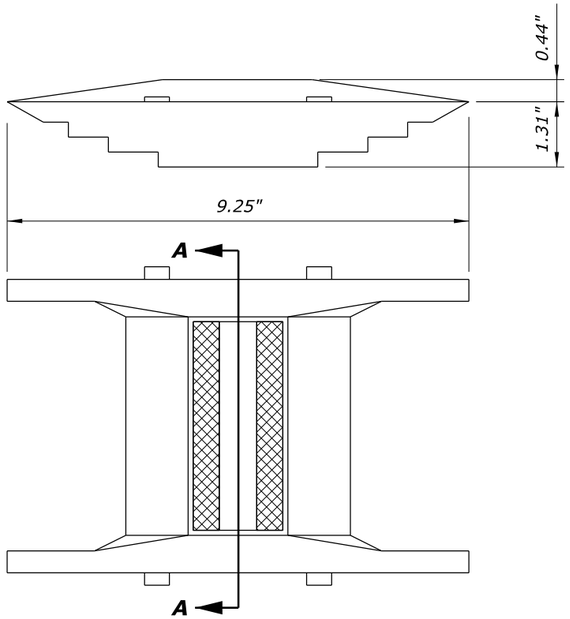


BI-DIRECTIONAL

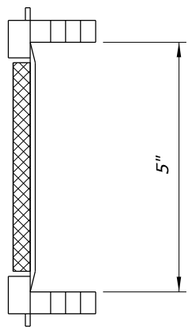


MONO-DIRECTIONAL

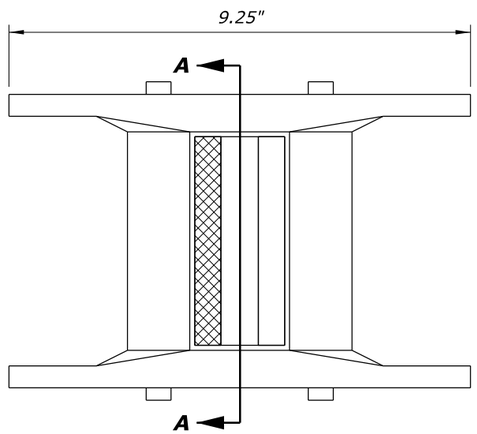
NON-PLOWABLE PAVEMENT MARKERS



BI-DIRECTIONAL



SECTION A-A



MONO-DIRECTIONAL

PLOWABLE PAVEMENT MARKERS

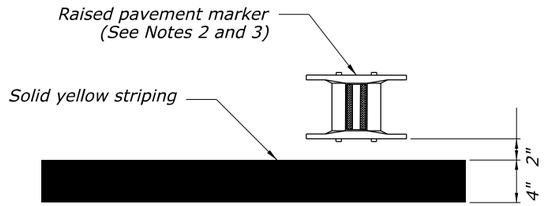
LEGEND:

Reflective material

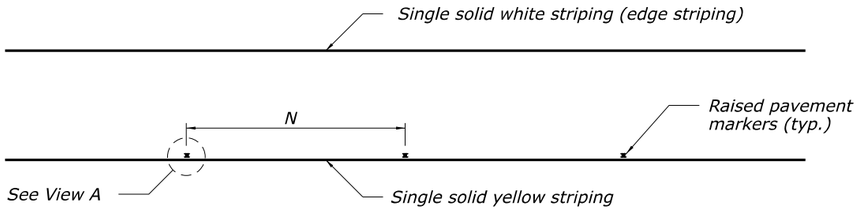
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	EFLHD DETAIL E634-02
RAISED PAVEMENT MARKERS	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 06/2024

PROJECT	SHEET NUMBER
VI 38(2) C2	S35



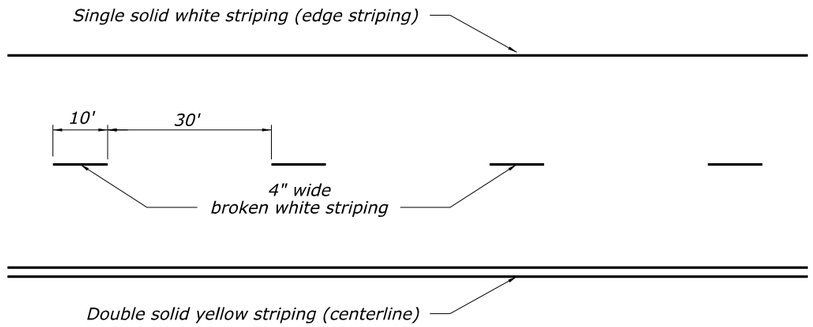
VIEW A



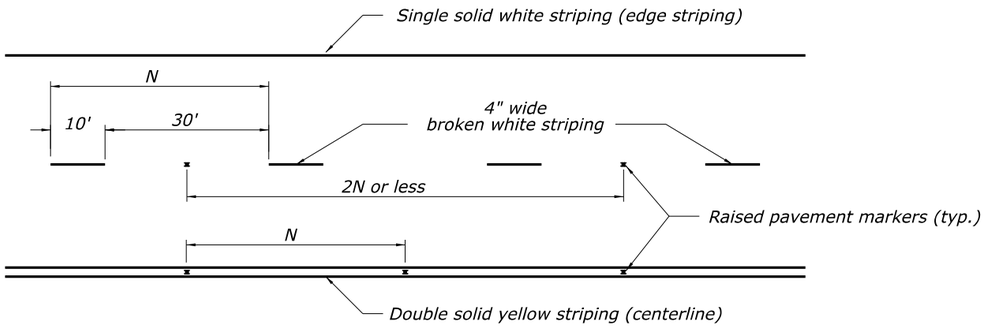
**SINGLE SOLID YELLOW STRIPING
WITH RAISED PAVEMENT MARKERS**

NOTES:

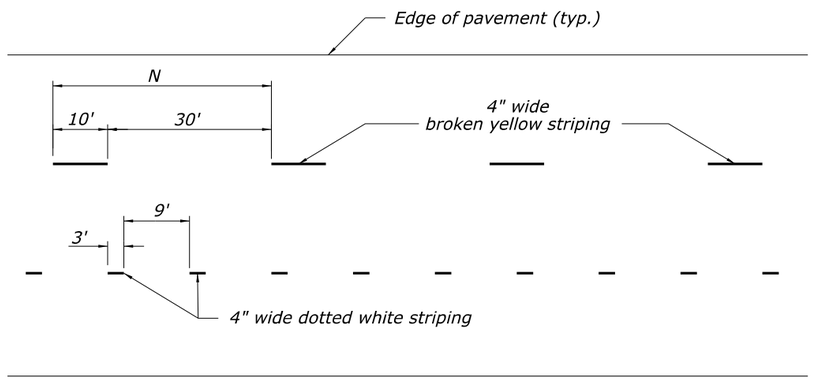
1. Install striping in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.
2. When raised pavement markers are required, space and install in accordance with the MUTCD and as shown in this Detail or as directed.
3. When raised pavement markers are required, see Detail E634-02.



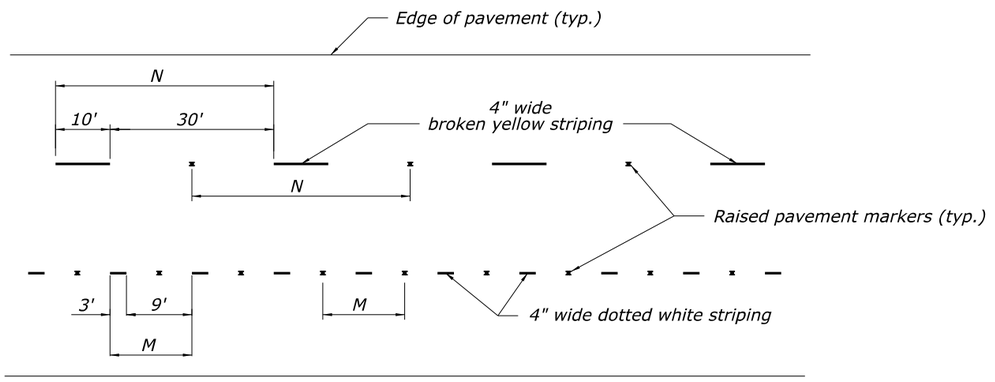
**BROKEN SINGLE WHITE AND
DOUBLE SOLID YELLOW STRIPING**



**BROKEN SINGLE WHITE AND
DOUBLE SOLID YELLOW STRIPING
WITH RAISED PAVEMENT MARKERS**



**BROKEN SINGLE YELLOW AND
DOTTED WHITE STRIPING**



**BROKEN SINGLE YELLOW AND
DOTTED WHITE STRIPING
WITH RAISED PAVEMENT MARKERS**

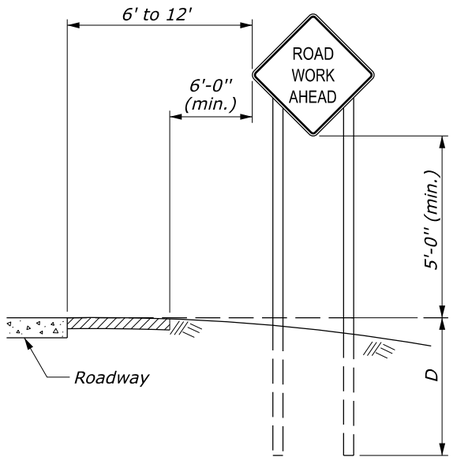
NO SCALE

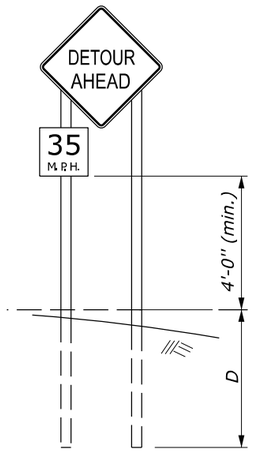
U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

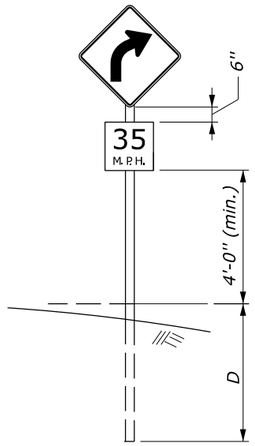
PAVEMENT MARKINGS WITH AND WITHOUT RAISED PAVEMENT MARKERS

EFLHD DETAIL
E634-03
SPECIFICATION
FP-24, FP-14
APPROVED FOR USE
06/2024

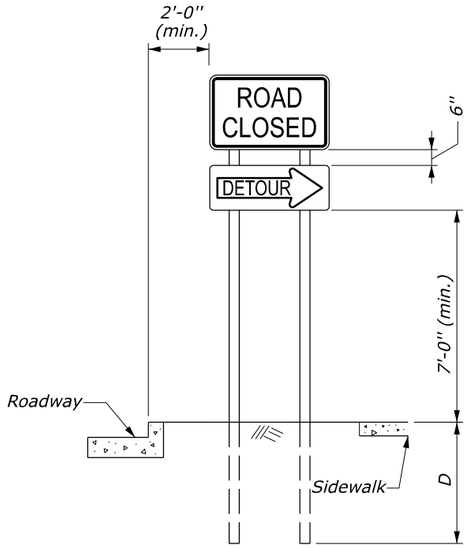
PROJECT	SHEET NUMBER
VI 38(2) C2	S36







RURAL AREA

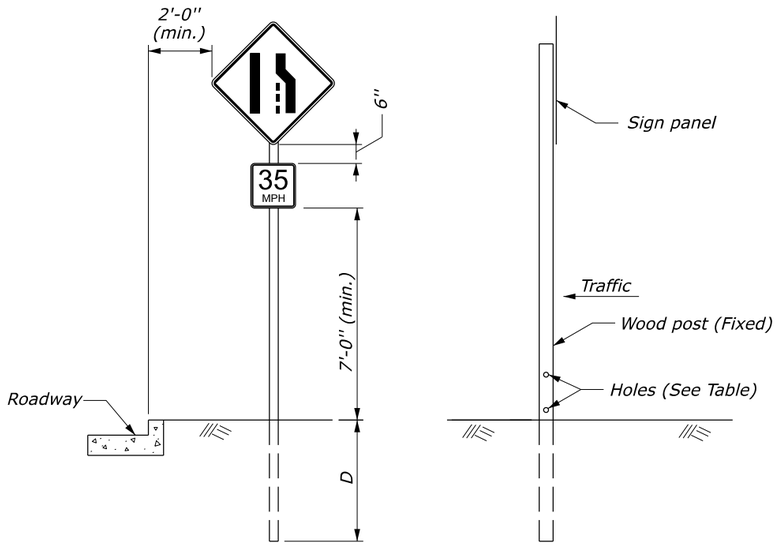


URBAN AREA

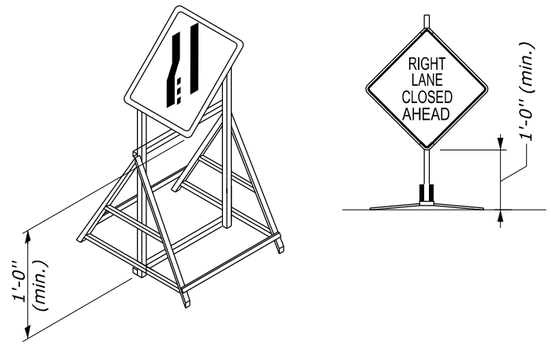
FIXED ROADWAY SIGNS

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	X	X
4" x 6"	4'	1.5"	X	35	50	70
6" x 6"	5'	2"	X	50	75	100
6" x 8"	5'	3"	X	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

PROJECT	SHEET NUMBER
VI 38(2) C2	S37

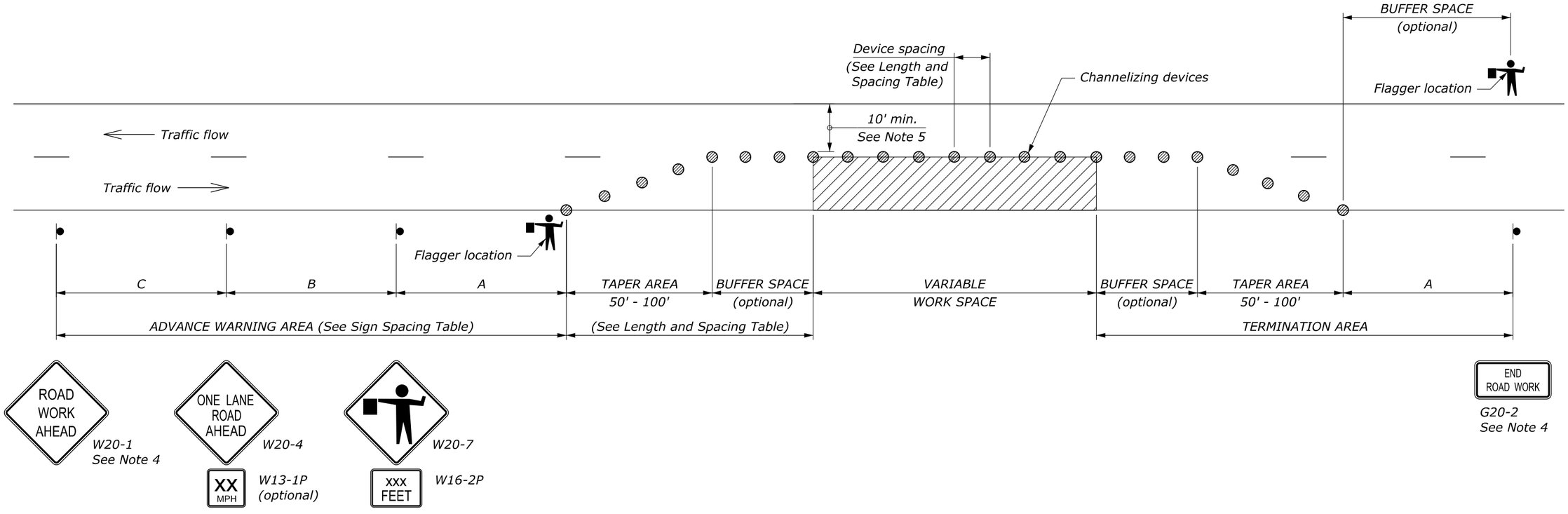
LENGTH AND SPACING TABLE				
APPROACH SPEED* MPH	BUFFER SPACE LENGTH FEET	CHANNELIZING DEVICE SPACING IN FEET		
		TAPER AREA	BUFFER SPACE	WORK SPACE
20	115	20	40	40
25	155	20	50	50
30	200	20	60	60
35	250	20	70	70
40	305	20	80	80
45	360	20	90	90
50	425	20	100	100
55	495	20	110	110
60	570	20	120	120
65	645	20	130	130
70	730	20	140	140

* Approach speed based on the regulatory posted speed, not the advisory speed.

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. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved.
3. For pilot car operation, mount the PILOT CAR FOLLOW ME (G20-4) sign at a conspicuous location on the rear of vehicle. Prominently display the name of the Contractor on the pilot car.
4. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W20-1) and END ROAD WORK (G20-2) signs.
5. For project specific minimum width, refer to the Special Contract Requirements, Section 156.
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 635-6
TEMPORARY TRAFFIC CONTROL SINGLE LANE CLOSURE LAYOUT (WITH FLAGGERS)	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 2/2024

M:\PROJECTS\vfls\stthomas\nh38(2)_c2\Proj_Dev\CADD\Std-Det\S37 635-6 Single Lane Closure Layout w Flaggers.dgn [Std 635-6]
9 April 2025 9:16 AM

PROJECT	SHEET NUMBER
VI 38(2) C2	S38

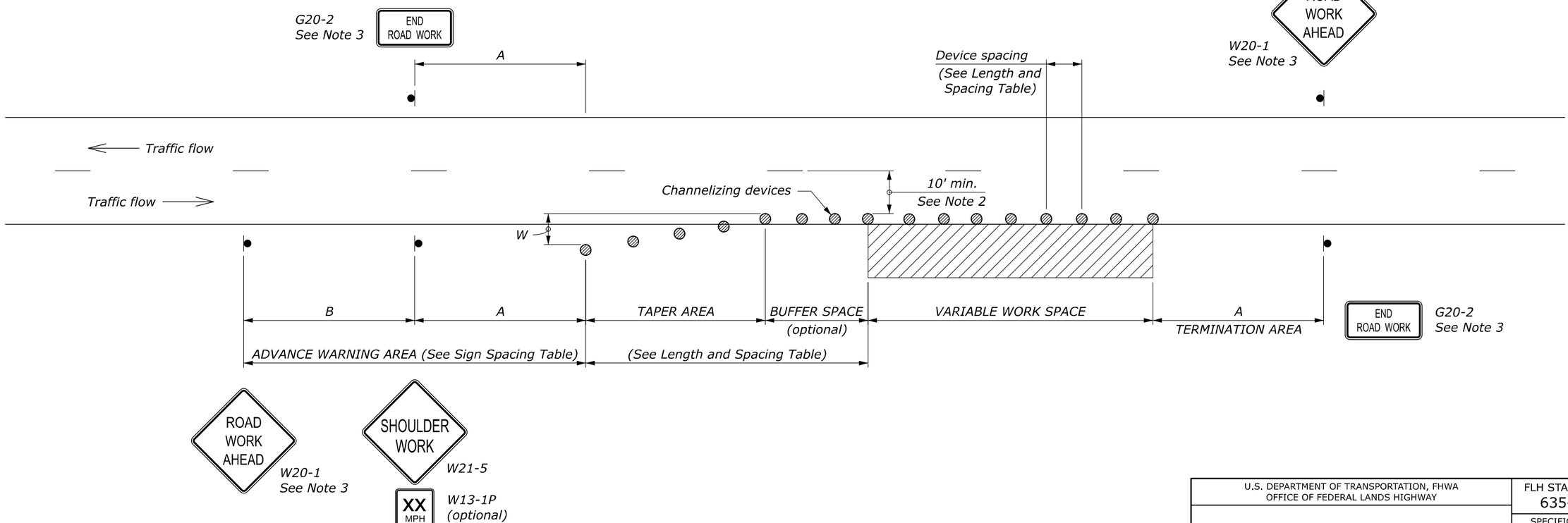
LENGTH AND SPACING TABLE					
APPROACH SPEED* MPH	MINIMUM TAPER LENGTH** FEET	BUFFER SPACE LENGTH FEET	CHANNELIZING DEVICE SPACING IN FEET		
			TAPER AREA	BUFFER SPACE	WORK SPACE
20	Shoulder taper formula:	115	20	40	40
25	$L = \frac{WS^2}{180}$ for S ≤ 40 mph	155	25	50	50
30		200	30	60	60
35	$L = \frac{WS}{3}$ for S ≥ 45 mph	250	35	70	70
40		305	40	80	80
45	Where:	360	45	90	90
50	L = Minimum length of taper	425	50	100	100
55	W = Width of offset in feet	495	55	110	110
60	S = Numerical value of posted speed limit or 85 percentile speed prior to work in miles per hour	570	60	120	120
65		645	65	130	130
70		730	70	140	140

* Approach speed based on the regulatory posted speed, not the advisory speed.
**Lengthen taper as needed to provide minimum of three channelizing devices in taper at required spacing.

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. Final location and spacing of devices may be changed to fit field conditions as approved.
2. For project specific minimum width, refer to Special Contract Requirements, Section 156.
3. If shoulder closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W20-1) and END ROAD WORK (G20-2) signs.
4. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 635-10
TEMPORARY TRAFFIC CONTROL SHOULDER CLOSURE LAYOUT	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 2/2024

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9 April 2025 9:16 AM

PROJECT	SHEET NUMBER
VI 38(2) C2	S39

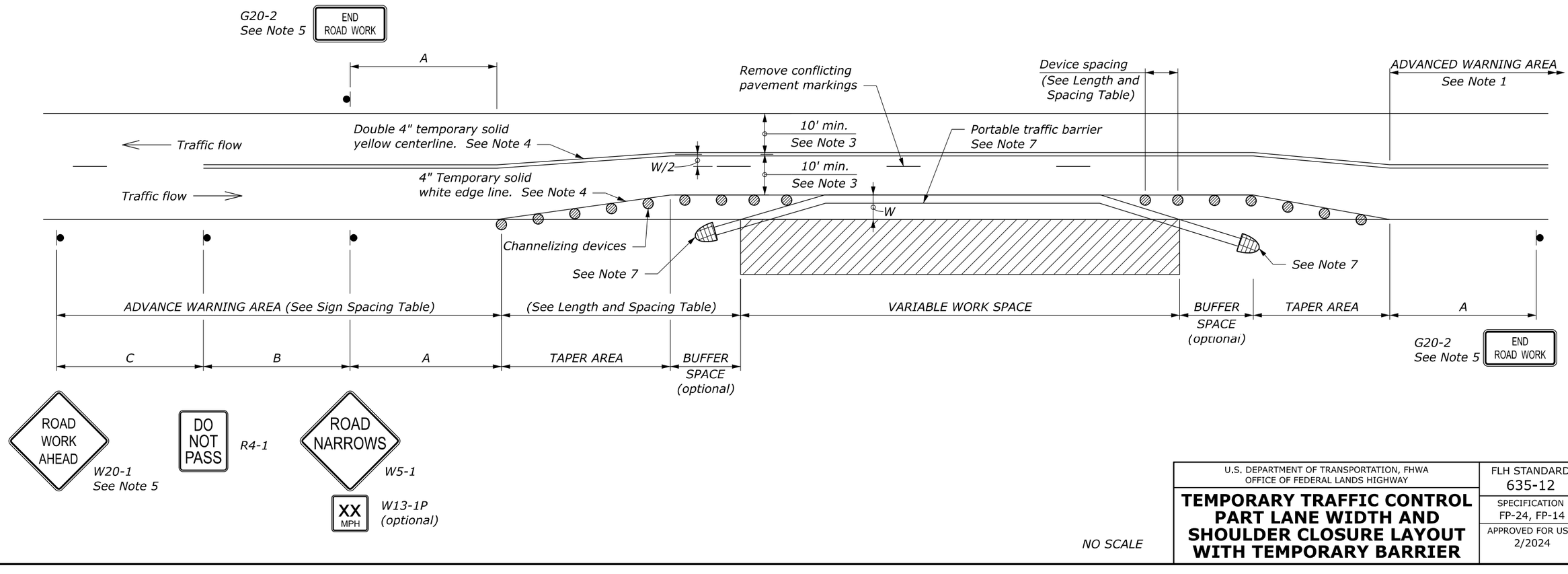
LENGTH AND SPACING TABLE						
APPROACH SPEED* MPH	MINIMUM TAPER LENGTH FEET	BUFFER SPACE LENGTH FEET	CHANNELIZING DEVICE SPACING IN FEET			WORK ZONE CLEAR ZONE WIDTH FEET
			TAPER AREA	BUFFER SPACE	WORK SPACE	
20	Shifting taper formula:	115	20	40	40	10
25	$L = \frac{WS^2}{120}$ for S ≤ 40 mph	155	25	50	50	10
30		200	30	60	60	10
35	$L = \frac{WS}{2}$ for S ≥ 45 mph	250	35	70	70	10
40		305	40	80	80	15
45	Where:	360	45	90	90	20
50	L = Minimum length of taper	425	50	100	100	20
55	W = Width of offset in feet	495	55	110	110	20
60	S = Numerical value of posted speed limit or 85 percentile speed prior to work in miles per hour	570	60	120	120	30
65		645	65	130	130	30
70		730	70	140	140	30

* Approach speed based on the regulatory posted speed, not the advisory speed.

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. Signs are shown for one direction of travel only. Place signs similar to those depicted for the opposite direction of travel.
2. Final location and spacing of devices may be changed to fit field conditions as approved.
3. For project specific minimum width, refer to Special Contract Requirements, Section 156.
4. If the roadway surface is paved, install temporary pavement markings. If nearest no-passing zone is within 400 ft, extend markings to connect zones.
5. If closure is completely within the project limits, eliminate the ROAD WORK AHEAD (W20-1) and END ROAD WORK (G20-2) signs.
6. Install PASS WITH CARE sign (R4-2) at ends of no-passing zone if directed.
7. Place the barrier according to the AASHTO Roadside Design Guide. Terminate barrier ends outside the work zone clear zone or protect the barrier ends with a crash cushion. Include reflectors on barrier at 25 ft intervals.
8. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



NO SCALE

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

TEMPORARY TRAFFIC CONTROL PART LANE WIDTH AND SHOULDER CLOSURE LAYOUT WITH TEMPORARY BARRIER

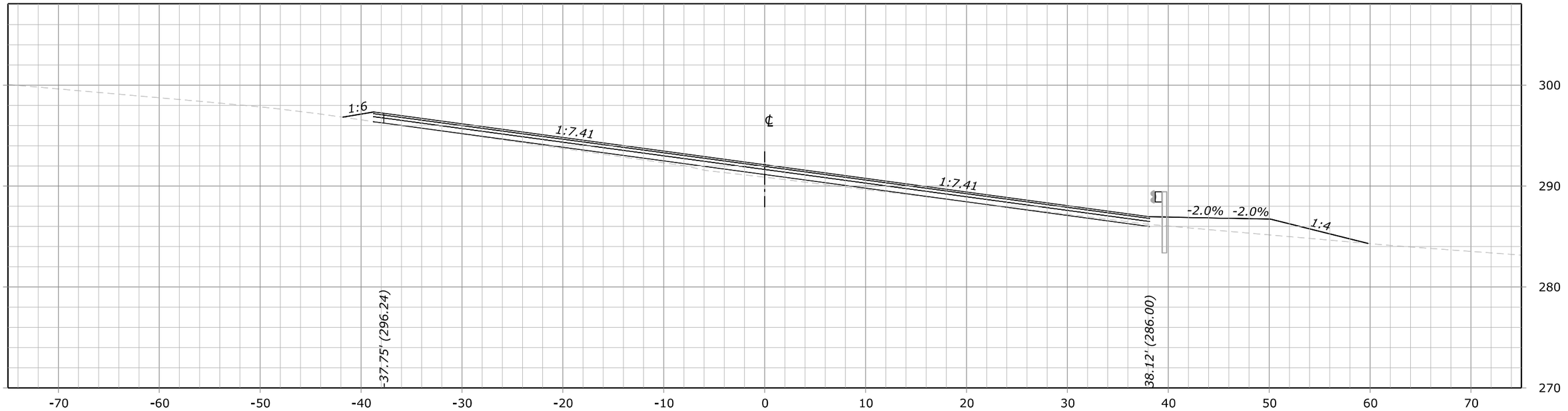
FLH STANDARD 635-12

SPECIFICATION FP-24, FP-14

APPROVED FOR USE 2/2024

M:\PROJECTS\vlls\sthomas\mh38(2)_c2\Proj_Dev\CADD\Std-Det\S39 635-12 Part Lane Width and Shoulder Closure Layout.dgn [Std 635-12]
9 April 2025 9:17 AM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	T01



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Subgrade = 291.15
Original Grnd = 290.79

NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTIONS

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

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25 April 2025 1:45 PM

STATE	PROJECT	SHEET NUMBER
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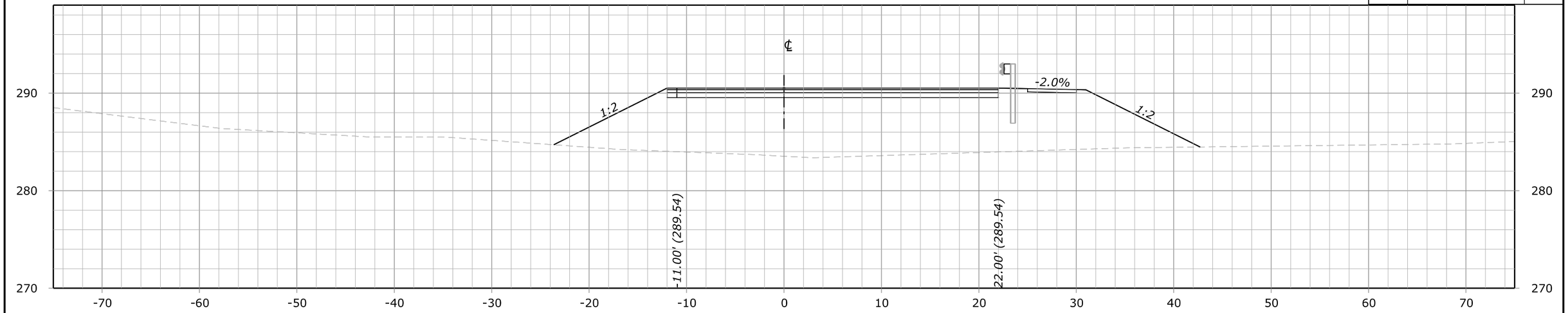

31+00.00
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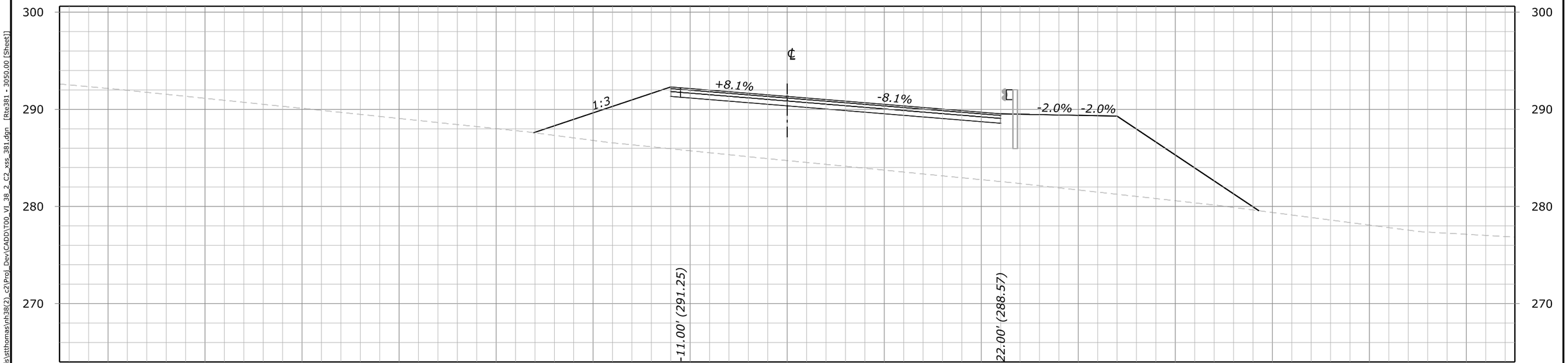

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25 April 2025 1:45 PM

NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTIONS

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

STATE	PROJECT	SHEET NUMBER
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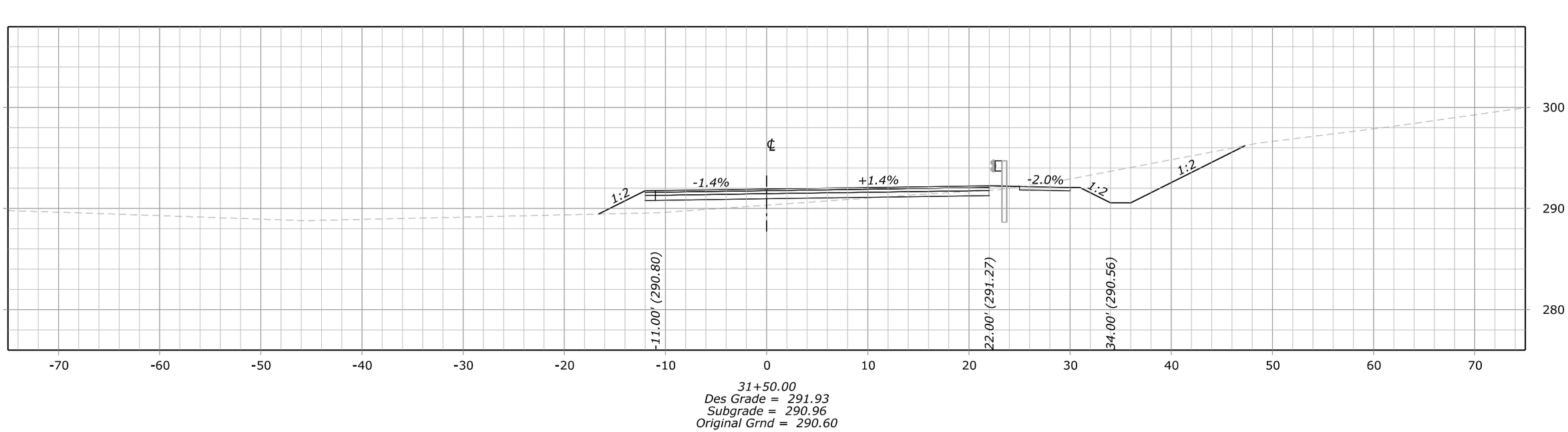

31+50.00
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Subgrade = 290.96
Original Grnd = 290.60

NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTIONS

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

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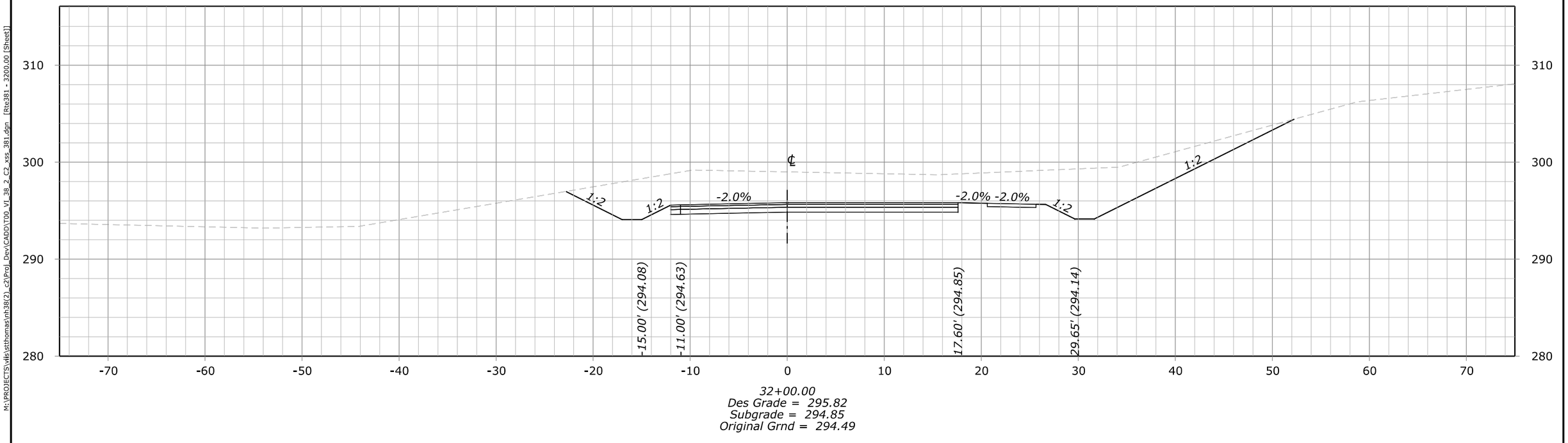
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	T04



32+00.00
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Subgrade = 294.85
Original Grnd = 294.49

NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTIONS

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

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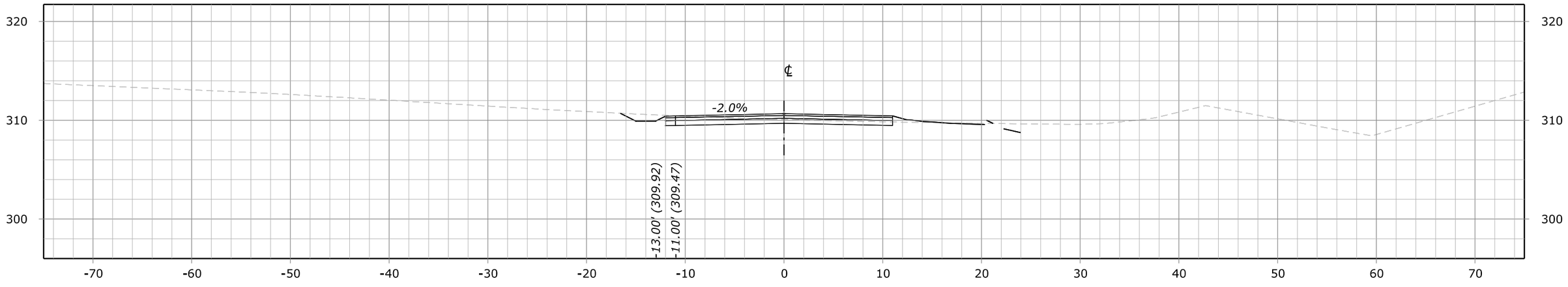
STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	T05



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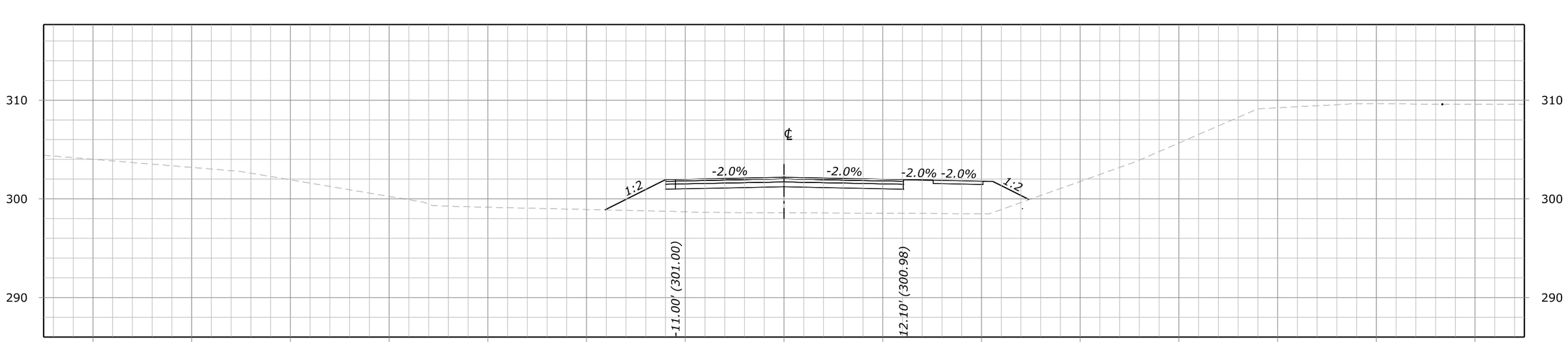
Subgrade = 309.69
Original Grnd = 309.33



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25 April 2025 1:27 PM

NO.	DATE	BY	REVISIONS

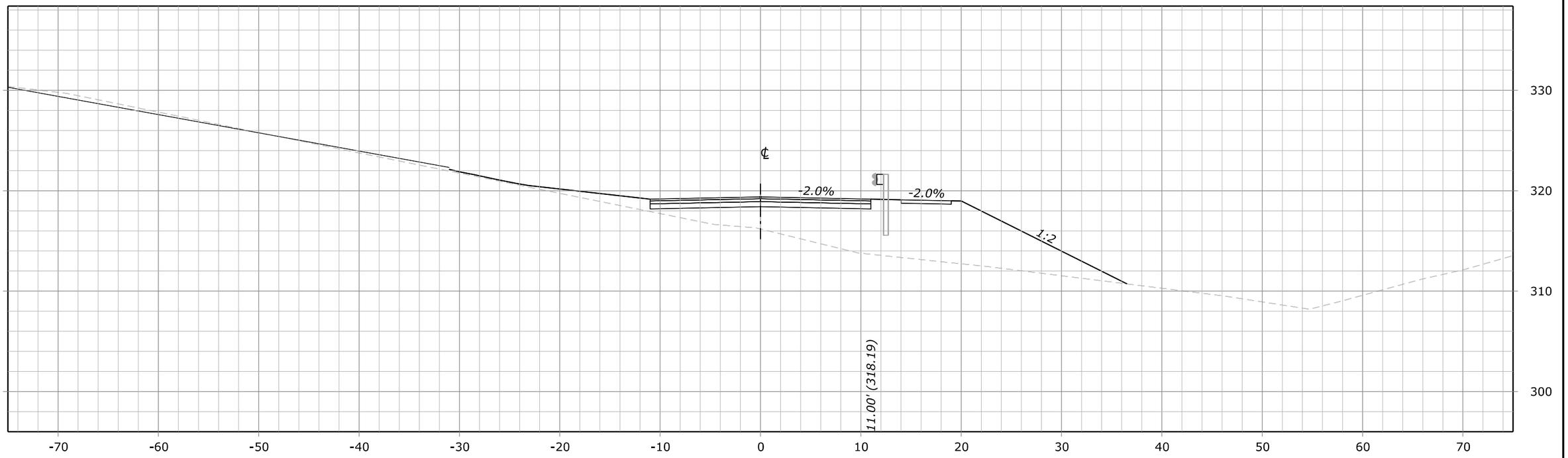
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTIONS

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	T06



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8 April 2025 10:50 AM

NO.	DATE	BY	REVISIONS

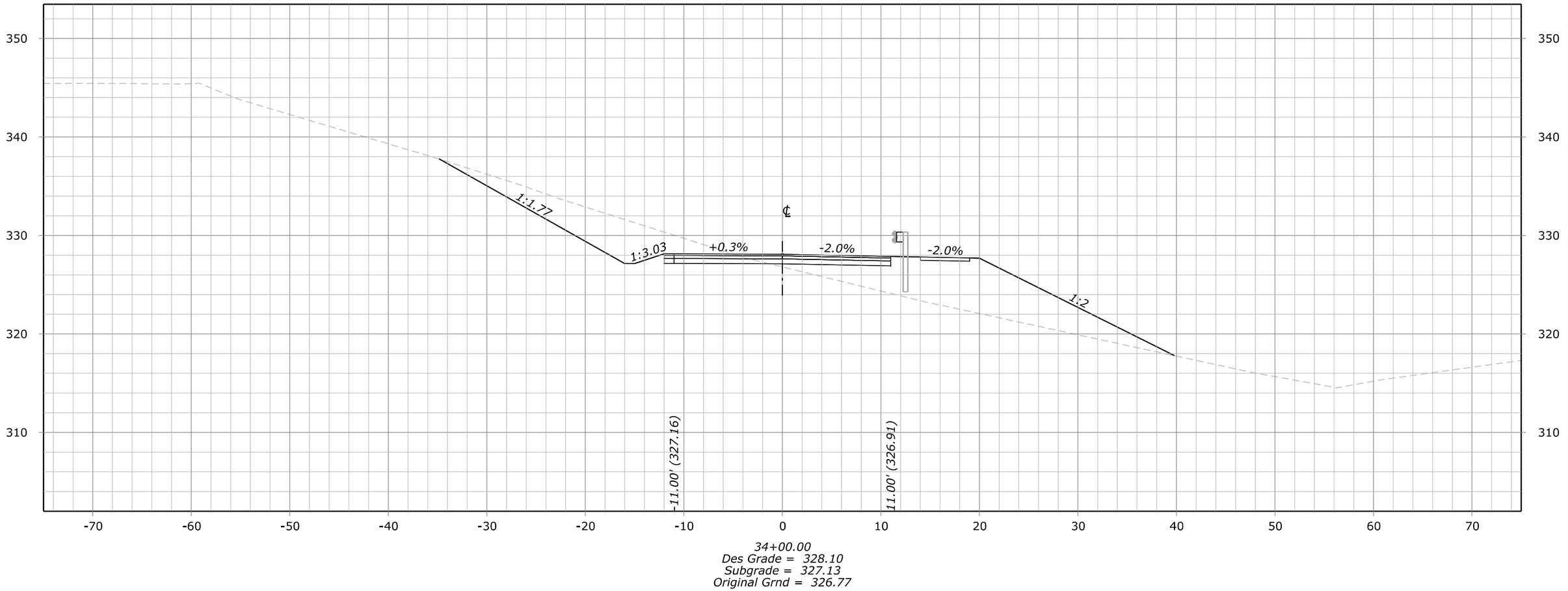
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTIONS

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	T07



34+00.00
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Subgrade = 327.13
Original Grnd = 326.77

NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
DEPARTMENT OF PUBLIC WORKS

CROSS SECTIONS

SHEET SUB-TITLE 1
SHEET SUB-TITLE 2

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8 April 2025 10:50 AM

STATE	PROJECT	SHEET NUMBER
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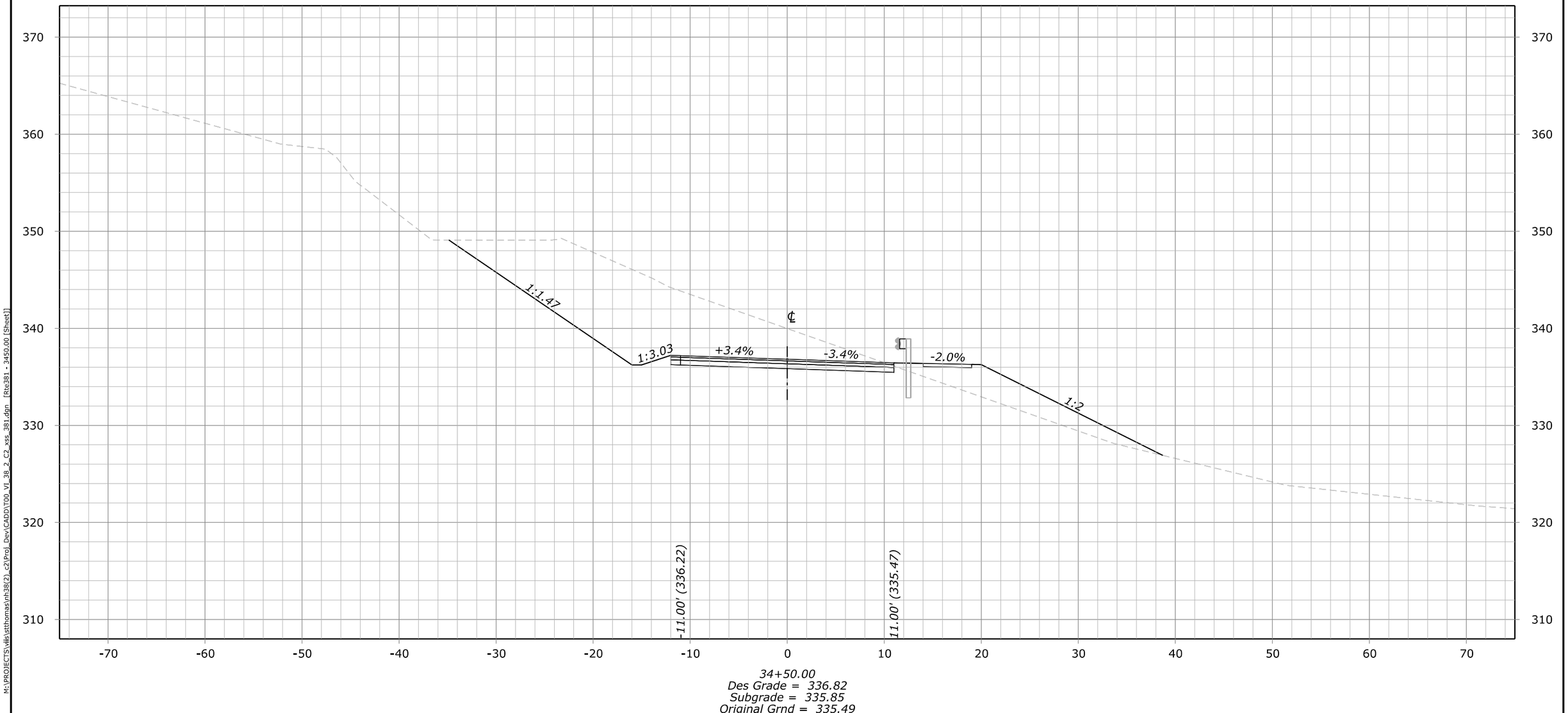

34+50.00
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Subgrade = 335.85
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8 April 2025 10:50 AM

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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CROSS SECTIONS

SHEET SUB-TITLE 1
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STATE	PROJECT	SHEET NUMBER
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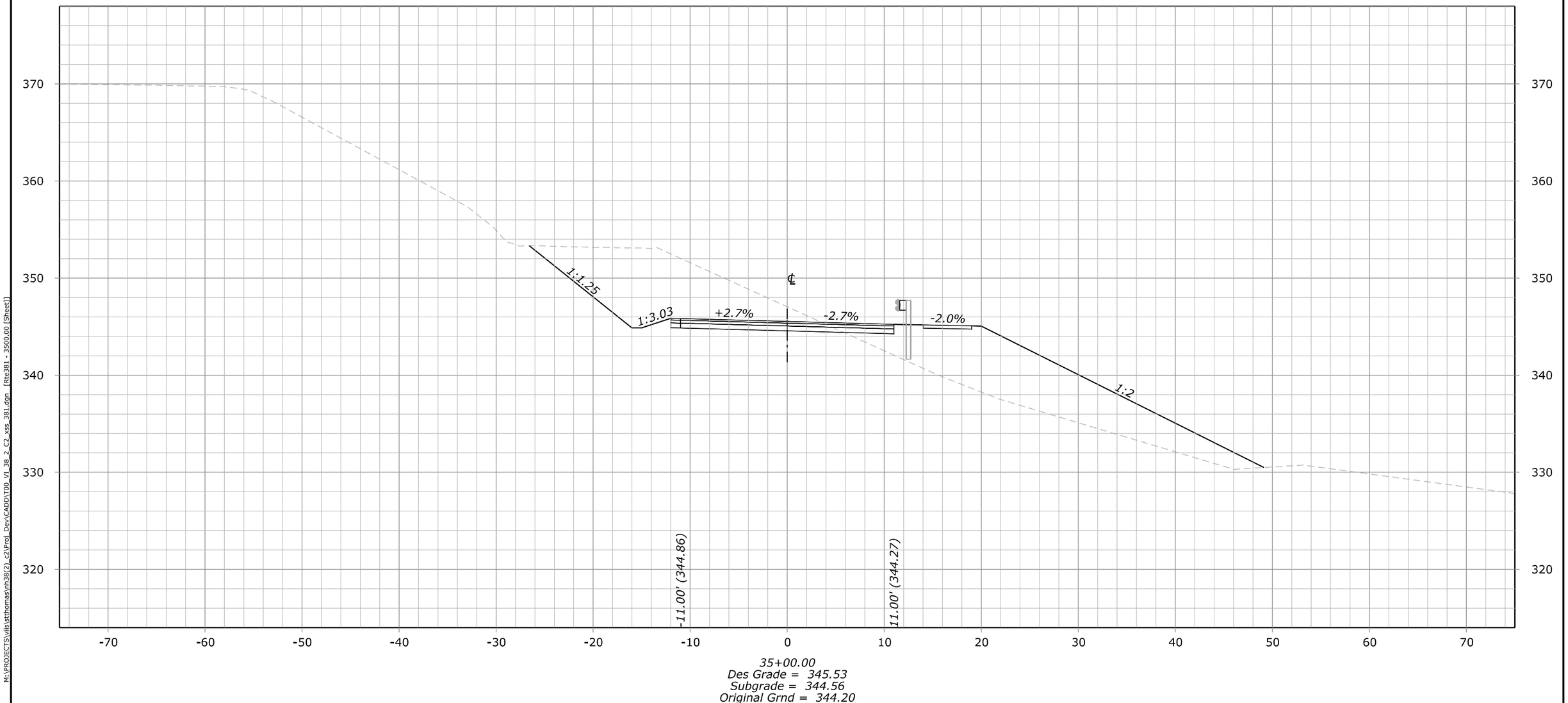

35+00.00
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Subgrade = 344.56
Original Grnd = 344.20

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
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STATE	PROJECT	SHEET NUMBER
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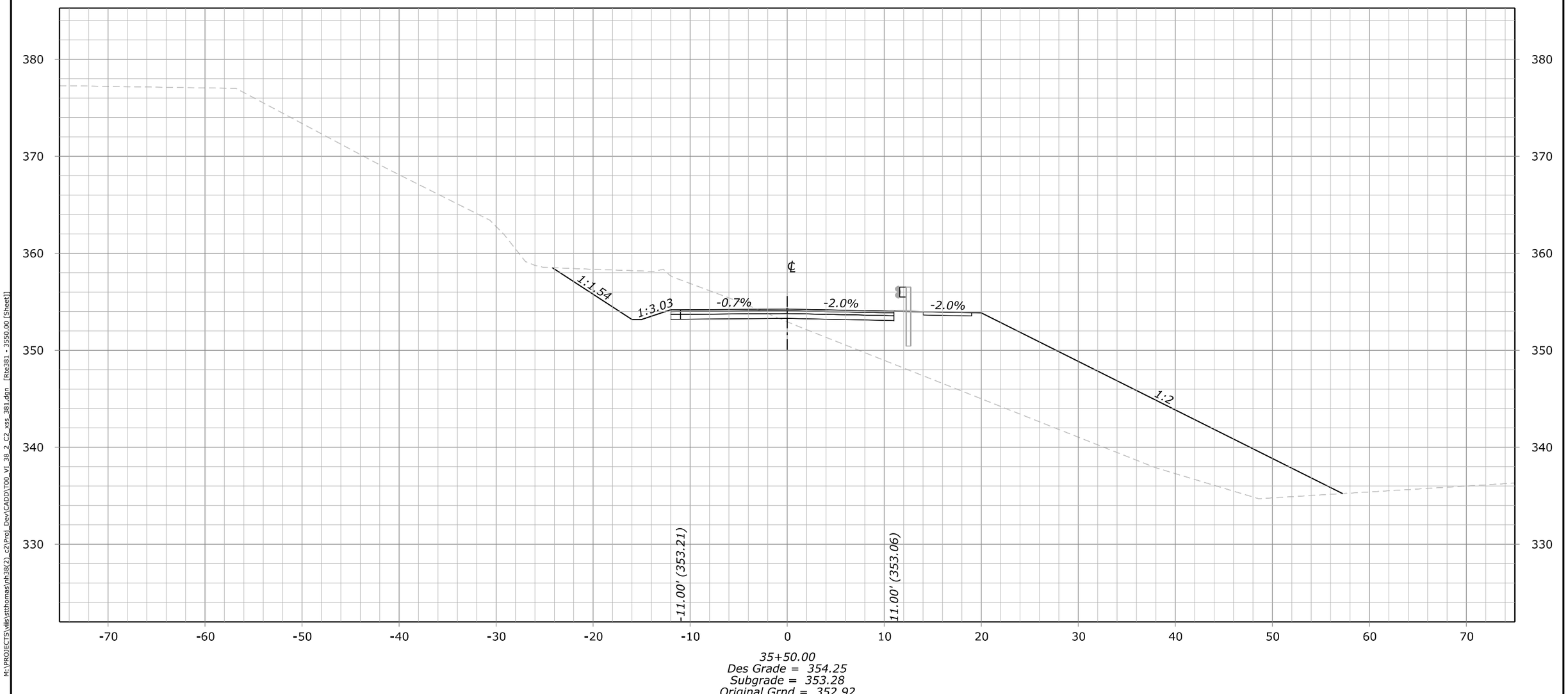

35+50.00
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Original Grnd = 352.92

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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STATE	PROJECT	SHEET NUMBER
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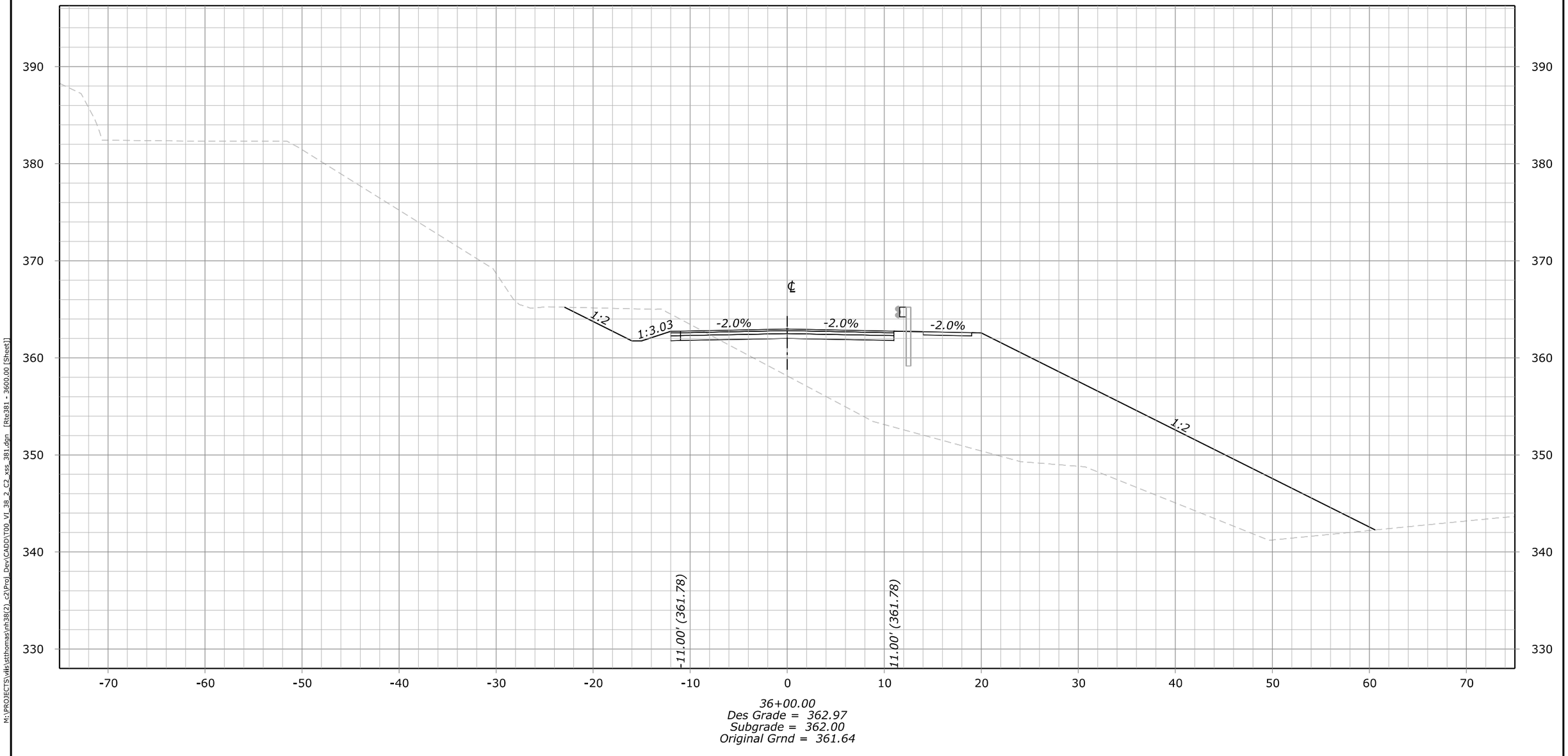

36+00.00
Des Grade = 362.97
Subgrade = 362.00
Original Grnd = 361.64

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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STATE	PROJECT	SHEET NUMBER
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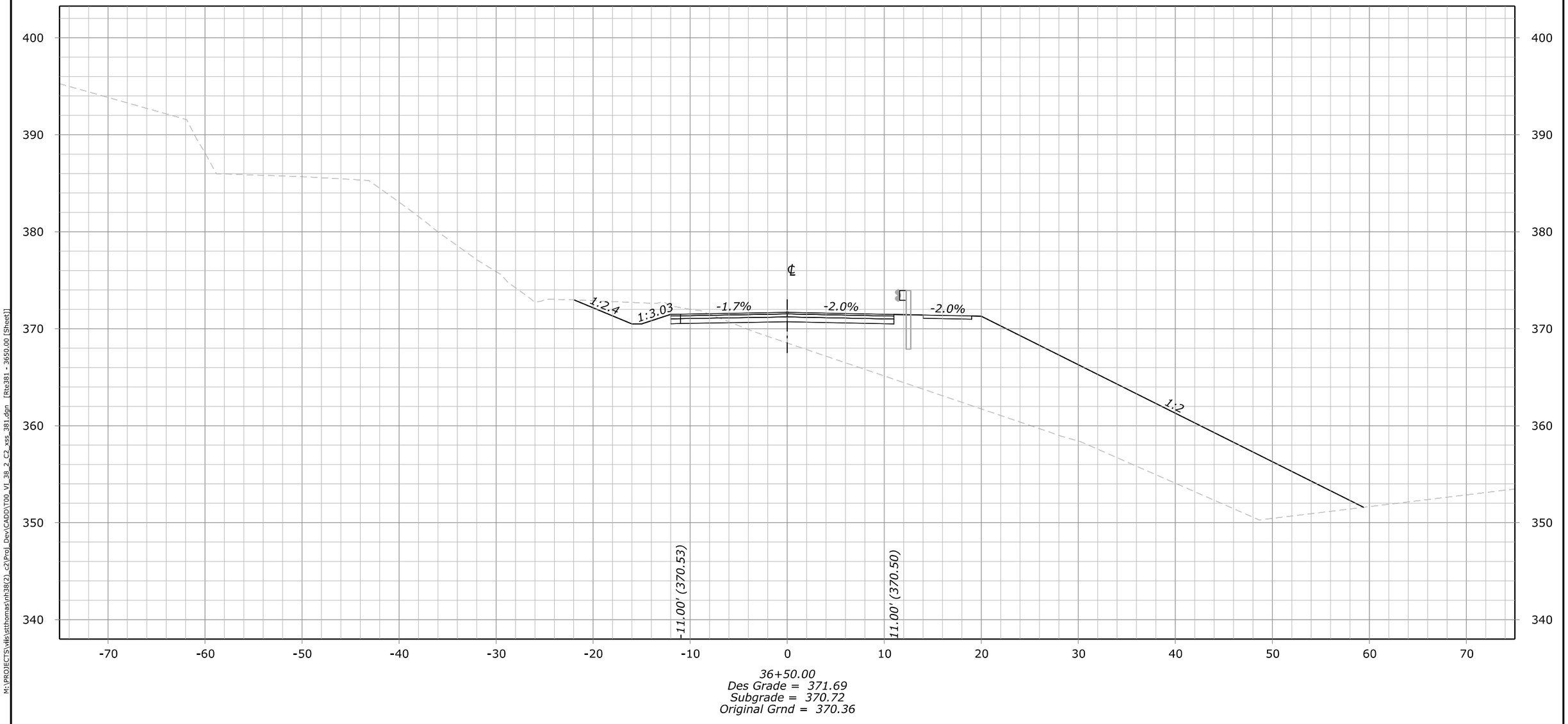

36+50.00
Des Grade = 371.69
Subgrade = 370.72
Original Grnd = 370.36

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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STATE	PROJECT	SHEET NUMBER
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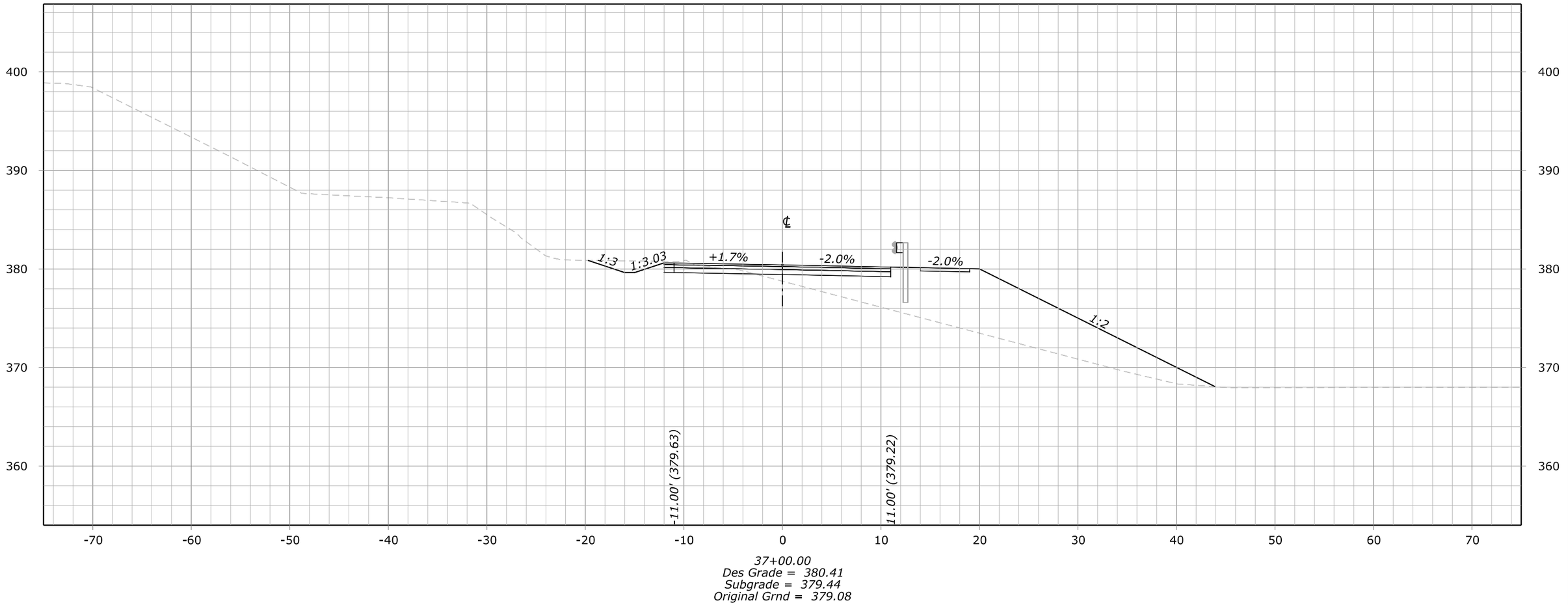

37+00.00
Des Grade = 380.41
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Original Grnd = 379.08

NO.	DATE	BY	REVISIONS

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STATE	PROJECT	SHEET NUMBER
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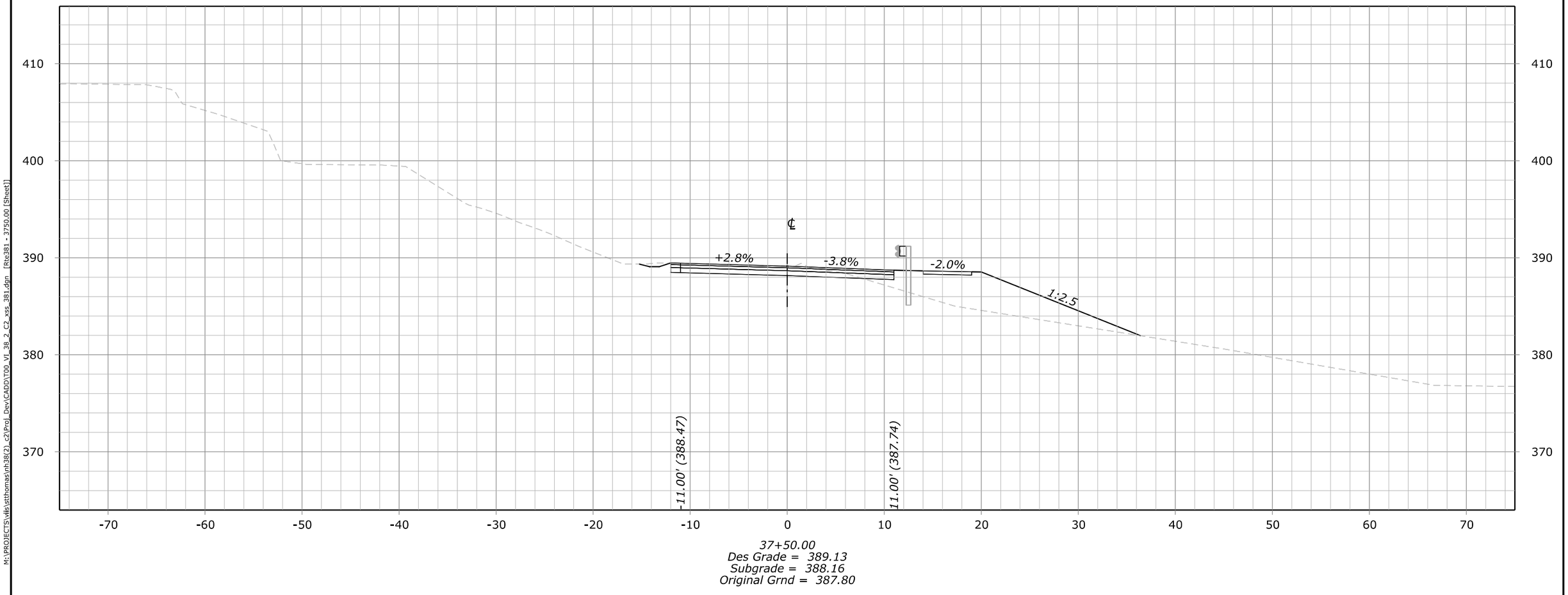

37+50.00
Des Grade = 389.13
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Original Grnd = 387.80

NO.	DATE	BY	REVISIONS

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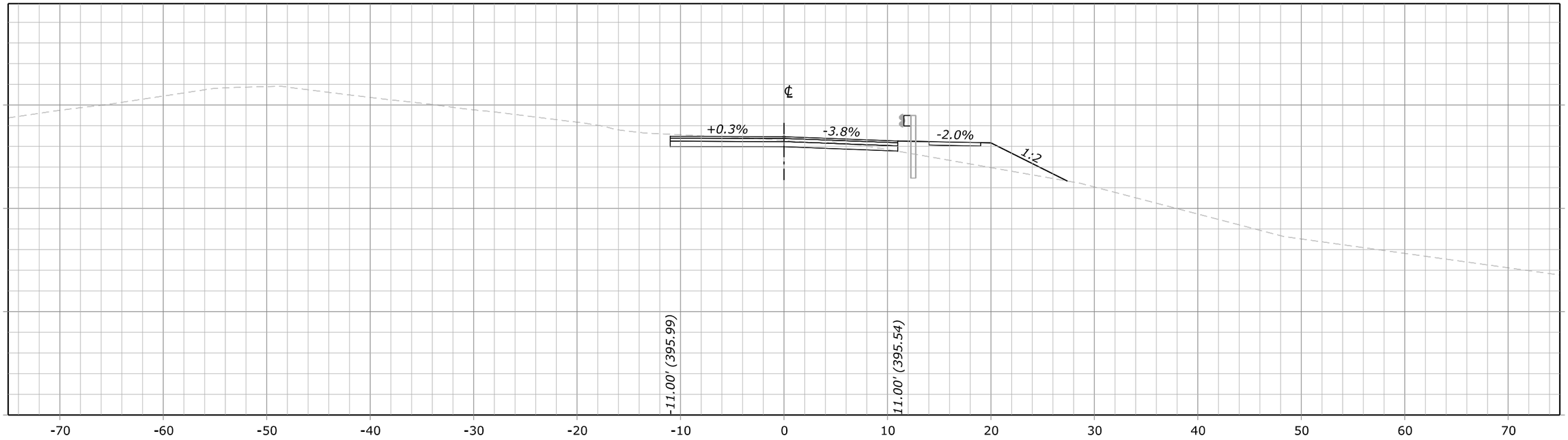
8 April 2025 10:54 AM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	T15



38+00.00
Des Grade = 396.93
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Original Grnd = 395.60

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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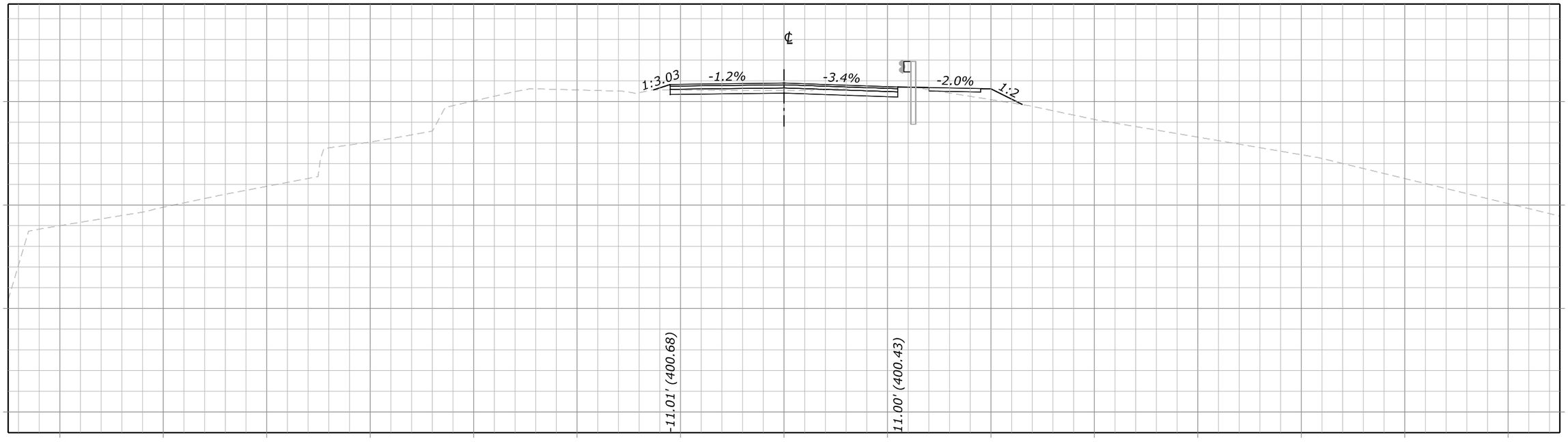
8 April 2025 10:54 AM

STATE	PROJECT	SHEET NUMBER
VI	VI 38(2) C2	T16



38+50.00
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Subgrade = 400.81
Original Grnd = 400.45

NO.	DATE	BY	REVISIONS

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STATE	PROJECT	SHEET NUMBER
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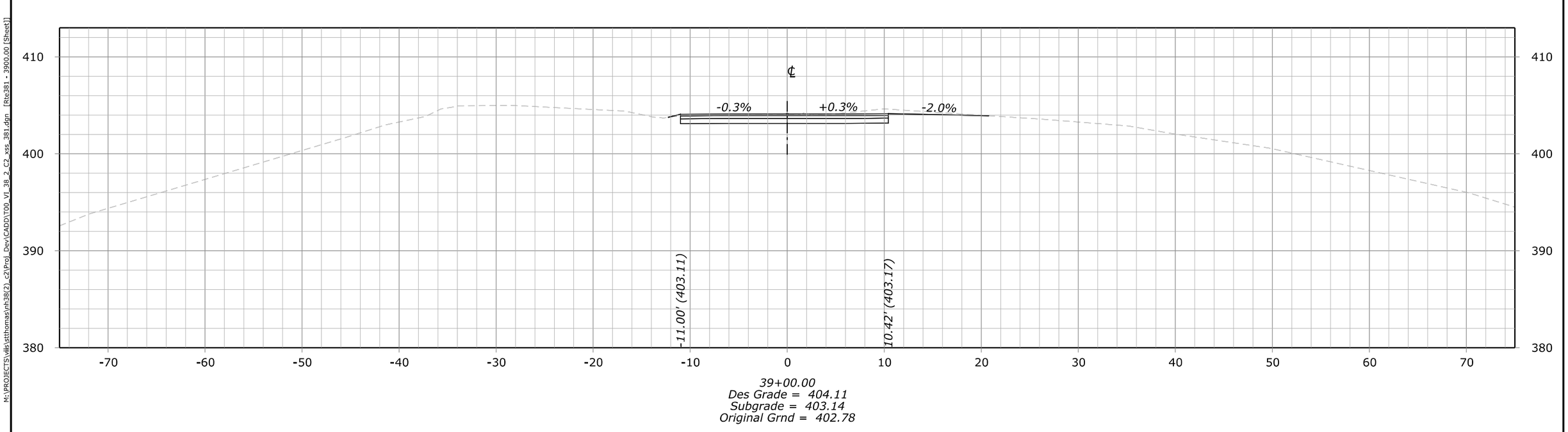

39+00.00
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Original Grnd = 402.78

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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STATE	PROJECT	SHEET NUMBER
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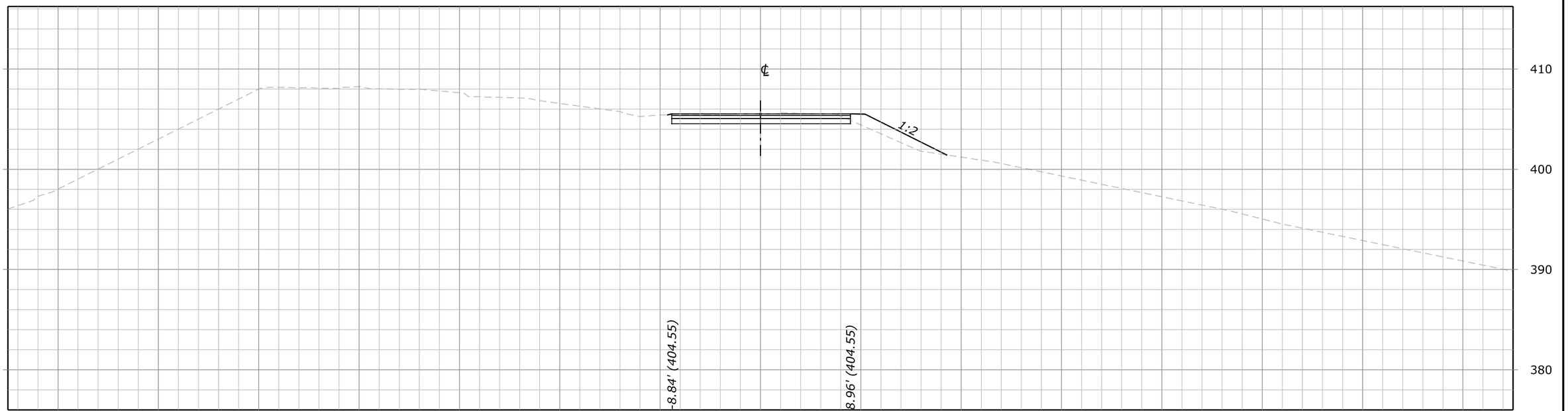

39+50.00
Des Grade = 405.52
Subgrade = 404.55
Original Grnd = 404.19

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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STATE	PROJECT	SHEET NUMBER
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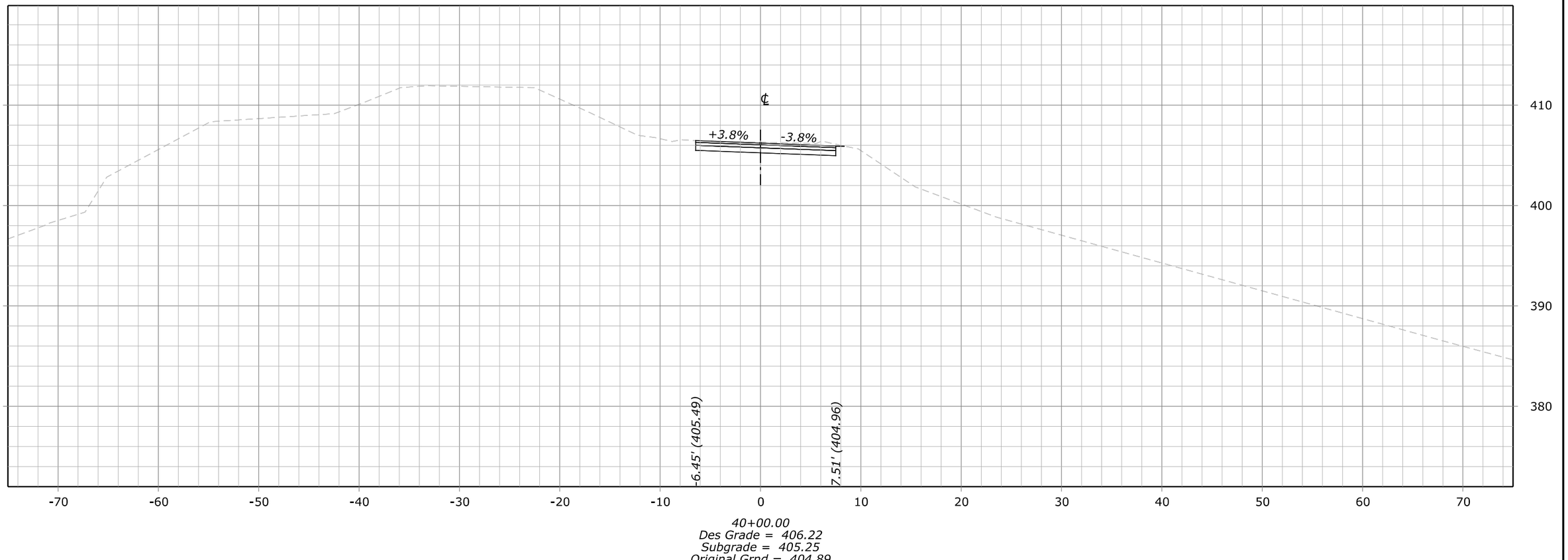

NO.	DATE	BY	REVISIONS

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

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STATE	PROJECT	SHEET NUMBER
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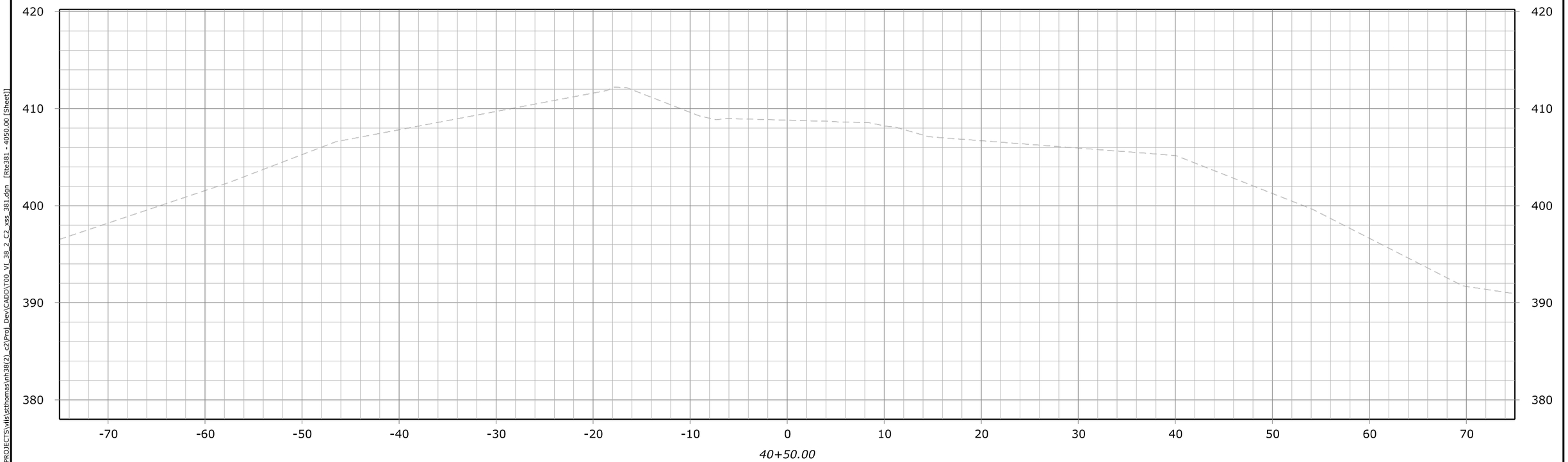

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8 April 2025 10:57 AM

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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SHEET SUB-TITLE 1

SHEET SUB-TITLE 2

STATE	PROJECT	SHEET NUMBER
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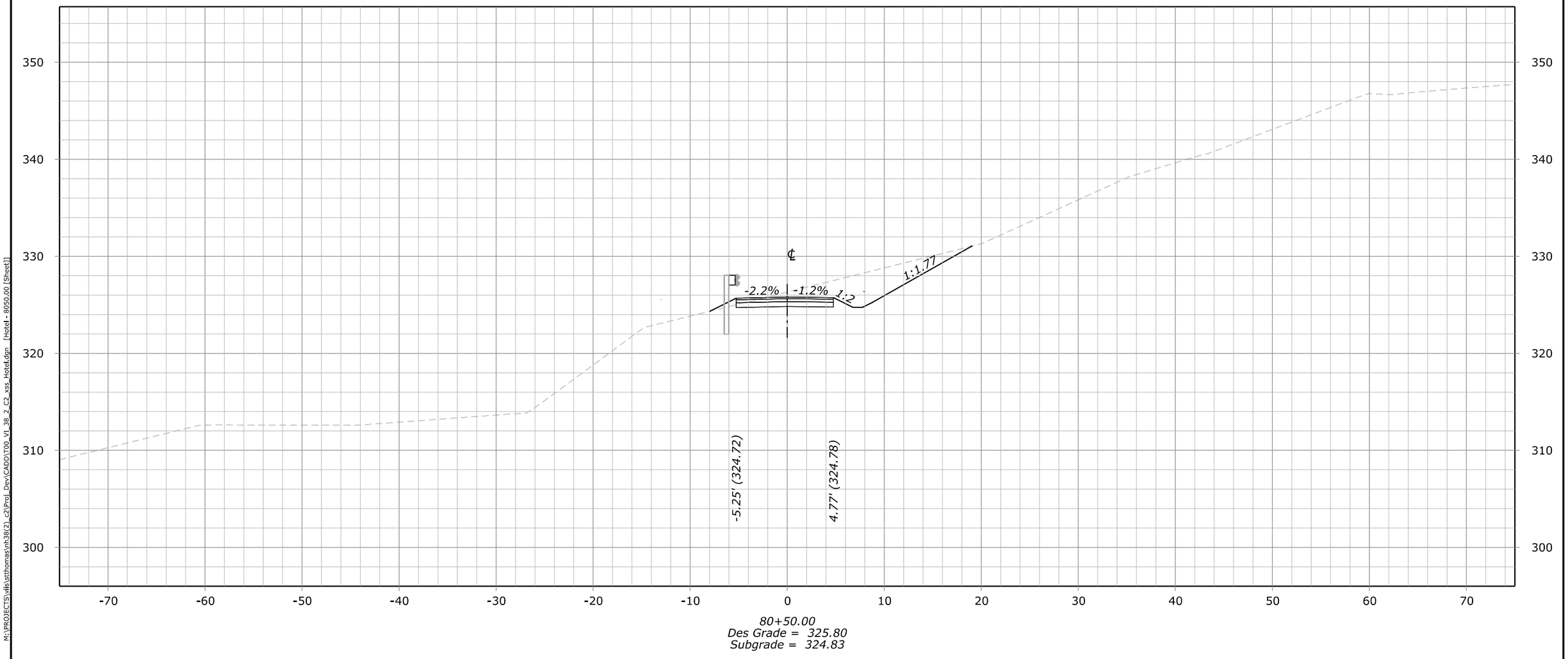

NO.	DATE	BY	REVISIONS

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

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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CROSS SECTIONS

SHEET SUB-TITLE 1
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16 April 2025 2:05 PM

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STATE	PROJECT	SHEET NUMBER
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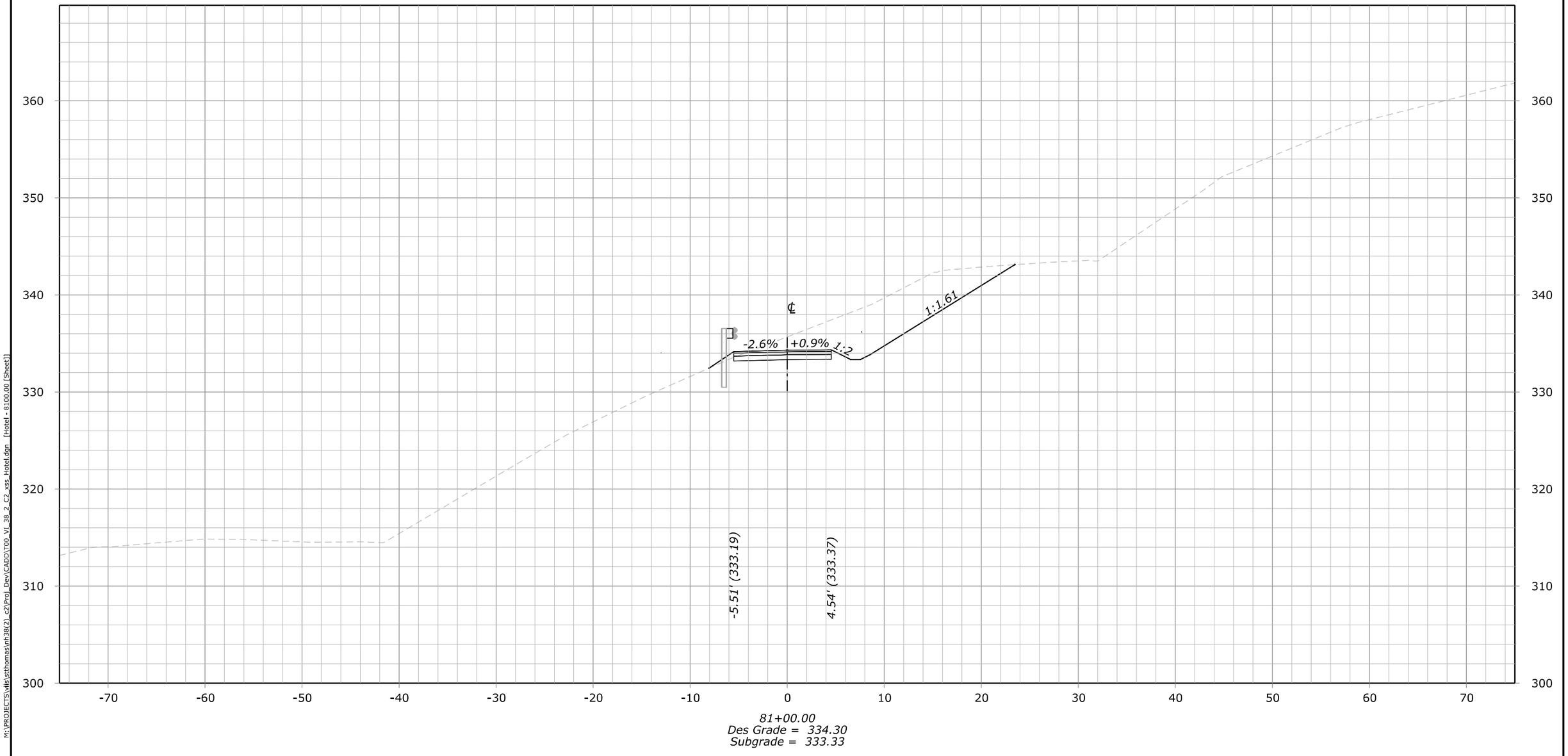

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30 April 2025 11:24 AM

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STATE	PROJECT	SHEET NUMBER
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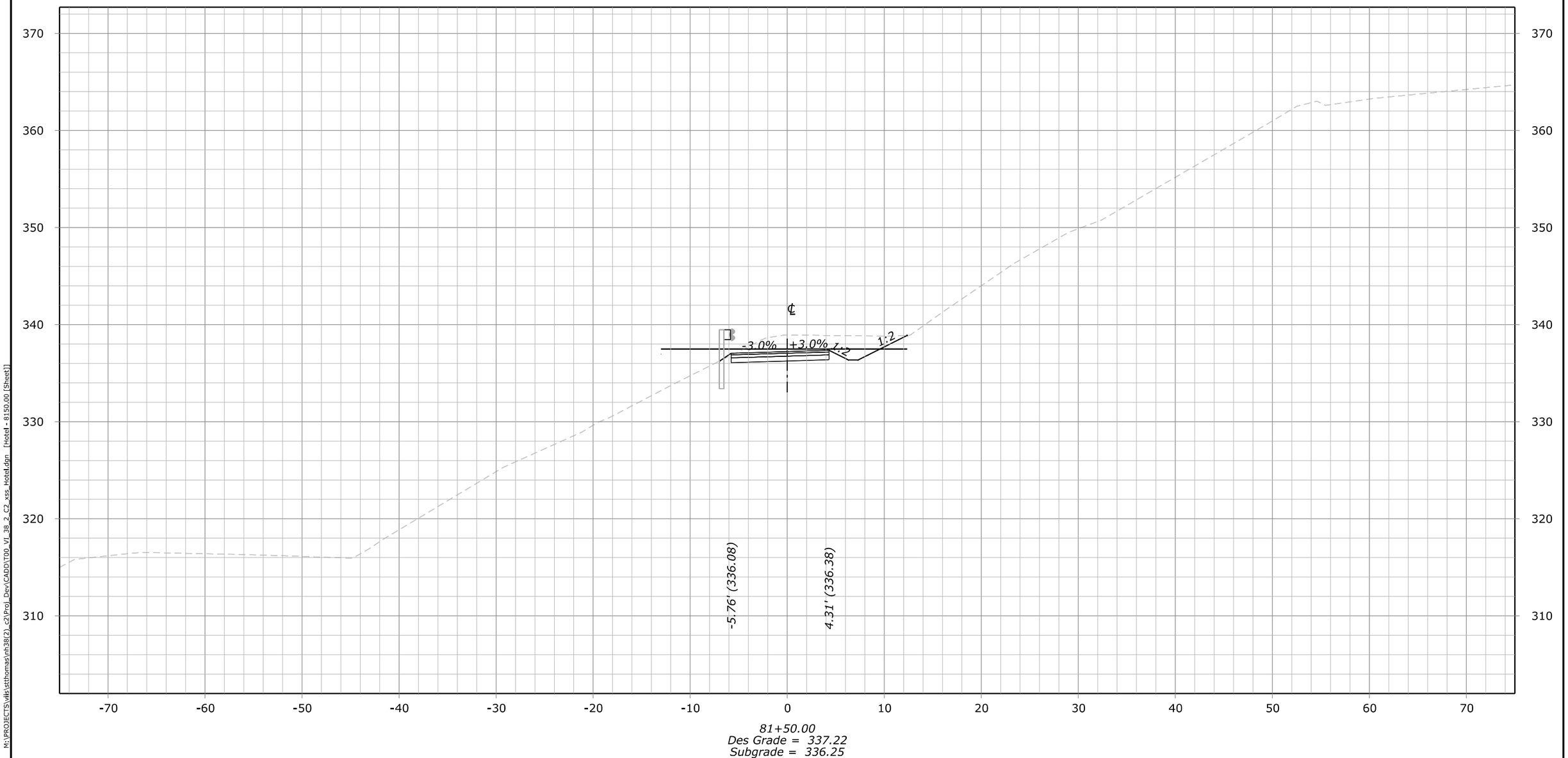

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
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STATE	PROJECT	SHEET NUMBER
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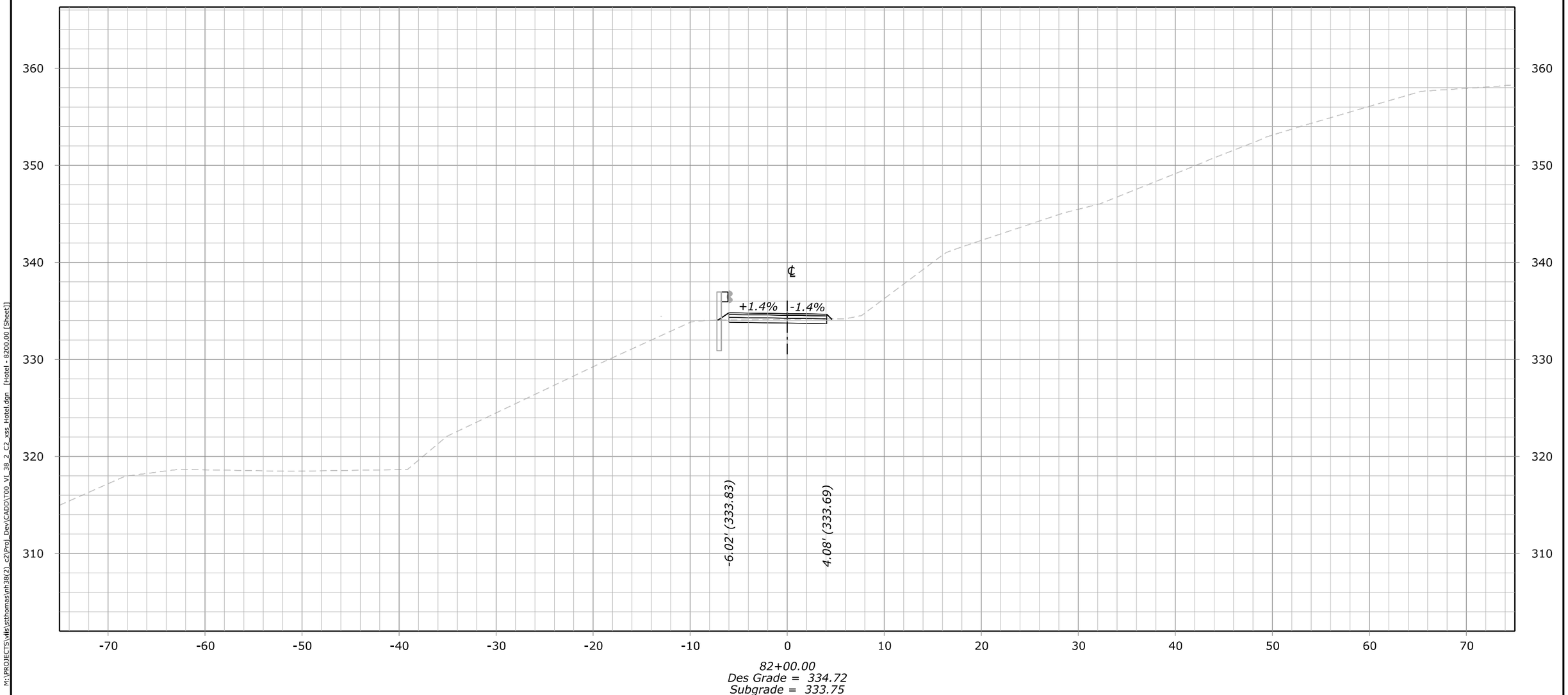

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
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STATE	PROJECT	SHEET NUMBER
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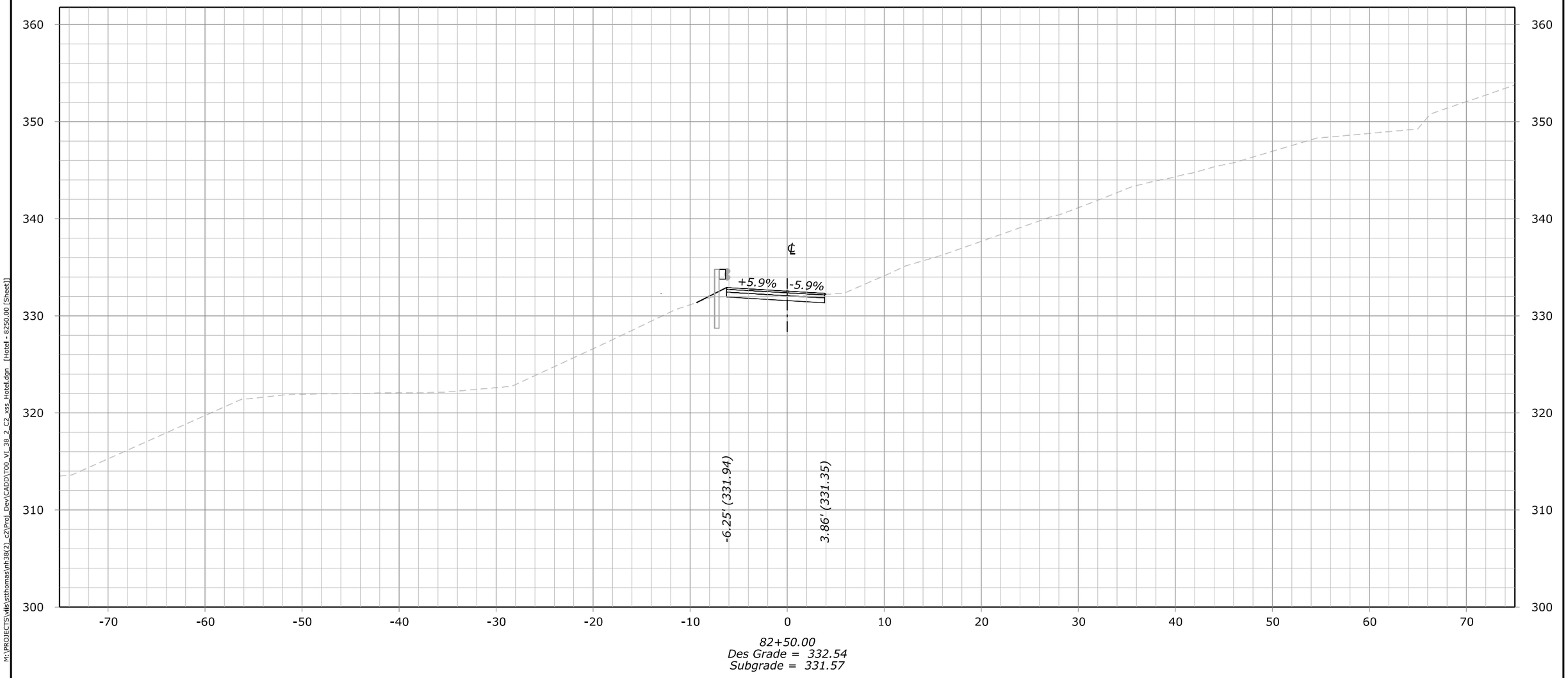

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6 May 2025 8:39 AM

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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STATE	PROJECT	SHEET NUMBER
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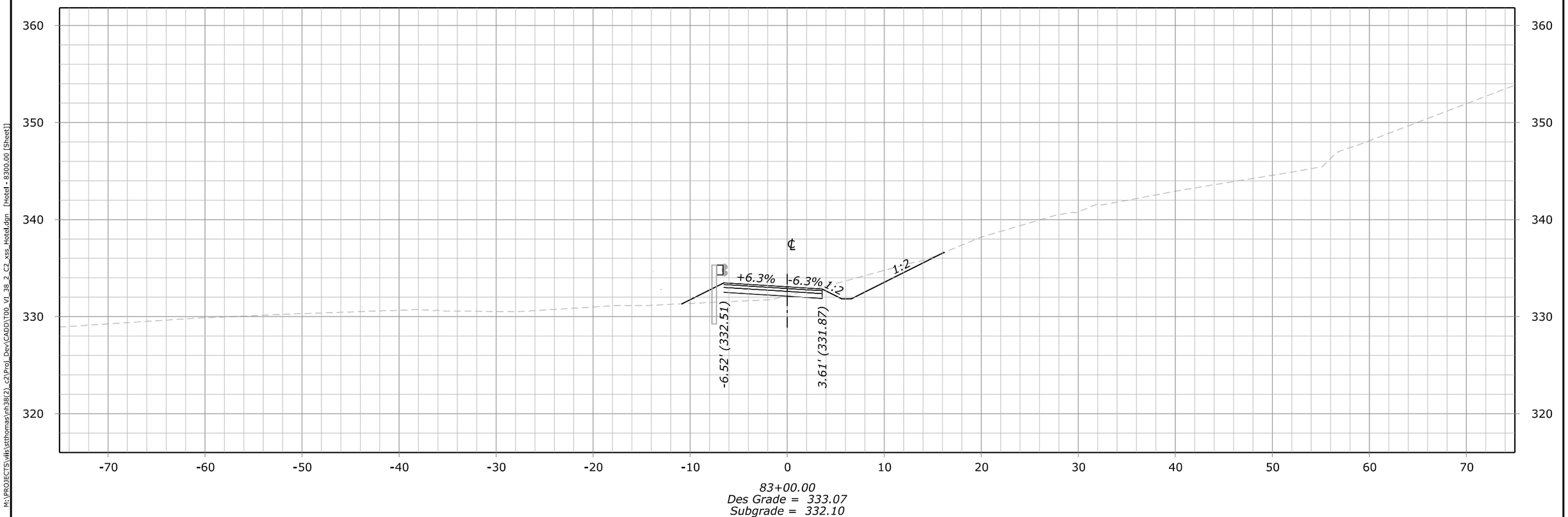

83+00.00
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Subgrade = 332.10

NO.	DATE	BY	REVISIONS

U.S. DEPARTMENT OF TRANSPORTATION
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STATE	PROJECT	SHEET NUMBER
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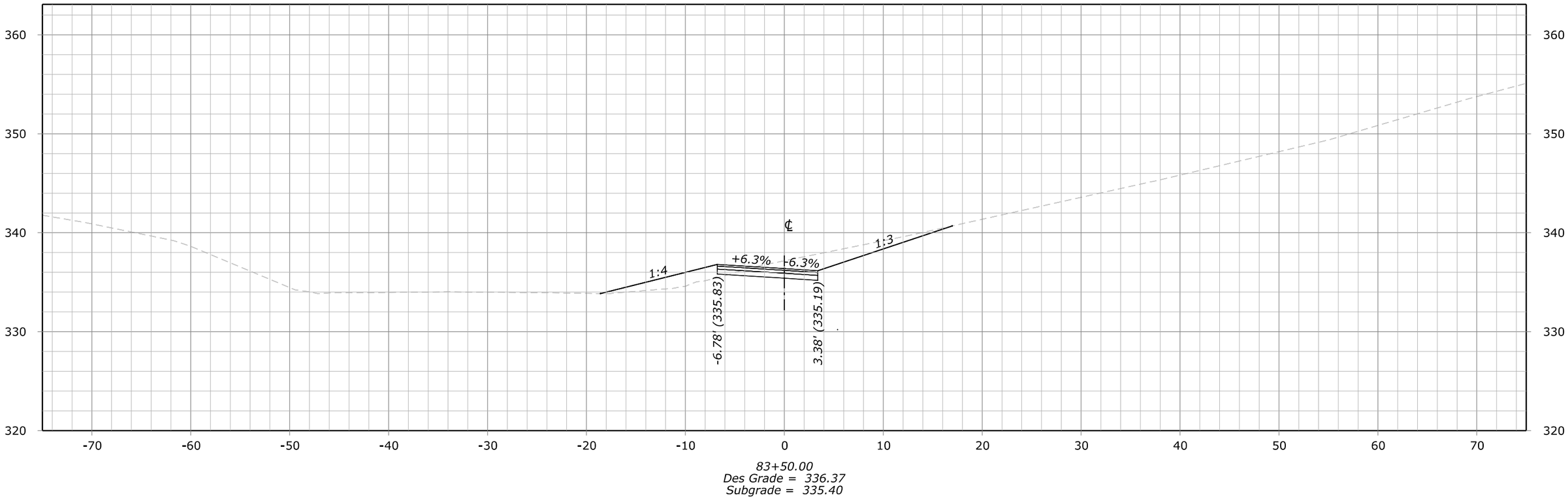

83+50.00
Des Grade = 336.37
Subgrade = 335.40

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STATE	PROJECT	SHEET NUMBER
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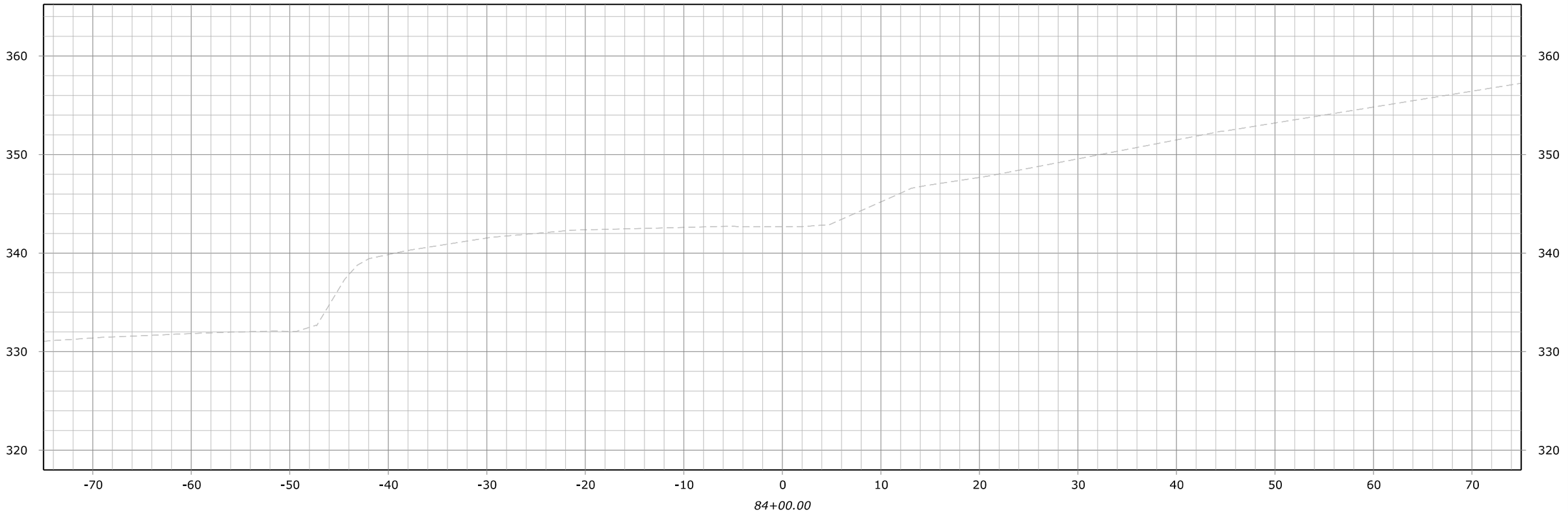

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30 April 2025 1:12 PM

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